

Final cover letter and narrative PDF.pdf

Attachment A.pdf

Attachment B.pdf

Attachment C.pdf

Attachment D.pdf

Attachment E1.pdf

Attachment E2.pdf

Attachment E3.pdf

Attachment E4.pdf

Attachment E5.pdf

Attachment F1.xlsx

Attachment F2.xlsx

Attachment F3.xlsx

Attachment F4.xlsx

Attachment G1.pdf

Attachment G2.pdf

Attachment G3.pdf

Attachment H.pdf

Attachment I1.pdf

Attachment I2.pdf

Attachment J1.pdf

Attachment J2.pdf

Attachment J3.pdf

Attachment J4.pdf

Attachment J5.pdf

Attachment K1.pdf

Attachment K2.pdf

Attachment L1.pdf

Attachment L2.pdf

Attachment L3.pdf

Attachment L4.pdf

Attachment M1.pdf

Attachment M2.pdf

Attachment M3.pdf

Attachment M4.pdf

Attachment N.pdf

Attachment O.pdf

Attachment P1.pdf

Attachment P2.pdf

Attachment P3.pdf

Attachment P4.pdf

Attachment Q.pdf



March 24, 2021

Mr. Renante Marante
Environmental Engineer III
Chicago Department of Public Health
333 S. State Street, Room 200
Chicago, Illinois 60604

**Subject: Response to Requests for Additional Information dated March 15, 2021
and March 17, 2021 for a Class IVB Large Recycling Facility Permit
Application located at 11600 S. Burley Avenue, Chicago, Illinois**

Dear Mr. Marante:

In accordance with Chicago Department of Public Health (CDPH) letters dated March 15, 2021 and March 17, 2021, please allow the following submittal to serve as a response to the Detailed Request for Additional Information for a new Class IVB Recycling Facility Permit application for General III, LLC d/b/a Southside Recycling ("Southside Recycling") at 11600 S. Burley Avenue, Chicago, IL.

If you have any questions or need any additional information, please let me know.

Sincerely,

Jim Kallas

Response to CDPH Detailed Request for Additional Information dated March 17, 2021

As you review the substantive responses to your March 17 letter, please understand the following background. From the time General III, LLC (d/b/a Southside Recycling) purchased the assets of General Iron and created the plan for the new recycling facility, it set out to become a transformative company. Southside Recycling will provide a critical metal recycling function for the Chicago area in a way that prioritizes environmental health. The owners of Southside Recycling have operated on the Southeast Side community for decades and they are sensitive to the burdens that have been placed on the surrounding community from industry and elsewhere. Southside Recycling has made its mission to create a facility that changes the old script.

Thus, Southside Recycling has invested \$80 million, taking advantage of a 175-acre plot and the best-in-class pollution control equipment to make sure that air emissions from the facility are within all applicable health and safety standards, even when considering the existing environmental burdens on the community. In both its Construction Permit application to the IEPA and its Large Recycling Facility permit application to the City, Southside Recycling has modeled the cumulative impact of the new operation in great detail, even considering the impact of the adjacent companies which, although operated independently, do have some overlapping ownership with Southside Recycling. All of the modeling performed has demonstrated full compliance with all health and safety standards.

Despite Southside Recycling's comprehensive, compliant and truly transformative plan of operation, Southside Recycling has yet to receive its permit. It is difficult to imagine how any further delay could be motivated by environmental or other public safety concerns, given the thoroughness of the information provided by Southside Recycling along with the lack of environmental controls at the only other large metal shredder in operation in Chicago, which the City is allowing to operate during Southside Recycling's absence.

In response to CDPH's request for information regarding "the relationship between and the potential cumulative impact of all Reserve Management Group operations at 11600 S. Burley", we must point out that the cumulative impact of the existing companies on the Campus Property, along with the addition of Southside Recycling, was thoroughly reviewed and fully vetted by the IEPA and its modeling expert during a 9-month permit application review process. This is confirmed in several of the public comments from the IEPA Responsiveness Summary including the following:

- The IEPA response to Public Comment 41 states "*While not statutorily or regulatorily required to perform any cumulative impact analysis, General III performed air dispersion modeling to address its impacts on ambient air quality. The modeling looked at metallic hazardous air pollutants, with special attention to lead and manganese. The modeling demonstrated that the air impact will not exceed any established standards. A*

Response to CDPH Detailed Request for Additional Information dated March 17, 2021

robust inventory of other local sources was included in the modeling inventory and any other potential sources are accounted for through use of the monitoring station at Washington High School for background monitoring values.”

- The IEPA responses to Public Comments 42 & 43 state *“The Illinois EPA has endeavored to address the contributions from other sources in the region to the two hazardous air pollutant metals believed to be of significance – lead (Pb) and manganese (Mn). Not only was there a robust inventory of other sources included in the modeling inventory, but a background monitored concentration was added to the modeled impacts to account for potentially unknown, unpermitted, natural and/or distant sources.”*

- The IEPA response to Public Comment 46 states *“GIII performed air dispersion modeling for metallic HAPs in support of the air construction permit application and demonstrated that the air impact will not exceed any established standards. The Illinois EPA later evaluated the increase in metallic HAPs from the four SCPM facilities in conjunction with the GIII HAP emissions but did not find any increases of potential concern. Metal HAP emissions from the SCPM Entities’ ROSS affected sources are less than 0.1 tons annually.”*

As the above IEPA responses demonstrate, the cumulative impact of all companies on the Campus Property have already been accounted for in the air dispersion modeling provided to IEPA and CDPH. By including data from permitted sources in the area along with data from the Washington High School air monitor, the modeling fully considered the impact of the existing companies that have been operating on the Campus Property for years. The IEPA Responsiveness Summary is can be viewed at the following web address:

<https://external.epa.illinois.gov/WebSiteApi/api/PublicNotices/GetAirPermitDocument/6381>

It’s also worth noting that the air dispersion modeling results represent a significant overestimation based on the following:

1. The throughput rate utilized for the modeling analysis was 175% of the amount allowed by the IEPA Permit.
2. As noted in the IEPA response to Public Comment 43 of the Responsiveness Summary states *“The IEPA directed Southside Recycling to use conservative background values from the analysis of total suspended particulate samples from the Washington High School monitor. For lead, this represented the highest three-month rolling average concentration for years 2016-2018. For manganese, the background values represented the maximum 24-hour average and annual average concentrations during those same years.”*

3. The modeling identified the predicted maximum ambient air concentration of lead and manganese from the modeled emission sources at Southside Recycling and off-site sources of lead and manganese emission identified by IEPA. In this case, the points of maximum concentration for lead and manganese were on the ambient air boundary which is the lease property line adjacent to Southside Recycling. The maximum predicted lead and manganese concentrations adjacent to Southside Recycling were then added to the maximum measured lead and manganese ambient air impacts at the Washington High School monitoring station. The combined totals were then compared to the identified air quality standard. This represents a worst-case scenario since the modeled impact of lead and manganese from Southside Recycling, along with the other sources identified by IEPA, would be significantly lower at the Washington High School monitoring station than at the Southside Recycling lease property line.

It is also worth noting that during the 9-month IEPA Construction Permit application review process, IEPA's air modeling expert thoroughly reviewed historical emissions data for the existing companies on the Campus Property. Following his review he stated that the emissions from the existing companies were so low that it would have a negligible impact on the air dispersion modeling results.

Another issue that must be addressed is the CDPH's use of the term "Single Source" as it relates to the Large Recycling Facility Permit application process. The term "Single Source" is used by IEPA and U.S. EPA to determine whether facilities under common control have potential combined emissions in excess of Major Source air emission thresholds in order to ensure that a company doesn't create additional entities for the purpose of avoiding Major Source permit requirements. While it is correct that IEPA determined that all the companies operating on the Campus Property, along with Southside Recycling, will constitute a "Single Source", IEPA has also acknowledged that this "Single Source" will be a minor source of air emissions. Thus, while Southside Recycling and the existing companies could operate under a single IEPA minor source operating permit, IEPA has already stated that two separate operating permits will be issued, one for Southside Recycling and one for the existing companies. This is confirmed in the response to Public Comment 57 of the IEPA Responsiveness Summary which states "*While the facility is an addition to several operations currently at the site, it is not a major source of emissions as defined by the Clean Air Act. The source will have emissions that are below major source levels. And in fact, the existing sources at the site, which all currently are ROSS sources will be required to obtain FESOP permits as a single source with these additional operations.*"

CDPH has previously indicated a desire to issue separate Recycling Facility Permits for Southside Recycling and the existing companies on the Campus Property. This is an appropriate and logical approach since each of the existing companies operate as separate and distinct businesses and none of the existing companies qualify as a Large Recycling Facility under CDPH's Rules. Based on the facts outlined above, it is clear that the "Single Source" definition as utilized by IEPA and U.S EPA should not be applied to Southside Recycling and the existing

companies.

Following are responses to CDPH’s March 17, 2021 Detailed Request for Additional information. It should be noted that while most of CDPH’s requests apply to the existing companies, some of the requests are specific to Southside Recycling only. However, for ease of review and as requested by CDPH, responses to all CDPH requests are provided herein.

CDPH Request

1. *For each of the businesses operating at the Campus Property:*

a. *Primary SIC Codes of all businesses operating on the Campus Property;*

SCPM Response

Company	Primary SIC Code
South Chicago Property Management*	6531
Southside Recycling**	5093
Napuck Salvage of Waupaca, LLC	5093
South Shore Recycling	5093
Reserve FTL, LLC	5093
RSR Partners, LLC	5093

* South Chicago Property Management (SCPM) is the owner of the Campus Property.

** Southside Recycling is not currently operating.

SIC Code 5093 covers “*Establishments primarily engaged in assembling, breaking up, sorting, and wholesale distribution of scrap and waste materials.*” It should be noted that 5093 is a primary code and since it encompasses an extensive range of activities and materials, there are currently over 100 extended codes under SIC Code 5093. Therefore, while the existing SCPM companies all share a common 4-digit

SIC Code, each company could qualify for classification under a different extended SIC Code or Codes based on the separate and distinct activities and materials that are handled and processed at each company.

CDPH Request

- b. Plot map depicting the boundaries of individual businesses operating on the Campus Property;*

SCPM Response

An aerial photograph depicting the approximate limits of each existing company on the Campus Property is included in Attachment A.

CDPH Request

- c. Shared staffing and resources between businesses, both currently and as expected in connection with the proposed new General III operation, including:*

- i. Shared workforces;*

SCPM Response

Each operating entity work force has its own payroll and is a separate legal entity. However, Reserve FTL personnel generally perform periodic maintenance activities on mobile equipment throughout the SCPM Campus Property. There may also be occasions when a worker with specialized skills, such as a mechanic, would assist another company.

- ii. Shared management;*

SCPM Response

Each operating entity has its own management personnel. Most of the companies have more than one manager that handle a specific aspect of the operation. There is no shared management in the day-to-day operations of any of the businesses. Napuck Salvage of Waupaca, LLC managers manage Napuck business. Reserve FTL, LLC managers manage Reserve business. South Shore Recycling managers manage South Shore business. RSR Partners (Regency Technologies) managers manage RSR business. There are two Senior level managers employed by Reserve FTL, LLC that oversee the operational and commercial coordination of Napuck Salvage of Waupaca, LLC with its other remote operation and of Reserve FTL, LLC with its other remote operation (not internally at the Chicago site). There is no connection with any of the staff listed above and the new Southside Recycling operation.

iii. Shared administrative functions;

SCPM Response

Administrative functions such as accounting are performed by Reserve FTL, LLC employees for not only Reserve but also Napuck Salvage of Waupaca, South Shore Recycling and South Chicago Property Management. The administrative functions of RSR Partners are not performed by any personnel at this location. Human Resources is centralized throughout the RMG businesses and are Reserve employees wherever they may be located. Safety is the responsibility of every employee and specifically the manager(s) of their respective operation. An on-site safety manager provides support as needed. There is no connection with any of the staff listed above and the new Southside Recycling operation. There is a possibility of some sharing of scale and related administrative personnel.

iv. Shared equipment (e.g., scale, storage tanks, loading/processing equipment, fueling and vehicle-maintenance);

SCPM Response

Each company has sufficient equipment to operate its day-to-day business. RSR Partners shares no equipment with any other operating company, but does utilize the truck scale occasionally. In the event that a piece of equipment at one of the companies breaks down, it may, under certain scenarios, need to borrow a compatible piece of equipment from one of the other companies. Napuck Salvage of Waupaca, LLC does not share any equipment with any other operating company, but does utilize the truck scale. Reserve FTL, LLC does not share any equipment with any operating company, but does utilize the truck scale. South Shore Recycling does not share equipment with any operating company. No loading or processing equipment is shared. Included in Attachment B is a matrix that shows common usage such as scale, locomotive and fuel tank/truck.

- v. *Shared intermediates or byproducts (i.e. the transfer of materials from one business to another for storage, handling, or additional processing or treatment). An example may be South Shore Recycling taking engines to Napuck for processing;*

SCPM Response

There is no transfer of material between companies. If material is generated at one company and moves to another company on the Campus Property, it is done as a purchase or sale. For example, RSR Partners produces a small volume of steel from the manual breakdown of electronics. This material is a finished product for RSR which could be put into a collection box and sold to any scrap collector. Given the proximity and freight advantage, RSR typically sells the steel to Reserve FTL, LLC which would then blend the material as is, or shear or bale the material depending on market factors. As another example, South Shore Recycling buys miscellaneous steel. This material would typically be sent to an outside shredder or to Reserve FTL, LLC depending on size and other characteristics. In the future, South Shore won't purchase this material as it will be purchased directly from the suppliers by Southside Recycling. Similarly, material that Reserve FTL, LLC typically purchases for shearing will, in the future, most likely flow to Southside Recycling to be shredded. Based on such anticipated scenarios, we expect a meaningful decline in Reserve FTL, LLC and

South Shore Recycling volume. Shreddable material will be sent to Southside Recycling since shredding is the most efficient and environmentally conscious means of processing recyclable metal. The shreddable material that is purchased directly from suppliers by Southside Recycling and thus not purchased by other SCPM companies leads to an overall reduction in emissions as this material has already been accounted for in Southside Recycling's permitted throughput. Furthermore, any quantity of material processed by any one of the entities will be accounted for in the respective IEPA operating permit.

Southside Recycling, as well as the existing companies on the Campus Property, will produce finished products that will be sold to the marketplace. Should any of these finished products be provided to another company on the Campus Property, they will be sold to that company. The purchase of material from another SCPM company simply means that less of that material must be purchased from outside sources. Similarly, the sale of material to another SCPM company simply means that less material would need to be shipped to outside sources. In the event that material is sold to or purchased by Southside Recycling from one of the existing companies, the material throughput and resulting emissions have already been accounted for in the air dispersion modeling conducted for Southside Recycling.

vi. *Shared pollution control responsibilities (i.e. street sweeper, refrigerant-recovery, etc.);*

SCPM Response

See SCPM Response to CDPH Request 1.c.iv. above.

vii. *A description of support/dependence relationships;*

SCPM Response

None of the companies are dependent upon one another to operate on a day-to-day basis. Each company is managed independently and generates its own work and production schedule. Security for the property is provided by South Chicago Property Management.

- viii. *Copy of current IEPA air permit(s), including Registration(s) of Small Sources (“ROSSs”); and*

SCPM Response

None of the existing companies operating on the Campus Property are eligible or required to maintain air permits with the Illinois EPA due to the extremely low emissions generated at each company. In fact, emissions are so low from each company that the combined emissions from all existing companies on the Campus Property are still below the eligibility threshold for the ROSS Program. A copy of the initial IEPA ROSS Registration letter issued to Napuck Salvage of Waupaca is included in Attachment C along with a copy of the IEPA letter acknowledging a Request for a Name Change which served to cover all existing companies on the SCPM Campus Property as a single ROSS Source. Included in Attachment D are emission calculations previously provided to IEPA which demonstrate that each of the existing companies, as well as all existing companies as a whole, are considered ROSS Sources.

- ix. *Copy of all IEPA annual air emission reports within the last three years, as applicable.*

SCPM Response

Submittal of Annual Emission Reports is required for companies with IEPA air operating permits. As outlined in the aforementioned response, the existing companies all operate under the IEPA ROSS Program and, therefore, Annual Emission Reports are not required.

CDPH Request

2. *CDPH requests the following information:*

- a. *A revised Air Quality Assessment report that accounts for all PM10 and metal-emission sources within the ambient air boundary, as depicted in section 3.3 of RK & Associates, Inc.’s Air Dispersion Modeling Report for Assessment of*

Particulate PM10 Impact. Such modeling shall include detailed accounting and modeling of emissions from all processes, vehicle travel over paved and unpaved surfaces, material storage and staging piles, non-road diesel engines, and torch or plasma cutting. The revised air quality assessment shall include a percent-silt and metals analysis for all unpaved surfaces and stockpiles.

SCPM Response

As outlined in detail in the introduction to this submittal, the air dispersion modeling performed as part of the Air Quality Assessment report did, in fact, account for emission sources within the ambient air boundary. Emission calculations for the operations at the existing companies that are included in Attachment D were submitted to IEPA as part of the modeling analysis performed. As mentioned previously, IEPA's modeling expert determined that emissions from the existing companies would have a negligible impact on the air dispersion modeling results.

- b. With respect to the existing facilities on the Campus Property, and in accordance with the conditions of their respective recycling facility permits, please provide the following information for each facility:*
 - i. A listing and associated quantities of all procured fuels and chemical over the last three years, including all diesel-fuel, propane, gasoline, acetylene gas, chemical solvents, degreasers, detergents, motor oil, grease, paint, and other coating product. The list shall include Safety Data Sheets (SDSs) for all the above chemicals stored and used by the business.*

SCPM Response

A list of fuels and chemicals along with the corresponding Safety Data Sheets are included in Attachment E.

- ii. *Monthly reports of all material receipts and shipments to and from each of the businesses within the last three years. Such summary shall include quantities in tons shipped or received (including receipts and shipments from and to other Campus Property businesses), the source business for inbound loads, the destination facility for outbound loads, and the recyclable material type or product name.*

SCPM Response

Monthly reports of all material receipts and shipments to and from each of the existing companies are included in Attachment F.

- iii. *Monthly reports of all waste shipments, including all used-oil, waste oil, liquid waste, municipal solid waste, and special waste shipments. Indicate if there are any quantities of waste shipments to other Campus Property businesses for consolidation or treatment prior to final disposition off of the Campus Property.*

SCPM Response

Monthly reports of all waste shipments are included in Attachment G.

- iv. *A detailed assessment of all pavement conditions and a schedule for the repair or improvement of broken or damaged pavements. All graveled surfaces shall be analyzed for percent-silt content (as required under paragraph II.a of this letter) to determine if supplemental gravel coating or a complete resurfacing is required.*

SCPM Response

A detailed assessment of the paved surfaces throughout the existing companies will be conducted and damaged pavements will be repaired as needed. Following the repair of any damaged pavements, paved surfaces at the existing companies will be monitored and maintained in accordance with the Pavement Maintenance

Plan. Also, the graveled surface will be analyzed for percent-silt content and the analysis results will be provided to CDPH when complete. Based on the results of the percent-silt analysis, SCPM will determine if supplemental gravel in certain areas is required. Graveled surfaces at the existing companies will be monitored and maintained in accordance with the Fugitive Particulate Operating Program included in Attachment H.

- v. *The amount of refrigerants recovered and recycled or disposed offsite within the last three years.*

SCPM Response

The amount of refrigerants recovered and recycled or disposed of offsite is included in Attachment I.

- vi. *The make, model, and USEPA engine rating (Tier) of all non-road vehicles and equipment kept or used at each business, including their ownership or lease status.*

SCPM Response

The make and model of non-road vehicles and equipment currently used at the existing companies is included in Attachment J.

- vii. *An operations and maintenance plan that describes procedures and protocols in the handling, management, and storage of universal waste.*

SCPM Response

Procedures for handling Universal Waste at the existing companies is included in Attachment K.

viii. *An emergency response plan and a fire-prevention plan.*

SCPM Response

An emergency response plan and a fire-prevention plan for the existing companies on the Campus Property are included in Attachment L.

ix. *A copy of the vector control contract.*

SCPM Response

Copies of the vector control contracts for the existing companies on the Campus Property are included in Attachment M.

x. *A copy of all City of Chicago business licenses and hazmat licenses.*

SCPM Response

Copies of City of Chicago Licenses are included in Attachment N.

xi. *A copy of all MWRD discharge permits.*

SCPM Response

Not applicable since none of the existing companies discharge to the MWRD system.

CDPH Request

3. *CDPH requests the following additional information:*

- a. *Please provide a revised SWPPP for the areas of the Campus Property subject to NPDES. The revised SWPPP shall include best management practices (“BMPs”) to prevent material from washing into the water from land at barge areas, and periodic inspection protocols to detect these occurrences, as well as any illicit discharge and deposition of dust and litter on the waterway. The SWPPP shall include a detailed plan for cleaning or remediating spilled or deposited materials and illicit discharges, including seeps and oily sheen that may be found emanating from the Campus Property.*

SCPM Response

A SWPPP for the existing companies on the Campus Property are included in Attachment O.

CDPH Request

- b. *Provide calculations on the estimated capture efficiency of the shredder exhaust capture system, including sizing calculations for all fans, blowers, ducting systems, and hood.*

SCPM Response

Drawings of the shredder cannot be provided due to the fact that the drawings and plans are the property of the shredder manufacturer, Riverside Engineering. Drawings of the shredder enclosure and the emissions capture hood, including capture system specifications (i.e. fan size and duct diameters), are provided in Attachment P. It should be noted that emissions from the shredding process will be collected by the capture hood system. The shredder enclosure is not relied upon to capture emissions. While it is not possible to calculate estimated capture efficiency, the actual efficiency of the shredder exhaust capture system will be determined as part of emission testing to be performed in accordance with the Illinois EPA Construction Permit issued to General III (Southside Recycling). Results from the EPA-approved emission testing and capture efficiency testing will be utilized to verify an overall capture and control efficiency of 81

percent as required by Section 218 of the Illinois Administrative Code. Various other performance specifications for the shredder capture system (i.e. air flow, static pressure, etc.) will also be measured and documented during emission testing. While the IEPA requires an overall capture and control efficiency of at least 81 percent, we expect that the results will be well in excess of 95 percent.

CDPH Request

- c. For the proposed facility, should treatment of the post-processed ASR (“auto fluff”) become necessary or desired, please describe the application process including where the process would be conducted, the stabilizing-chemical name(s) and their application quantities, personal protective equipment (“PPE”) requirements, and copies of all SDSs.*

SCPM Response

Should Southside Recycling decide to inject stabilization material(s) into the nonferrous material process stream, such material(s) would be introduced using a dosing feed hopper equipped with a metering device such as a vibrator feeder. The stabilization material(s) would be introduced at a point in the nonferrous material separation process that would allow for optimal coverage and mixing of the stabilization material(s) with the process material to ensure that the waste generated meets applicable TCLP limits. There are a number of stabilization materials on the market that could potentially be used for the nonferrous material process stream. The quantity of each stabilization material and the required PPE would vary depending on the product that is ultimately selected. A Safety Data Sheet (SDS) for a stabilization material that may be used in the nonferrous material separation process is included in Attachment Q.

CDPH Request

- d. Please provide documentation that the proposed mechanical street sweeper is equipped with a vacuum system designed to pick up fine particulates. If the current mechanical sweeper is not equipped with such a system, please propose an alternate mechanical sweeper that meets the requirements set forth in the Rules.*

SCPM Response

At least one of the mechanical street sweepers utilized at the companies on the Campus Property will be equipped with a vacuum system designed to pick up fine particulates. Specifications for the vacuum street sweeper will be provided to CDPH once a final selection is made.

Facility Plot Map
South Chicago Property Management, Ltd.

KEY:
-Approximate Property Boundary:



Reserve FTL

Southshore Recycling

Regency Technologies

Napuck Salvage of Waupaca

Reserve FTL

Reserve FTL



Shared Equipment

	scale (south)	scales (north)	Fuel Tank (gas)	Fuel Truck	Locomotive
General III, LLC *		x			
South Shore Recycling					
Reserve FTL, LLC		x	x	x	x
Napuck Salvage of Waupaca, LLC	x		x	x	x
RSR partners	x				

NOTES:

Sweeper truck operated by SCPM in Common areas such as parking lots and common access road owned by others

2 water trucks are operated by Reserve FTL for travelled roadways and common access road owned by others

Sweeper on loaders operated by Napuck primarily for Napuck areas

CFC equipment is NOT shared

* - anticipated



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

PAT QUINN, GOVERNOR

JOHN J. KIM, INTERIM DIRECTOR

217-785-1705

REGISTRATION CONFIRMATION

February 6, 2012

Napuck Salvage of Waupaca, LLC
Attn: Dennis V. Stropko
11600 South Burley Avenue
Chicago, Illinois 60617

RE: ROSS PROGRAM
ID #031600GYI
APPLICATION #12020006

Dear Mr. Stropko:

The Illinois EPA hereby acknowledges receipt of your registration and confirms that your source has been registered in the Registration of Smaller Sources (ROSS) Program. The ROSS Program regulations can be found at 35 Ill. Adm. Code 201.175. Although the source is not required to have an air permit during the period it is registered as a ROSS eligible source, please be advised that the source must still comply with all applicable laws and regulations.

If you have changed or intend to change this source in a way that it will no longer be eligible for the ROSS Program, you must notify the Illinois Environmental Protection Agency, Division of Air Pollution Control, Air Permit Section, 1021 N. Grand Avenue East, Springfield, Illinois 62702 in writing as required by 35 Ill. Adm. Code 201.175(g). If you have changed or intend to change this source such that it now or will include activities, equipment or emissions that are not consistent with the eligibility criteria of the ROSS Program, you may be required to obtain construction and/or operating permits from the Air Permit Section as required by 35 Ill. Adm. Code 201.175(g).

As a ROSS participant, the annual payment of your Air Pollution Control Site Fee will verify your source's renewed eligibility for the ROSS Program and maintain your registration.

For further information on the ROSS Program please visit the website at www.ienconnect.com/enviro. If you have any questions concerning this, please contact Lori Pennington at 217/785-1720.

Sincerely,

A handwritten signature in black ink that reads "Edwin C. Bakowski".

Edwin C Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

ECB:LP:psj

cc: Region 1
Permit File



* NEW SOURCE *

Illinois Environmental Protection Agency

Bureau of Air • 1021 North Grand Avenue East • P.O. Box 19506 • Springfield • Illinois • 62794-9506

Registration of Smaller Sources (ROSS)

Category: Initial or New Reentry into ROSS Date Received _____

Agency Use Only

I.D. NO: * _____ PN: * _____

* ID NUMBER AND PERMIT NUMBER (PN) ARE REQUIRED FOR INITIAL REGISTRATION AND REENTRY INTO ROSS FOR PREVIOUSLY PERMITTED SOURCES

Payment Type: Check E-Pay (Electronic) Upon Annual Site Fee Renewal (1st Year Only)

Emission units to be operated: American Pulverizer Hammermill and Ringmill Crushers

Owner

Operator

Name: Napuck Salvage of Waupaca, LLC

Name: Napuck Salvage of Waupaca, LLC

Address: 11600 S. Burley Ave.

Address: 11600 S. Burley Ave.,

City: Chicago

City: Chicago

State: IL Zip Code: 60617

State: IL Zip Code: 60617

Name of corporate division or plant: Napuck Salvage

Street address of emission source: 11600 S. Burley Ave., Chicago, IL

City of emission source: Chciago Located within city limits? Yes No

Township:** _____ County: Cook Zip code: 60617

**ACTUAL NAME OF TOWNSHIP IS REQUIRED

All correspondence to: (Title and/or Name of Individual) Dennis V. Stropko

Correspondence address: Owner Operator Emission Source

Who is the registrant applicant? Owner Operator

Contact person for registration: Dennis V. Stropko

Phone: 440-287-7216 Fax: 440-848-8633

E-mail: dennisstropko@reserve-group.com

Note: Contact person should also be responsible for retaining copies of the registration and any records concerning eligibility.

Billing information :

Company Name: Napuck Salvage of Waupaca, LLC

Address: 11600 S. Burley Ave.,

City: Chicago State: IL Zip Code: 60617

Billing contact person: Jim Schoon Phone: 773-382-0127

Federal Employer Identification Number (FEIN) 01-0583800

Taxpayer Identification Number (TIN) 2368-7932

Primary SIC number: 5093 NAICS code: 423930

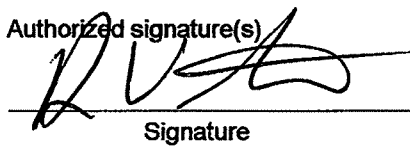
The undersigned certifies by checking this box that the source is in compliance with the applicability of ROSS as stated below:

- Source is not required to obtain a permit pursuant to:
 - The Clean Air Act Permit Program (CAAPP)
 - A Federally Enforceable State Operating Permit (FESOP)
 - Regulations under Section 111, New Source Performance Standards
 - Regulations under Section 112, National Emission Standards for Hazardous Air Pollutants
 - USEPA
- The actual emissions from emission unit(s) not exempt pursuant to 35 ILL. Adm. Code 201.146 at this location (source) are:
 - Less than 5 tons per year (TPY) of combined particulate matter (PM), carbon monoxide (CO), nitrogen oxides (NOX), sulfur dioxide (SO₂), and volatile organic material (VOM)
 - Less than 0.5 TPY of combined hazardous air pollutants
 - Less than 0.05 TPY mercury air emissions
 - Less than 0.05 TPY of lead air emissions
- The emissions unit(s) or source is not subject to maximum achievable control technology under 40 CFR Part 61 or the National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 unless it is categorized as an area source
- Emission units at the source are not used as thermal desorption systems pursuant to 35 ILL. ADM. Code 728 Table F or as incinerator system(s)
- The source is not subject to local siting review under Section 39.2 of the Act
- The ROSS fee has been paid (for the first year, existing permitted sources may not be required to pay if current on annual site fee; new sources are required to pay upon submittal.)
- The sum of actual emissions from all non-exempt emission units for the prior calendar year are within the above limits. If the source is new or has been operating less than 1 year, projected estimated emissions may be used.

Note that the terms and conditions of existing permits do not apply during the period the source is registered.

The undersigned hereby registers this source and certifies that the statements contained herein are true and correct, and further certifies that all previously submitted information referenced in this registration remains true, correct and current. By affixing his/her signature hereto the undersigned further certifies that he/she is authorized to execute this registration.

Authorized signature(s)



Jan 20, 2012

Signature

Date

Signature

Date

Dennis V. Stropko

Typed or Printed Name of Signer

Typed or Printed Name of Signer

Safety and Environmental Manager

Title of Signer

Title of Signer

The Illinois EPA is authorized to require, and you shall disclose, the information requested on this form pursuant to the Illinois Environmental Protection Act (Act), 415 ILCS 5. This information shall be provided using this form or by alternative means at your discretion. Failure to disclose the requisite information may result in your registration being denied, and/or penalties being imposed as provided for in the Act, 415 ILCS 5/42-45. Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

NAME AND/OR OWNERSHIP CHANGE INFORMATION

Please select one of the following:

- Name Change (different name/Same Owner) - complete SECTION A only
- Ownership Change (different owner/same Source Name) - complete SECTION A, B and C for new ownership change
- Name Change and Ownership BOTH (new Source Name and new Source Owner) - complete SECTION A, B and C for new name and ownership change

SECTION A: GENERAL INFORMATION

Current Date: December 16, 2019 Source ID Number: 031600GYI

Previous Source Name: Napuck Salvage of Waupaca, LLC

Current Source Name: South Chicago Property Management, LTD

Source Address (Street, City, State, Zip Code): 11600 S. Burley Ave., Chicago, IL 60617

Manager
Signature of Authorized Representative (Name changes only)

SECTION B: NEW OWNER INFORMATION

Date of Purchase: _____	New Owner FEIN: _____ (Federal Employer Identification Number)
Addresses: _____	Contact Name: _____
Owner/Operator: _____	Phone Number: _____
_____	Fax Number: _____

Correspondence: _____	Contact Name: _____
_____	Phone Number: _____
_____	Fax Number: _____
Site Fee: _____	Contact Name: _____
_____	Phone Number: _____
_____	Fax Number: _____

It should be noted if the new owner is a corporation, a certified copy of a resolution of the corporation's board of directors authorizing the signature person(s) is required. If the new owner is a sole proprietorship or partnership, a letter from the proprietor or partners authorizing the signature person(s) is required.

Signature of Authorized Representative

Signature of Authorized Representative

SECTION C: PREVIOUS OWNER INFORMATION

Date of Sale: _____

Transfer Permits To: _____

Signature Authorizing Transfer of Permits

Signature Authorizing Transfer of Permits

To complete a request for name and/or ownership change, certain information must be provided to the Illinois EPA, Division of Air Pollution Control, Air Permit Section, 1021 North Grand Avenue East, P. O. Box 19506, Springfield, Illinois 62794-9506. This information may be provided to the Illinois EPA in the form of a written letter or by completing this form. It should be noted that any unpaid site fees for the Source must be paid to date and have a zero balance prior to the transfer of permits.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

217/785-1705

January 14, 2020

JAN 17 REC'D

South Chicago Property Management, LTD
Attn: Dennis V Stropko
11600 S. Burley Ave.
Chicago, IL 60617

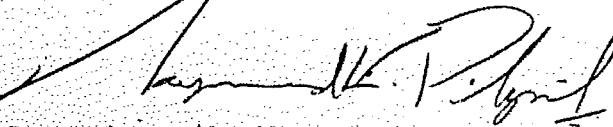
I.D. No.: 031600GYI

Dear Mr. Stropko:

The Illinois EPA acknowledges your request for a name change on the current permit for the facility designated by the reference I.D. No. The Illinois EPA has updated its records accordingly.

The permit application revision you requested is currently pending and is under review. Until any revised permit is issued, the facility remains subject to the requirements in any existing permit(s).

If you have any questions concerning this matter, please contact Trent Nation at 217/524-1651.


Raymond E. Pilapil
Manager, Permit Section
Bureau of Air

REP:tan

SCPM ROSS Emissions Summary 2012 thru 2019

2012 SCPM Actual ROSS Emissions

Calendar Year ROSS Emissions by Pollutant								
SCPM Entity	PM tpy	PM ₁₀ tpy'	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy	Metal HAPS tpy
Reserve Marine Terminals (RMT)	0.044			0.000	0.000	0.009	0.000	0.087
Napuck Salvage of Waupaca, LLC (NSW)	0.027			0.000	0.000	0.000	0.000	
South Shore Recycling, LLC (SRS)	0.000			0.000	0.000	0.000	0.000	
Regency Technologies (RSR)	0.000			0.000	0.000	0.000	0.000	
Total SCPM ROSS Emissions	0.070			0.000	0.000	0.009	0.000	
Combined SCPM Total ROSS Emissions	0.079							

2013 SCPM Actual ROSS Emissions

Calendar Year ROSS Emissions by Pollutant								
SCPM Entity	PM tpy	PM ₁₀ tpy'	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy	Metal HAPS tpy
Reserve Marine Terminals (RMT)	0.052			0.000	0.000	0.009	0.000	0.097
Napuck Salvage of Waupaca, LLC (NSW)	0.027			0.000	0.000	0.000	0.000	
South Shore Recycling, LLC (SRS)	0.000			0.000	0.000	0.000	0.000	
Regency Technologies (RSR)	0.000			0.000	0.000	0.000	0.000	
Total SCPM ROSS Emissions	0.078			0.000	0.000	0.009	0.000	
Combined SCPM Total ROSS Emissions	0.087							

2014 SCPM Actual ROSS Emissions

Calendar Year ROSS Emissions by Pollutant								
SCPM Entity	PM tpy	PM ₁₀ tpy'	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy	Metal HAPS tpy
Reserve Marine Terminals (RMT)	0.052			0.000	0.000	0.009	0.000	0.096
Napuck Salvage of Waupaca, LLC (NSW)	0.007			0.000	0.000	0.000	0.000	
South Shore Recycling, LLC (SRS)	0.000			0.000	0.000	0.000	0.000	
Regency Technologies (RSR)	0.000			0.000	0.000	0.000	0.000	
Total SCPM ROSS Emissions	0.059			0.000	0.000	0.009	0.000	
Combined SCPM Total ROSS Emissions	0.068							

2015 SCPM Actual ROSS Emissions

Calendar Year ROSS Emissions by Pollutant								
SCPM Entity	PM tpy	PM ₁₀ tpy'	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy	Metal HAPS tpy
Reserve Marine Terminals (RMT)	0.040			0.000	0.000	0.009	0.000	0.086
Napuck Salvage of Waupaca, LLC (NSW)	0.020			0.000	0.000	0.000	0.000	
South Shore Recycling, LLC (SRS)	0.000			0.000	0.000	0.000	0.000	
Regency Technologies (RSR)	0.000			0.000	0.000	0.000	0.000	
Total SCPM ROSS Emissions	0.061			0.000	0.000	0.009	0.000	
Combined SCPM Total ROSS Emissions	0.069							

SCPM ROSS Emissions Summary 2012 thru 2019

2016 SCPM Actual ROSS Emissions

Calendar Year ROSS Emissions by Pollutant								
SCPM Entity	PM tpy	PM ₁₀ tpy'	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy	Metal HAPS tpy
Reserve Marine Terminals (RMT)	0.038			0.000	0.000	0.000	0.000	0.088
Napuck Salvage of Waupaca, LLC (NSW)	0.028			0.000	0.000	0.000	0.000	
South Shore Recycling, LLC (SRS)	0.000			0.000	0.000	0.000	0.000	
Regency Technologies (RSR)	0.000			0.000	0.000	0.000	0.000	
Total SCPM ROSS Emissions	0.067			0.000	0.000	0.000	0.000	
Combined SCPM Total ROSS Emissions	0.067							

2017 SCPM Actual ROSS Emissions

Calendar Year ROSS Emissions by Pollutant								
SCPM Entity	PM tpy	PM ₁₀ tpy'	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy	Metal HAPS tpy
Reserve Marine Terminals (RMT)	0.046			0.000	0.000	0.000	0.000	0.103
Napuck Salvage of Waupaca, LLC (NSW)	0.038			0.000	0.000	0.000	0.000	
South Shore Recycling, LLC (SRS)	0.000			0.000	0.000	0.000	0.000	
Regency Technologies (RSR)	0.000			0.000	0.000	0.000	0.000	
Total SCPM ROSS Emissions	0.084			0.000	0.000	0.000	0.000	
Combined SCPM Total ROSS Emissions	0.084							

2018 SCPM Actual ROSS Emissions

Calendar Year ROSS Emissions by Pollutant								
SCPM Entity	PM tpy	PM ₁₀ tpy'	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy	Metal HAPS tpy
Reserve Marine Terminals (RMT)	0.046			0.000	0.000	0.000	0.000	0.104
Napuck Salvage of Waupaca, LLC (NSW)	0.050			0.000	0.000	0.000	0.000	
South Shore Recycling, LLC (SRS)	0.000			0.000	0.000	0.000	0.000	
Regency Technologies (RSR)	0.000			0.000	0.000	0.000	0.000	
Total SCPM ROSS Emissions	0.095			0.000	0.000	0.000	0.000	
Combined SCPM Total ROSS Emissions	0.095							

2019 SCPM Actual ROSS Emissions

Calendar Year ROSS Emissions by Pollutant								
SCPM Entity	PM tpy	PM ₁₀ tpy'	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy	Metal HAPS tpy
Reserve Marine Terminals (RMT)	0.422			0.000	0.000	0.000	0.000	0.093
Napuck Salvage of Waupaca, LLC (NSW)	0.051			0.000	0.000	0.000	0.000	
South Shore Recycling, LLC (SRS)	0.000			0.000	0.000	0.000	0.000	
Regency Technologies (RSR)	0.000			0.000	0.000	0.000	0.000	
Total SCPM ROSS Emissions	0.474			0.000	0.000	0.000	0.000	
Combined SCPM Total ROSS Emissions	0.474							

Summary of RMT ROSS Emissions 2012 thru 2019

RMT Process Emission Factors

ROSS Y/N	Emission Unit or Activity	Specific Activity	Units	PM	PM ₁₀	PM _{2.5}	CO	NO _x	VOC	SO ₂
Y	Shredding and Screening	Sand Screening	lb/ton ¹	0.047070	0.016909					
Y	Material Drops (inside)	Outbound Rail Car Loading	lb/ton ²	0.000408	0.000193	0.000029				
Y		Outbound Truck Loading	lb/ton ³	0.000408	0.000193	0.000029				
Y		Iron & Steel 6" plus	lb/ton ⁴	0.000033	0.000016					
Y		Screening system feed mat'l	lb/ton ⁵	0.000033	0.000016					
N	Internal Combustion Engines	No. 2 Fuel Oil	lb/HP-hr ⁶	0.00066	0.00066	0.00066	0.00816	0.01200	0.00247	0.00205
N		Gasoline	lb/HP-hr ⁷	0.00072	0.00072	0.00072	0.00696	0.01100	0.02050	0.00059
N	Torch Cutting	Propane Combustion	lb/MMcf ⁸	7.6	7.6	7.6	40	94	5.5	0.6
N		PM from cutting	lb/ton ⁹	0.0320	0.0320	0.0320				
N	Paved Roads (Controlled)	Sand Screening	lb/ton ¹⁰	0.0445	0.0089	0.0022				
N	Unpaved Road (Controlled)	Material Handling	lb/ton ¹¹	0.1301	0.0347	0.0035				
Y	Fuel ASTs	500-gal gasoline AST	lb/gal ¹²						0.00580	
N		1,000-gallon diesel AST	lb/gal ¹³						0.00002	

1. AP 42, Chapter 11.19.2, Table 11.19.2-2 - emission factors for crushed stone processing were assigned to each emission point in the process. Emission factors calculated by dividing the total maximum total hourly emissions by the maximum material throughput.
2. AP42, Chapter 13.2.4.3 - emission factors calculate using material drop equation with windspeed of 2 mph and a moisture content of 3%.
3. AP42, Chapter 13.2.4.3 - emission factors calculate using material drop equation with windspeed of 2 mph and a moisture content of 3%.
4. AP 42, Chapter 11.19.2, Table 11.19.2-2 - emission factors for crushed stone processing - truck dumping.
5. AP 42, Chapter 11.19.2, Table 11.19.2-2 - emission factors for crushed stone processing were assigned to each emission point in the process. Emission factors calculated by dividing the total maximum total hourly emissions by the maximum material throughput.
6. EPA Tier 2 Standard Non-Road Compression-Ignition Diesel Engine Emission Factors for PM10, NOx, and CO. AP42, Chapter 3.3, Table 3.3.1 diesel emission factors for SOx and VOC.
7. AP42, Chapter 3.3, Table 3.3-1 gasoline emission factors.
8. AP42, Chapter 1.4, Table 1.4-2 - external combustion emission factors for propane.
9. AP42, Chapter 12.5, Table 12.5.1-1 iron and steel production emission factors for natural gas fired billet cutting torches.
10. AP42, Chapter 13.2.1 - calculations for fugitive emissions from paved roads. PM emission factors were calculated by dividing the total daily PM emissions by the number of tons of material transported per day .
11. AP42, Chapter 13.2.1 - calculations for fugitive emissions from paved roads. PM emission factors were calculated by dividing the total daily PM emissions by the number of tons of material transported per day .
12. AP42, Chapter 13.2.2 - calculations for fugitive emissions from unpaved roads. PM emission factors were calculated by dividing the total daily PM emissions by the number of tons of material transported per day .
13. Gasoline AST emissions calculated using IEPA on-line calculator.

Summary of RMT ROSS Emissions 2012 thru 2019

2012 RMT Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	Sand Screening	0 tons	0.0000	0.0000					
Y	Material Drops (inside)	Outbound Rail Car Loading	39,816 tons	0.0081	0.0038	0.0006				
Y		Outbound Truck Loading	159,263 tons	0.0325	0.0154	0.0023				
Y		Iron & Steel 6" plus	199,079 tons	0.0033	0.0016					
Y		Screening system feed mat'l	0 tons	0.0000	0.0000					
N	Internal Combustion Engines	No. 2 Fuel Oil	0 HP-Hrs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N		Gasoline	4,160 HP-Hrs	0.0015	0.0015	0.0015	0.0145	0.0229	0.0426	0.0012
N	Torch Cutting	Propane Combustion	0.13 MMcf	0.0005	0.0005	0.0005	0.0026	0.0060	0.0004	0.0000
N		PM from cutting	22,614 tons	0.3618	0.3618	0.3618				
N	Paved Roads (Controlled)	Sand Screening	0 tons	0.0000	0.0000	0.0000				
N	Unpaved Road (Controlled)	Material Handling	199,079 tons	12.9516	3.4518	0.3455				
Y	Fuel ASTs	500-gal gasoline AST	3,000 gal						0.0087	
N		1,000-gallon diesel AST	24,000 gal						0.0002	
Total Emissions				13.36	3.84	0.71	0.02	0.03	0.05	0.00

Total Ross Emissions by Pollutant	tons	0.044			0.000	0.000	0.009	0.000
Combined Total ROSS Emissions	tons	0.053						

2013 RMT Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	Sand Screening	0 tons	0.0000	0.0000					
Y	Material Drops (inside)	Outbound Rail Car Loading	46,763 tons	0.0095	0.0045	0.0007				
Y		Outbound Truck Loading	187,052 tons	0.0381	0.0180	0.0027				
Y		Iron & Steel 6" plus	233,816 tons	0.0039	0.0019					
Y		Screening system feed mat'l	0 tons	0.0000	0.0000					
N	Internal Combustion Engines	No. 2 Fuel Oil	0 HP-Hrs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N		Gasoline	4,160 HP-Hrs	0.0015	0.0015	0.0015	0.0145	0.0229	0.0426	0.0012
N	Torch Cutting	Propane Combustion	0.13 MMcf	0.0005	0.0005	0.0005	0.0026	0.0060	0.0004	0.0000
N		PM from cutting	15,600 tons	0.2496	0.2496	0.2496				
N	Paved Roads (Controlled)	Sand Screening	0 tons	0.0000	0.0000	0.0000				
N	Unpaved Road (Controlled)	Material Handling	233,816 tons	15.2116	4.0541	0.4057				
Y	Fuel ASTs	500-gal gasoline AST	3,000 gal						0.0087	
N		1,000-gallon diesel AST	24,000 gal						0.0002	
Total Emissions				15.51	4.33	0.66	0.02	0.03	0.05	0.00

Total Ross Emissions by Pollutant	tons	0.052			0.000	0.000	0.009	0.000
Combined Total ROSS Emissions	tons	0.060						

Summary of RMT ROSS Emissions 2012 thru 2019

2014 RMT Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	Sand Screening	0 tons	0.0000	0.0000					
Y	Material Drops (inside)	Outbound Rail Car Loading	47,153 tons	0.0096	0.0045	0.0007				
Y		Outbound Truck Loading	188,611 tons	0.0385	0.0182	0.0028				
Y		Iron & Steel 6" plus	235,764 tons	0.0039	0.0019					
Y		Screening system feed mat'l	0 tons	0.0000	0.0000					
N		Internal Combustion Engines	No. 2 Fuel Oil	0 HP-Hrs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N		Gasoline	4,160 HP-Hrs	0.0015	0.0015	0.0015	0.0145	0.0229	0.0426	0.0012
N	Torch Cutting	Propane Combustion	0.13 MMcf	0.0005	0.0005	0.0005	0.0026	0.0060	0.0004	0.0000
N		PM from cutting	19,186 tons	0.3070	0.3070	0.3070				
N	Paved Roads (Controlled)	Sand Screening	0 tons	0.0000	0.0000	0.0000				
N	Unpaved Road (Controlled)	Material Handling	235,764 tons	15.3383	4.0879	0.4091				
Y	Fuel ASTs	500-gal gasoline AST	3,000 gal						0.0087	
N		1,000-gallon diesel AST	24,000 gal						0.0002	
Total Emissions				15.70	4.42	0.72	0.02	0.03	0.05	0.00

Total Ross Emissions by Pollutant	tons	0.052			0.000	0.000	0.009	0.000
Combined Total ROSS Emissions	tons	0.061						

2015 RMT Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	Sand Screening	0 tons	0.0000	0.0000					
Y	Material Drops (inside)	Outbound Rail Car Loading	45,834 tons	0.0093	0.0044	0.0007				
Y		Outbound Truck Loading	137,502 tons	0.0280	0.0133	0.0020				
Y		Iron & Steel 6" plus	183,336 tons	0.0030	0.0015					
Y		Screening system feed mat'l	0 tons	0.0000	0.0000					
N		Internal Combustion Engines	No. 2 Fuel Oil	345,612 HP-Hrs	0.1141	0.1141	0.1141	1.4101	2.0737	0.4268
N		Gasoline	6,240 HP-Hrs	0.0022	0.0022	0.0022	0.0217	0.0343	0.0640	0.0018
N	Torch Cutting	Propane Combustion	0.13 MMcf	0.0005	0.0005	0.0005	0.0026	0.0060	0.0004	0.0000
N		PM from cutting	13,545 tons	0.2167	0.2167	0.2167				
N	Paved Roads (Controlled)	Sand Screening	0 tons	0.0000	0.0000	0.0000				
N	Unpaved Road (Controlled)	Material Handling	183,336 tons	11.9274	3.1789	0.3181				
Y	Fuel ASTs	500-gal gasoline AST	3,000 gal						0.0087	
N		1,000-gallon diesel AST	24,000 gal						0.0002	
Total Emissions				12.30	3.53	0.65	1.43	2.11	0.50	0.36

Total Ross Emissions by Pollutant	tons	0.040			0.000	0.000	0.009	0.000
Combined Total ROSS Emissions	tons	0.049						

Summary of RMT ROSS Emissions 2012 thru 2019

2016 RMT Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	Sand Screening	0 tons	0.0000	0.0000					
Y	Material Drops (inside)	Outbound Rail Car Loading	43,340 tons	0.0088	0.0042	0.0006				
Y		Outbound Truck Loading	130,019 tons	0.0265	0.0125	0.0019				
Y		Iron & Steel 6" plus	173,358 tons	0.0029	0.0014					
Y		Screening system feed mat'l	0 tons	0.0000	0.0000					
N	Internal Combustion Engines	No. 2 Fuel Oil	446,832 HP-Hrs	0.1475	0.1475	0.1475	1.8231	2.6810	0.5518	0.4580
N		Gasoline	6,240 HP-Hrs	0.0022	0.0022	0.0022	0.0217	0.0343	0.0640	0.0018
N	Torch Cutting	Propane Combustion	0.13 MMcf	0.0005	0.0005	0.0005	0.0026	0.0060	0.0004	0.0000
N		PM from cutting	17,830 tons	0.2853	0.2853	0.2853				
N	Paved Roads (Controlled)	Sand Screening	0 tons	0.0000	0.0000	0.0000				
N	Unpaved Road (Controlled)	Material Handling	173,358 tons	11.2783	3.0059	0.3008				
N	Fuel ASTs	500-gal gasoline AST	3,000 gal						0.0087	
N		1,000-gallon diesel AST	24,000 gal						0.0002	
Total Emissions				11.75	3.46	0.74	1.85	2.72	0.63	0.46

Total Ross Emissions by Pollutant	tons	0.038			0.000	0.000	0.000	0.000
Combined Total ROSS Emissions	tons	0.038						

2017 RMT Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	Sand Screening	0 tons	0.0000	0.0000					
Y	Material Drops (inside)	Outbound Rail Car Loading	62,477 tons	0.0127	0.0060	0.0009				
Y		Outbound Truck Loading	145,779 tons	0.0297	0.0141	0.0021				
Y		Iron & Steel 6" plus	208,255 tons	0.0034	0.0017					
Y		Screening system feed mat'l	0 tons	0.0000	0.0000					
N	Internal Combustion Engines	No. 2 Fuel Oil	466,752 HP-Hrs	0.1540	0.1540	0.1540	1.9043	2.8005	0.5764	0.4784
N		Gasoline	8,320 HP-Hrs	0.0030	0.0030	0.0030	0.0290	0.0458	0.0853	0.0025
N	Torch Cutting	Propane Combustion	0.13 MMcf	0.0005	0.0005	0.0005	0.0026	0.0060	0.0004	0.0000
N		PM from cutting	23,893 tons	0.3823	0.3823	0.3823				
N	Paved Roads (Controlled)	Sand Screening	0 tons	0.0000	0.0000	0.0000				
N	Unpaved Road (Controlled)	Material Handling	208,255 tons	13.5486	3.6109	0.3614				
N	Fuel ASTs	500-gal gasoline AST	3,000 gal						0.0087	
N		1,000-gallon diesel AST	24,000 gal						0.0002	
Total Emissions				14.13	4.17	0.90	1.94	2.85	0.67	0.48

Total Ross Emissions by Pollutant	tons	0.046			0.000	0.000	0.000	0.000
Combined Total ROSS Emissions	tons	0.046						

Summary of RMT ROSS Emissions 2012 thru 2019

2018 RMT Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NO _x tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	Sand Screening	0 tons	0.0000	0.0000					
Y	Material Drops (inside)	Outbound Rail Car Loading	62,224 tons	0.0127	0.0060	0.0009				
Y		Outbound Truck Loading	145,189 tons	0.0296	0.0140	0.0021				
Y		Iron & Steel 6" plus	207,413 tons	0.0034	0.0017					
Y		Screening system feed mat'l	0 tons	0.0000	0.0000					
N		Internal Combustion Engines	No. 2 Fuel Oil	498,660 HP-Hrs	0.1646	0.1646	0.1646	2.0345	2.9920	0.6158
N		Gasoline	8,320 HP-Hrs	0.0030	0.0030	0.0030	0.0290	0.0458	0.0853	0.0025
N	Torch Cutting	Propane Combustion	0.13 MMcf	0.0005	0.0005	0.0005	0.0026	0.0060	0.0004	0.0000
N		PM from cutting	23,102 tons	0.3696	0.3696	0.3696				
N	Paved Roads (Controlled)	Sand Screening	0 tons	0.0000	0.0000	0.0000				
N	Unpaved Road (Controlled)	Material Handling	207,413 tons	13.4938	3.5963	0.3599				
N	Fuel ASTs	500-gal gasoline AST	3,000 gal						0.0087	
N		1,000-gallon diesel AST	24,000 gal						0.0002	
Total Emissions				14.08	4.16	0.90	2.07	3.04	0.71	0.51

Total Ross Emissions by Pollutant	tons	0.046			0.000	0.000	0.000	0.000
Combined Total ROSS Emissions	tons	0.046						

2019 RMT Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NO _x tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	Sand Screening	16,105 tons	0.3790	0.1362					
Y	Material Drops (inside)	Outbound Rail Car Loading	58,087 tons	0.0118	0.0056	0.0008				
Y		Outbound Truck Loading	138,220 tons	0.0282	0.0133	0.0020				
Y		Iron & Steel 6" plus	180,202 tons	0.0030	0.0014					
Y		Screening system feed mat'l	16,105 tons	0.0003	0.0001					
N		Internal Combustion Engines	No. 2 Fuel Oil	621,108 HP-Hrs	0.2050	0.2050	0.2050	2.5341	3.7266	0.7671
N		Gasoline	8,320 HP-Hrs	0.0030	0.0030	0.0030	0.0290	0.0458	0.0853	0.0025
N	Torch Cutting	Propane Combustion	0.13 MMcf	0.0005	0.0005	0.0005	0.0026	0.0060	0.0004	0.0000
N		PM from cutting	16,509 tons	0.2641	0.2641	0.2641				
N	Paved Roads (Controlled)	Sand Screening	16,105 tons	0.3586	0.0717	0.0176				
N	Unpaved Road (Controlled)	Material Handling	180,202 tons	11.7235	3.1245	0.3127				
N	Fuel ASTs	500-gal gasoline AST	3,000 gal						0.0087	
N		1,000-gallon diesel AST	24,000 gal						0.0002	
Total Emissions				12.98	3.83	0.81	2.57	3.78	0.86	0.64

Total Ross Emissions by Pollutant	tons	0.422			0.000	0.000	0.000	0.000
Combined Total ROSS Emissions	tons	0.422						

Summary of NSW ROSS Emissions 2012 thru 2019

NSW Process Emission Factors

ROSS Y/N	Emission Unit or Activity	Specific Activity	Units	PM	PM ₁₀	PM _{2.5}	CO	NOx	VOC	SO ₂
Y	Shredding and Screening	AP and Slow-Speed Crusher	lb/ton ¹	0.003500	0.001350					
Y		Mini-Crusher	lb/ton ²	0.045000	0.017000					
N	Material Transfer	Truck Loading/Unloading	lb/ton ³	0.000033	0.000016					
N	Paved Roads (Controlled)	Material Handling	lb/ton ⁴	0.037000	0.007370	0.0018				
N	AL Dryer Propane Combustion	Propane Burner	lb/hr ⁵	0.045900	0.045900	0.0459	0.4920	0.8525	0.0656	0.0035

1. AP 42, Chapter 11.19.2, Table 11.19.2-2 - emission factors for crushed stone processing were assigned to each emission point in the process. Emission factors calculated by dividing the total maximum total hourly emissions by the maximum material throughput.
2. AP 42, Chapter 11.19.2, Table 11.19.2-2 - emission factors for crushed stone processing were assigned to each emission point in the process. Emission factors calculated by dividing the total maximum total hourly emissions by the maximum material throughput.
3. AP42, Chapter 13.2.4.3 - emission factors calculate using material drop equation with windspeed of 2 mph and a moisture content of 3%.
4. AP42, Chapter 13.2.1 - calculations for fugitive emissions from paved roads. PM emission factors were calculated by dividing the total daily PM emissions by the number of tons of material transported per day .
5. AP42, Chapter 1.4, Table 1.4-2 - external combustion emission factors for propane.

Summary of NSW ROSS Emissions 2012 thru 2019

2012 NSW Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	AP and Slow-Speed Crusher	14,547 tons	0.02546	0.00982					
Y		Mini-Crusher	0 tons	0.00000	0.00000					
Y	Material Transfer	Truck Loading/Unloading	64,207 tons	0.00106	0.00051					
N	Paved Roads (Controlled)	Material Handling	64,207 tons	1.18783	0.23660	0.05811				
N	AL Dryer Propane Combustion	Propane Burner	1,029 hours	0.02361	0.02361	0.02361	0.25304	0.43844	0.03372	0.00182
Total Emissions				1.24	0.27	0.08	0.25	0.44	0.03	0.00

Total Ross Emissions by Pollutant	tons	0.02652			0.00000	0.00000	0.00000	0.00000	
Combined Total ROSS Emissions	tons	0.02652							

2013 NSW Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	AP and Slow-Speed Crusher	14,563 tons	0.02549	0.00983					
Y		Mini-Crusher	0 tons	0.00000	0.00000					
Y	Material Transfer	Truck Loading/Unloading	63,218 tons	0.00104	0.00051					
N	Paved Roads (Controlled)	Material Handling	63,218 tons	1.16953	0.23296	0.05721				
N	AL Dryer Propane Combustion	Propane Burner	1,266 hours	0.02904	0.02904	0.02904	0.31131	0.53942	0.04149	0.00224
Total Emissions				1.23	0.27	0.09	0.31	0.54	0.04	0.00

Total Ross Emissions by Pollutant	tons	0.0265			0.0000	0.0000	0.0000	0.0000	
Combined Total ROSS Emissions	tons	0.0265							

2014 NSW Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	AP and Slow-Speed Crusher	3,449 tons	0.00604	0.00233					
Y		Mini-Crusher	0 tons	0.00000	0.00000					
Y	Material Transfer	Truck Loading/Unloading	60,233 tons	0.00099	0.00048					
N	Paved Roads (Controlled)	Material Handling	60,233 tons	1.11431	0.22196	0.05451				
N	AL Dryer Propane Combustion	Propane Burner	1,580 hours	0.03626	0.03626	0.03626	0.38868	0.67348	0.05180	0.00280
Total Emissions				1.16	0.26	0.09	0.39	0.67	0.05	0.00

Total Ross Emissions by Pollutant	tons	0.0070			0.0000	0.0000	0.0000	0.0000	
Combined Total ROSS Emissions	tons	0.0070							

Summary of NSW ROSS Emissions 2012 thru 2019

2015 NSW Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	AP and Slow-Speed Crusher	11,530 tons	0.02018	0.00778					
Y		Mini-Crusher	0 tons	0.00000	0.00000					
N	Material Transfer	Truck Loading/Unloading	60,082 tons	0.00099	0.00048					
N	Paved Roads (Controlled)	Material Handling	60,082 tons	1.11152	0.22140	0.05437				
N	AL Dryer Propane Combustion	Propane Burner	1,462 hours	0.03355	0.03355	0.03355	0.35963	0.62313	0.04793	0.00259
Total Emissions				1.17	0.26	0.09	0.36	0.62	0.05	0.00

Total Ross Emissions by Pollutant	tons	0.0202			0.0000	0.0000	0.0000	0.0000	
Combined Total ROSS Emissions	tons	0.0202							

2016 NSW Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	AP and Slow-Speed Crusher	15,664 tons	0.02741	0.01057					
Y		Mini-Crusher	0 tons	0.00000	0.00000					
Y	Material Transfer	Truck Loading/Unloading	60,601 tons	0.00100	0.00048					
N	Paved Roads (Controlled)	Material Handling	60,601 tons	1.12112	0.22331	0.05484				
N	AL Dryer Propane Combustion	Propane Burner	728 hours	0.01671	0.01671	0.01671	0.17914	0.31040	0.02387	0.00129
Total Emissions				1.17	0.25	0.07	0.18	0.31	0.02	0.00

Total Ross Emissions by Pollutant	tons	0.0284			0.0000	0.0000	0.0000	0.0000	
Combined Total ROSS Emissions	tons	0.0284							

2017 NSW Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	AP and Slow-Speed Crusher	19,359 tons	0.03388	0.01307					
Y		Mini-Crusher	136 tons	0.00306	0.00116					
Y	Material Transfer	Truck Loading/Unloading	63,036 tons	0.00104	0.00050					
N	Paved Roads (Controlled)	Material Handling	63,036 tons	1.16617	0.23229	0.05705				
N	AL Dryer Propane Combustion	Propane Burner	1,075 hours	0.02468	0.02468	0.02468	0.26452	0.45835	0.03525	0.00190
Total Emissions				1.23	0.27	0.08	0.26	0.46	0.04	0.00

Total Ross Emissions by Pollutant	tons	0.0380			0.0000	0.0000	0.0000	0.0000	
Combined Total ROSS Emissions	tons	0.0380							

Summary of NSW ROSS Emissions 2012 thru 2019

2018 NSW Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	AP and Slow-Speed Crusher	24,814 tons	0.0434	0.0167					
Y		Mini-Crusher	231 tons	0.0052	0.0020					
Y	Material Transfer	Truck Loading/Unloading	67,679 tons	0.0011	0.0005					
N	Paved Roads (Controlled)	Material Handling	67,679 tons	1.2521	0.2494	0.0612				
N	AL Dryer Propane Combustion	Propane Burner	1,471 hours	0.0338	0.0338	0.0338	0.3619	0.6271	0.0482	0.0026
Total Emissions				1.34	0.30	0.10	0.36	0.63	0.05	0.00

Total Ross Emissions by Pollutant	tons	0.0497			0.0000	0.0000	0.0000	0.0000	
Combined Total ROSS Emissions	tons	0.0497							

2019 NSW Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
Y	Shredding and Screening	AP and Slow-Speed Crusher	23,702 tons	0.0415	0.0160					
Y		Mini-Crusher	390 tons	0.0088	0.0033					
Y	Material Transfer	Truck Loading/Unloading	62,319 tons	0.0010	0.0005					
N	Paved Roads (Controlled)	Material Handling	62,319 tons	1.1529	0.2296	0.0564				
N	AL Dryer Propane Combustion	Propane Burner	1,135 hours	0.0260	0.0260	0.0260	0.2792	0.4837	0.0372	0.0020
Total Emissions				1.23	0.28	0.08	0.28	0.48	0.04	0.00

Total Ross Emissions by Pollutant	tons	0.0513			0.0000	0.0000	0.0000	0.0000	
Combined Total ROSS Emissions	tons	0.0513							

Summary of SSR ROSS Emissions 2012 thru 2019

SSR Process Emission Factors

ROSS Y/N	Emission Unit or Activity	Specific Activity	Units	PM	PM ₁₀	PM _{2.5}	CO	NO _x	VOC	SO ₂
N	Unpaved Roadways	Material Dropoff	lb/ton ¹	0.25347	0.06757	0.00677				
N	Torch Cutting	Propane Combustion	lb/MMcf ²	7.6	7.6	7.6	40.0	94.0	5.5	0.6
N		PM from Cutting	lb/ton ³	0.032	0.032	0.032				

1. AP42, Chapter 13.2.1 - calculations for fugitive emissions from paved roads. PM emission factors were calculated by dividing the total daily PM emissions by the number of tons of material transported per day .
2. AP42, Chapter 1.4, Table 1.4-2 - external combustion emission factors for propane.
3. AP42, Chapter 12.5, Table 12.5.1-1 iron and steel production emission factors for natural gas fired billet cutting torches.

Summary of SSR ROSS Emissions 2012 thru 2019

2012 SSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
N	Unpaved Roadways	Material Dropoff	7,691 tons	0.9747	0.2598	0.0260				
N	Torch Cutting	Propane Combustion	0.02 MMcf	0.0001	0.0001	0.0001	0.0005	0.0011	0.0001	0.0000
N		PM from Cutting	134 tons	0.0022	0.0022	0.0022				
Total Emissions				0.98	0.26	0.03	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

2013 SSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
N	Unpaved Roadways	Material Dropoff	3,777 tons	0.4787	0.1276	0.0128				
N	Torch Cutting	Propane Combustion	0.02 MMcf	0.0001	0.0001	0.0001	0.0005	0.0011	0.0001	0.0000
N		PM from Cutting	179 tons	0.0029	0.0029	0.0029				
Total Emissions				0.48	0.13	0.02	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

2014 SSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
N	Unpaved Roadways	Material Dropoff	2,227 tons	0.2822	0.0752	0.0075				
N	Torch Cutting	Propane Combustion	0.02 MMcf	0.0001	0.0001	0.0001	0.0005	0.0011	0.0001	0.0000
N		PM from Cutting	202 tons	0.0032	0.0032	0.0032				
Total Emissions				0.29	0.08	0.01	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

Summary of SSR ROSS Emissions 2012 thru 2019

2015 SSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
N	Unpaved Roadways	Material Dropoff	15,258 tons	1.9337	0.5155	0.0516				
N	Torch Cutting	Propane Combustion	0.02 MMcf	0.0001	0.0001	0.0001	0.0005	0.0011	0.0001	0.0000
N		PM from Cutting	224 tons	0.0036	0.0036	0.0036				
Total Emissions				1.94	0.52	0.06	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

2016 SSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
N	Unpaved Roadways	Material Dropoff	22,249 tons	2.8197	0.7517	0.0753				
N	Torch Cutting	Propane Combustion	0.02 MMcf	0.0001	0.0001	0.0001	0.0005	0.0011	0.0001	0.0000
N		PM from Cutting	202 tons	0.0032	0.0032	0.0032				
Total Emissions				2.82	0.75	0.08	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

2017 SSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
N	Unpaved Roadways	Material Dropoff	24,567 tons	3.1135	0.8300	0.0831				
N	Torch Cutting	Propane Combustion	0.02 MMcf	0.0001	0.0001	0.0001	0.0005	0.0011	0.0001	0.0000
N		PM from Cutting	179 tons	0.0029	0.0029	0.0029				
Total Emissions				3.12	0.83	0.09	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

Summary of SSR ROSS Emissions 2012 thru 2019

2018 SSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NO _x tpy	VOC tpy	SO ₂ tpy
N	Unpaved Roadways	Material Dropoff	27,049 tons	3.4281	0.9139	0.0915				
N	Torch Cutting	Propane Combustion	0.02 MMcf	0.0001	0.0001	0.0001	0.0005	0.0011	0.0001	0.0000
N		PM from Cutting	157 tons	0.0025	0.0025	0.0025				
Total Emissions				3.43	0.92	0.09	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00
Combined Total ROSS Emissions	tons				0.00			

2019 SSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NO _x tpy	VOC tpy	SO ₂ tpy
N	Unpaved Roadways	Material Dropoff	20,303 tons	2.5731	0.6859	0.0687				
N	Torch Cutting	Propane Combustion	0.02 MMcf	0.0001	0.0001	0.0001	0.0005	0.0011	0.0001	0.0000
N		PM from Cutting	134 tons	0.0022	0.0022	0.0022				
Total Emissions				2.58	0.69	0.07	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00
Combined Total ROSS Emissions	tons				0.00			

Summary of RSR ROSS Emissions 2012 thru 2019

RSR Process Emission Factors

ROSS Y/N	Emission Unit or Activity	Specific Activity	Units	PM	PM ₁₀	PM _{2.5}	CO	NO _x	VOC	SO ₂
N	Paved Roadways	Material Handling	lb/ton ¹	0.01682	0.00336	0.00083				

1. AP42, Chapter 13.2.1 - calculations for fugitive emissions from paved roads. PM emission factors were calculated by dividing the total daily PM emissions by the number of tons of material transported per day .

Summary of RSR ROSS Emissions 2012 thru 2019

2012 RSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NO _x tpy	VOC tpy	SO ₂ tpy
N	Paved Roadways	Material Handling	13,774 tons	0.12	0.02	0.01				
Total Emissions				0.12	0.02	0.01	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

2013 RSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NO _x tpy	VOC tpy	SO ₂ tpy
N	Paved Roadways	Material Handling	15,800 tons	0.13	0.03	0.01				
Total Emissions				0.13	0.03	0.01	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

2014 RSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NO _x tpy	VOC tpy	SO ₂ tpy
N	Paved Roadways	Material Handling	16,918 tons	0.14	0.03	0.01				
Total Emissions				0.14	0.03	0.01	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

2015 RSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NO _x tpy	VOC tpy	SO ₂ tpy
N	Paved Roadways	Material Handling	18,911 tons	0.16	0.03	0.01				
Total Emissions				0.16	0.03	0.01	0.00	0.00	0.00	0.00

Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined ROSS Emissions	tons	0.00							

Summary of RSR ROSS Emissions 2012 thru 2019

2016 RSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
N	Paved Roadways	Material Handling	17,222 tons	0.14	0.03	0.01				
Total Emissions				0.14	0.03	0.01	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

2017 RSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
N	Paved Roadways	Material Handling	16,207 tons	0.14	0.03	0.01				
Total Emissions				0.14	0.03	0.01	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

2018 RSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
N	Paved Roadways	Material Handling	13,255 tons	0.11	0.02	0.01				
Total Emissions				0.11	0.02	0.01	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

2019 RSR Actual Emissions

ROSS Y/N	Emission Unit or Activity	Specific Activity	Annual Throughput	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	CO tpy	NOx tpy	VOC tpy	SO ₂ tpy
N	Paved Roadways	Material Handling	10,169 tons	0.09	0.02	0.00				
Total Emissions				0.09	0.02	0.00	0.00	0.00	0.00	0.00

Total Ross Emissions by Pollutant	tons	0.00			0.00	0.00	0.00	0.00	
Combined Total ROSS Emissions	tons	0.00							

Summary of SCPM Metals Emissions 2012 thru 2019

2012 SCPM Metals Emissions

Activity/Emission Unit	RMT PM (tpy)	NSW PM (tpy)	SSR PM (tpy)	RSR PM (tpy)	Total (tpy)
Shredding and Screening	0.0000	0.0255			0.0255
Material Drops	0.0439	0.0011			0.0449
Internal Combustion Engines	0.0015				0.0015
AL Dryer Propane Combustion		0.0236			0.0236
Torch Cutting	0.3623		0.0022		0.3646
Paved Roads (Controlled)	0.0000	1.1878		0.1158	1.3037
Unpaved Roads (Controlled)	12.9516		0.9747		13.9264
Totals PM Included in Metal Emission Estimates	13.36	1.24	0.98	0.12	15.69

Total PM Emissions (tpy) Used to Estimate Corresponding Metal Emissions	RMT Screening	NSW Screening	SCPM Paved Roads + Torch Cutting	SCPM Unpaved Roads and Material Drops	Totals
	0.0000	0.0265	1.6682	13.9702	15.6650

HAP (Y/N)	Metal	(tpy)	(tpy)	(tpy)	(tpy)	SCPM Totals	
						(tpy)	lb/yr
Y	Antimony	0.00E+00	6.60E-07	1.99E-06	1.73E-05	0.0000	0.04
Y	Arsenic	0.00E+00	3.10E-08	1.99E-06	1.73E-05	0.0000	0.04
Y	Beryllium	0.00E+00	3.10E-09	1.99E-06	1.73E-05	0.0000	0.04
Y	Cadmium	0.00E+00	4.06E-07	1.21E-06	1.17E-05	0.0000	0.03
Y	Chromium	0.00E+00	2.81E-06	5.77E-04	4.23E-03	0.0048	9.63
Y	Cobalt	0.00E+00	3.08E-06	4.57E-06	2.99E-05	0.0000	0.08
Y	Lead	0.00E+00	1.58E-05	8.44E-05	1.01E-03	0.0011	2.21
Y	Manganese	0.00E+00	1.65E-05	7.94E-03	7.04E-02	0.0784	156.73
Y	Mercury	0.00E+00	2.52E-09	1.58E-07	1.45E-06	0.0000	0.00
Y	Nickel	0.00E+00	2.68E-06	4.25E-05	2.82E-04	0.0003	0.65
Y	Phosphorus	0.00E+00	4.08E-05	6.69E-05	2.57E-03	0.0027	5.36
Y	Selenium	0.00E+00	3.10E-08	1.99E-06	1.73E-05	0.0000	0.04
N	Barium	0.00E+00	8.51E-06	9.54E-05	7.21E-04	0.0008	1.65
N	Copper	0.00E+00	4.67E-05	1.59E-04	1.01E-03	0.0012	2.43
N	Silver	0.00E+00	9.94E-08	1.99E-06	1.73E-05	0.0000	0.04
N	Titanium	0.00E+00	1.85E-05	4.27E-04	2.32E-03	0.0028	5.53
N	Zinc	0.00E+00	9.44E-05	4.15E-04	2.49E-03	0.0030	5.99

Total Metal HAPs	0.0874	174.84
-------------------------	---------------	---------------

Summary of SCPM Metals Emissions 2012 thru 2019

2013 SCPM Metals Emissions

Activity/Emission Unit	RMT PM (tpy)	NSW PM (tpy)	SSR PM (tpy)	RSR PM (tpy)	Total (tpy)
Shredding and Screening	0.0000	0.0255			0.0255
Material Drops	0.0515	0.0010			0.0526
Internal Combustion Engines	0.0015				0.0015
AL Dryer Propane Combustion		0.0290			0.0290
Torch Cutting	0.2501		0.0001		0.2502
Paved Roads (Controlled)	0.0000	1.1695		0.1329	1.3024
Unpaved Roads (Controlled)	15.2116		0.4787		15.6902
Totals PM Included in Metal Emission Estimates	15.51	1.23	0.48	0.13	17.35

Total PM Emissions (tpy) Used to Estimate Corresponding Metal Emissions	RMT Screening	NSW Screening	SCPM Paved Roads + Torch Cutting	SCPM Unpaved Roads and Material Drops	Totals
	0.0000	0.0265	1.5526	15.7418	17.3209

HAP (Y/N)	Metal	(tpy)	(tpy)	(tpy)	(tpy)	SCPM Totals	
						(tpy)	lb/yr
Y	Antimony	0.00E+00	6.61E-07	1.85E-06	1.95E-05	0.0000	0.04
Y	Arsenic	0.00E+00	3.10E-08	1.85E-06	1.95E-05	0.0000	0.04
Y	Beryllium	0.00E+00	3.10E-09	1.85E-06	1.95E-05	0.0000	0.04
Y	Cadmium	0.00E+00	4.06E-07	1.12E-06	1.31E-05	0.0000	0.03
Y	Chromium	0.00E+00	2.81E-06	5.37E-04	4.77E-03	0.0053	10.62
Y	Cobalt	0.00E+00	3.08E-06	4.25E-06	3.37E-05	0.0000	0.08
Y	Lead	0.00E+00	1.58E-05	8.44E-05	1.01E-03	0.0011	2.21
Y	Manganese	0.00E+00	1.66E-05	7.39E-03	7.93E-02	0.0867	173.49
Y	Mercury	0.00E+00	2.52E-09	1.47E-07	1.64E-06	0.0000	0.00
Y	Nickel	0.00E+00	2.68E-06	3.96E-05	3.18E-04	0.0004	0.72
Y	Phosphorus	0.00E+00	4.09E-05	6.23E-05	2.90E-03	0.0030	6.00
Y	Selenium	0.00E+00	3.10E-08	1.85E-06	1.95E-05	0.0000	0.04
N	Barium	0.00E+00	8.52E-06	8.88E-05	8.12E-04	0.0009	1.82
N	Copper	0.00E+00	4.67E-05	1.48E-04	1.14E-03	0.0013	2.67
N	Silver	0.00E+00	9.95E-08	1.85E-06	1.95E-05	0.0000	0.04
N	Titanium	0.00E+00	1.85E-05	3.97E-04	2.61E-03	0.0030	6.06
N	Zinc	0.00E+00	9.44E-05	3.87E-04	2.80E-03	0.0033	6.57

Total Metal HAPs	0.0967	193.33
-------------------------	---------------	---------------

Summary of SCPM Metals Emissions 2012 thru 2019

2014 SCPM Metals Emissions

Activity/Emission Unit	RMT PM (tpy)	NSW PM (tpy)	SSR PM (tpy)	RSR PM (tpy)	Total (tpy)
Shredding and Screening	0.0000	0.0060			0.0060
Material Drops	0.0520	0.0010			0.0530
Internal Combustion Engines	0.0015				0.0015
AL Dryer Propane Combustion		0.0363			0.0363
Torch Cutting	0.3075		0.0033		0.3108
Paved Roads (Controlled)	0.0000	1.1143		0.1423	1.2566
Unpaved Roads (Controlled)	15.3383		0.2822		15.6205
Totals PM Included in Metal Emission Estimates	15.70	1.16	0.29	0.14	17.28

Total PM Emissions (tpy) Used to Estimate Corresponding Metal Emissions	RMT Screening	NSW Screening	SCPM Paved Roads + Torch Cutting	SCPM Unpaved Roads and Material Drops	Totals
	0.0000	0.0070	1.5674	15.6725	17.2469

HAP (Y/N)	Metal	(tpy)	(tpy)	(tpy)	(tpy)	SCPM Totals	
						(tpy)	lb/yr
Y	Antimony	0.00E+00	1.75E-07	1.87E-06	1.94E-05	0.0000	0.04
Y	Arsenic	0.00E+00	8.22E-09	1.87E-06	1.94E-05	0.0000	0.04
Y	Beryllium	0.00E+00	8.22E-10	1.87E-06	1.94E-05	0.0000	0.04
Y	Cadmium	0.00E+00	1.08E-07	1.13E-06	1.31E-05	0.0000	0.03
Y	Chromium	0.00E+00	7.45E-07	5.42E-04	4.75E-03	0.0053	10.58
Y	Cobalt	0.00E+00	8.15E-07	4.29E-06	3.35E-05	0.0000	0.08
Y	Lead	0.00E+00	1.58E-05	8.44E-05	1.01E-03	0.0011	2.21
Y	Manganese	0.00E+00	4.39E-06	7.46E-03	7.90E-02	0.0865	172.91
Y	Mercury	0.00E+00	6.68E-10	1.49E-07	1.63E-06	0.0000	0.00
Y	Nickel	0.00E+00	7.10E-07	4.00E-05	3.17E-04	0.0004	0.71
Y	Phosphorus	0.00E+00	1.08E-05	6.29E-05	2.88E-03	0.0030	5.91
Y	Selenium	0.00E+00	8.22E-09	1.87E-06	1.94E-05	0.0000	0.04
N	Barium	0.00E+00	2.26E-06	8.97E-05	8.09E-04	0.0009	1.80
N	Copper	0.00E+00	1.24E-05	1.49E-04	1.13E-03	0.0013	2.59
N	Silver	0.00E+00	2.64E-08	1.87E-06	1.94E-05	0.0000	0.04
N	Titanium	0.00E+00	4.91E-06	4.01E-04	2.60E-03	0.0030	6.02
N	Zinc	0.00E+00	2.50E-05	3.90E-04	2.79E-03	0.0032	6.41

Total Metal HAPs	0.0963	192.61
-------------------------	---------------	---------------

Summary of SCPM Metals Emissions 2012 thru 2019

2015 SCPM Metals Emissions

Activity/Emission Unit	RMT PM (tpy)	NSW PM (tpy)	SSR PM (tpy)	RSR PM (tpy)	Total (tpy)
Shredding and Screening	0.0000	0.0202			0.0202
Material Drops	0.0404	0.0010			0.0414
Internal Combustion Engines	0.1163				0.1163
AL Dryer Propane Combustion		0.0336			0.0336
Torch Cutting	0.2172		0.0037		0.2209
Paved Roads (Controlled)	0.0000	1.1115		0.1590	1.2706
Unpaved Roads (Controlled)	11.9274		1.9337		13.8612
Totals PM Included in Metal Emission Estimates	12.30	1.17	1.94	0.16	15.56

Total PM Emissions (tpy) Used to Estimate Corresponding Metal Emissions	RMT Screening	NSW Screening	SCPM Paved Roads + Torch Cutting	SCPM Unpaved Roads and Material Drops	Totals
	0.0000	0.0212	1.4914	13.9016	15.4142

HAP (Y/N)	Metal	(tpy)	(tpy)	(tpy)	(tpy)	SCPM Totals	
						(tpy)	lb/yr
Y	Antimony	0.00E+00	5.27E-07	1.77E-06	1.72E-05	0.0000	0.04
Y	Arsenic	0.00E+00	2.48E-08	1.77E-06	1.72E-05	0.0000	0.04
Y	Beryllium	0.00E+00	2.48E-09	1.77E-06	1.72E-05	0.0000	0.04
Y	Cadmium	0.00E+00	3.24E-07	1.08E-06	1.16E-05	0.0000	0.03
Y	Chromium	0.00E+00	2.24E-06	5.16E-04	4.21E-03	0.0047	9.46
Y	Cobalt	0.00E+00	2.46E-06	4.09E-06	2.97E-05	0.0000	0.07
Y	Lead	0.00E+00	1.58E-05	8.44E-05	1.01E-03	0.0011	2.21
Y	Manganese	0.00E+00	1.32E-05	7.10E-03	7.01E-02	0.0772	154.35
Y	Mercury	0.00E+00	2.01E-09	1.42E-07	1.45E-06	0.0000	0.00
Y	Nickel	0.00E+00	2.14E-06	3.80E-05	2.81E-04	0.0003	0.64
Y	Phosphorus	0.00E+00	3.26E-05	5.98E-05	2.56E-03	0.0027	5.30
Y	Selenium	0.00E+00	2.48E-08	1.77E-06	1.72E-05	0.0000	0.04
N	Barium	0.00E+00	6.80E-06	8.53E-05	7.17E-04	0.0008	1.62
N	Copper	0.00E+00	3.73E-05	1.42E-04	1.01E-03	0.0012	2.37
N	Silver	0.00E+00	7.94E-08	1.77E-06	1.72E-05	0.0000	0.04
N	Titanium	0.00E+00	1.48E-05	3.82E-04	2.31E-03	0.0027	5.41
N	Zinc	0.00E+00	7.54E-05	3.71E-04	2.47E-03	0.0029	5.84

Total Metal HAPs	0.0861	172.22
-------------------------	---------------	---------------

Summary of SCPM Metals Emissions 2012 thru 2019

2016 SCPM Metals Emissions

Activity/Emission Unit	RMT PM (tpy)	NSW PM (tpy)	SSR PM (tpy)	RSR PM (tpy)	Total (tpy)
Shredding and Screening	0.0000	0.0274			0.0274
Material Drops	0.0382	0.0010			0.0392
Internal Combustion Engines	0.1497				0.1497
AL Dryer Propane Combustion		0.0167			0.0167
Torch Cutting	0.2858		0.0033		0.2891
Paved Roads (Controlled)	0.0000	1.1211		0.1448	1.2660
Unpaved Roads (Controlled)	11.2783		2.8197		14.0980
Totals PM Included in Metal Emission Estimates	11.75	1.17	2.82	0.14	15.89

Total PM Emissions (tpy) Used to Estimate Corresponding Metal Emissions	RMT Screening	NSW Screening	SCPM Paved Roads + Torch Cutting	SCPM Unpaved Roads and Material Drops	Totals
	0.0000	0.0284	1.5550	14.1362	15.7197

HAP (Y/N)	Metal	(tpy)	(tpy)	(tpy)	(tpy)	SCPM Totals	
						(tpy)	lb/yr
Y	Antimony	0.00E+00	7.07E-07	1.85E-06	1.75E-05	0.0000	0.04
Y	Arsenic	0.00E+00	3.32E-08	1.85E-06	1.75E-05	0.0000	0.04
Y	Beryllium	0.00E+00	3.32E-09	1.85E-06	1.75E-05	0.0000	0.04
Y	Cadmium	0.00E+00	4.35E-07	1.13E-06	1.18E-05	0.0000	0.03
Y	Chromium	0.00E+00	3.01E-06	5.38E-04	4.28E-03	0.0048	9.65
Y	Cobalt	0.00E+00	3.30E-06	4.26E-06	3.03E-05	0.0000	0.08
Y	Lead	0.00E+00	1.58E-05	8.44E-05	1.01E-03	0.0011	2.21
Y	Manganese	0.00E+00	1.77E-05	7.40E-03	7.12E-02	0.0787	157.33
Y	Mercury	0.00E+00	2.70E-09	1.48E-07	1.47E-06	0.0000	0.00
Y	Nickel	0.00E+00	2.87E-06	3.97E-05	2.86E-04	0.0003	0.66
Y	Phosphorus	0.00E+00	4.38E-05	6.24E-05	2.60E-03	0.0027	5.41
Y	Selenium	0.00E+00	3.32E-08	1.85E-06	1.75E-05	0.0000	0.04
N	Barium	0.00E+00	9.12E-06	8.89E-05	7.29E-04	0.0008	1.65
N	Copper	0.00E+00	5.00E-05	1.48E-04	1.02E-03	0.0012	2.44
N	Silver	0.00E+00	1.07E-07	1.85E-06	1.75E-05	0.0000	0.04
N	Titanium	0.00E+00	1.99E-05	3.98E-04	2.35E-03	0.0028	5.53
N	Zinc	0.00E+00	1.01E-04	3.87E-04	2.52E-03	0.0030	6.01

Total Metal HAPs	0.0878	175.53
-------------------------	---------------	---------------

Summary of SCPM Metals Emissions 2012 thru 2019

2017 SCPM Metals Emissions

Activity/Emission Unit	RMT PM (tpy)	NSW PM (tpy)	SSR PM (tpy)	RSR PM (tpy)	Total (tpy)
Shredding and Screening	0.0000	0.0369			0.0369
Material Drops	0.0459	0.0010			0.0469
Internal Combustion Engines	0.1570				0.1570
AL Dryer Propane Combustion		0.0247			0.0247
Torch Cutting	0.3828		0.0030		0.3857
Paved Roads (Controlled)	0.0000	1.1662		0.1363	1.3025
Unpaved Roads (Controlled)	13.5486		3.1135		16.6621
Totals PM Included in Metal Emission Estimates	14.13	1.23	3.12	0.14	18.62

Total PM Emissions (tpy) Used to Estimate Corresponding Metal Emissions	RMT Screening	NSW Screening	SCPM Paved Roads + Torch Cutting	SCPM Unpaved Roads and Material Drops	Totals
	0.0000	0.0380	1.6882	16.7080	18.4342

HAP (Y/N)	Metal	(tpy)	(tpy)	(tpy)	(tpy)	SCPM Totals	
						(tpy)	lb/yr
Y	Antimony	0.00E+00	9.46E-07	2.01E-06	2.07E-05	0.0000	0.05
Y	Arsenic	0.00E+00	4.44E-08	2.01E-06	2.07E-05	0.0000	0.05
Y	Beryllium	0.00E+00	4.44E-09	2.01E-06	2.07E-05	0.0000	0.05
Y	Cadmium	0.00E+00	5.81E-07	1.22E-06	1.39E-05	0.0000	0.03
Y	Chromium	0.00E+00	4.03E-06	5.84E-04	5.06E-03	0.0057	11.30
Y	Cobalt	0.00E+00	4.41E-06	4.63E-06	3.58E-05	0.0000	0.09
Y	Lead	0.00E+00	1.58E-05	8.44E-05	1.01E-03	0.0011	2.21
Y	Manganese	0.00E+00	2.37E-05	8.04E-03	8.42E-02	0.0923	184.54
Y	Mercury	0.00E+00	3.61E-09	1.60E-07	1.74E-06	0.0000	0.00
Y	Nickel	0.00E+00	3.84E-06	4.30E-05	3.38E-04	0.0004	0.77
Y	Phosphorus	0.00E+00	5.85E-05	6.77E-05	3.07E-03	0.0032	6.40
Y	Selenium	0.00E+00	4.44E-08	2.01E-06	2.07E-05	0.0000	0.05
N	Barium	0.00E+00	1.22E-05	9.66E-05	8.62E-04	0.0010	1.94
N	Copper	0.00E+00	6.68E-05	1.61E-04	1.21E-03	0.0014	2.87
N	Silver	0.00E+00	1.42E-07	2.01E-06	2.07E-05	0.0000	0.05
N	Titanium	0.00E+00	2.65E-05	4.32E-04	2.77E-03	0.0032	6.46
N	Zinc	0.00E+00	1.35E-04	4.20E-04	2.97E-03	0.0035	7.06

Total Metal HAPs	0.1028	205.53
-------------------------	---------------	---------------

Summary of SCPM Metals Emissions 2012 thru 2019

2018 SCPM Metals Emissions

Activity/Emission Unit	RMT PM (tpy)	NSW PM (tpy)	SSR PM (tpy)	RSR PM (tpy)	Total (tpy)
Shredding and Screening	0.0000	0.0486			0.0486
Material Drops	0.0457	0.0011			0.0468
Internal Combustion Engines	0.1676				0.1676
AL Dryer Propane Combustion		0.0338			0.0338
Torch Cutting	0.3701		0.0026		0.3727
Paved Roads (Controlled)	0.0000	1.2521		0.1115	1.3635
Unpaved Roads (Controlled)	13.4938		3.4281		16.9219
Totals PM Included in Metal Emission Estimates	14.08	1.34	3.43	0.11	18.95

Total PM Emissions (tpy) Used to Estimate Corresponding Metal Emissions	RMT Screening	NSW Screening	SCPM Paved Roads + Torch Cutting	SCPM Unpaved Roads and Material Drops	Totals
	0.0000	0.0497	1.7363	16.9676	18.7536

HAP (Y/N)	Metal	(tpy)	(tpy)	(tpy)	(tpy)	SCPM Totals	
						(tpy)	lb/yr
Y	Antimony	0.00E+00	1.24E-06	2.07E-06	2.10E-05	0.0000	0.05
Y	Arsenic	0.00E+00	5.82E-08	2.07E-06	2.10E-05	0.0000	0.05
Y	Beryllium	0.00E+00	5.82E-09	2.07E-06	2.10E-05	0.0000	0.05
Y	Cadmium	0.00E+00	7.61E-07	1.26E-06	1.42E-05	0.0000	0.03
Y	Chromium	0.00E+00	5.27E-06	6.01E-04	5.14E-03	0.0057	11.49
Y	Cobalt	0.00E+00	5.77E-06	4.76E-06	3.63E-05	0.0000	0.09
Y	Lead	0.00E+00	1.58E-05	8.44E-05	1.01E-03	0.0011	2.21
Y	Manganese	0.00E+00	3.10E-05	8.26E-03	8.55E-02	0.0938	187.62
Y	Mercury	0.00E+00	4.73E-09	1.65E-07	1.76E-06	0.0000	0.00
Y	Nickel	0.00E+00	5.02E-06	4.43E-05	3.43E-04	0.0004	0.78
Y	Phosphorus	0.00E+00	7.66E-05	6.96E-05	3.12E-03	0.0033	6.54
Y	Selenium	0.00E+00	5.82E-08	2.07E-06	2.10E-05	0.0000	0.05
N	Barium	0.00E+00	1.60E-05	9.93E-05	8.76E-04	0.0010	1.98
N	Copper	0.00E+00	8.75E-05	1.65E-04	1.23E-03	0.0015	2.96
N	Silver	0.00E+00	1.87E-07	2.07E-06	2.10E-05	0.0000	0.05
N	Titanium	0.00E+00	3.48E-05	4.44E-04	2.82E-03	0.0033	6.59
N	Zinc	0.00E+00	1.77E-04	4.32E-04	3.02E-03	0.0036	7.26

Total Metal HAPs	0.1045	208.97
-------------------------	---------------	---------------

Summary of SCPM Metals Emissions 2012 thru 2019

2019 SCPM Metals Emissions

Activity/Emission Unit	RMT PM (tpy)	NSW PM (tpy)	SSR PM (tpy)	RSR PM (tpy)	Total (tpy)
Shredding and Screening	0.3793	0.0503			0.4295
Material Drops	0.0430	0.0010			0.0440
Internal Combustion Engines	0.2080				0.2080
AL Dryer Propane Combustion		0.0260			0.0260
Torch Cutting	0.2646		0.0022		0.2669
Paved Roads (Controlled)	0.3586	1.1529		0.0855	1.5970
Unpaved Roads (Controlled)	11.7235		2.5731		14.2966
Totals PM Included in Metal Emission Estimates	12.98	1.23	2.58	0.09	16.87

Total PM Emissions (tpy) Used to Estimate Corresponding Metal Emissions	RMT Screening	NSW Screening	SCPM Paved Roads + Torch Cutting	SCPM Unpaved Roads and Material Drops	Totals
	0.3793	0.0513	1.8639	14.3397	16.6342

HAP (Y/N)	Metal	(tpy)	(tpy)	(tpy)	(tpy)	SCPM Totals	
						(tpy)	lb/yr
Y	Antimony	4.44E-07	1.28E-06	2.22E-06	1.78E-05	0.0000	0.04
Y	Arsenic	4.44E-07	6.00E-08	2.22E-06	1.78E-05	0.0000	0.04
Y	Beryllium	1.90E-07	6.00E-09	2.22E-06	1.78E-05	0.0000	0.04
Y	Cadmium	3.65E-07	7.85E-07	1.35E-06	1.20E-05	0.0000	0.03
Y	Chromium	2.00E-04	5.44E-06	6.45E-04	4.34E-03	0.0052	10.39
Y	Cobalt	2.35E-06	5.95E-06	5.11E-06	3.07E-05	0.0000	0.09
Y	Lead	1.75E-05	1.58E-05	8.44E-05	1.01E-03	0.0011	2.25
Y	Manganese	1.52E-03	3.20E-05	8.87E-03	7.23E-02	0.0827	165.39
Y	Mercury	0.00E+00	4.87E-09	1.77E-07	1.49E-06	0.0000	0.00
Y	Nickel	2.83E-05	5.18E-06	4.75E-05	2.90E-04	0.0004	0.74
Y	Phosphorus	3.30E-04	7.90E-05	7.47E-05	2.64E-03	0.0031	6.24
Y	Selenium	4.48E-07	6.00E-08	2.22E-06	1.78E-05	0.0000	0.04
N	Barium	1.39E-04	1.65E-05	1.07E-04	7.40E-04	0.0010	2.00
N	Copper	1.41E-04	9.03E-05	1.78E-04	1.04E-03	0.0014	2.90
N	Silver	4.48E-07	1.92E-07	2.22E-06	1.78E-05	0.0000	0.04
N	Titanium	6.94E-05	3.58E-05	4.77E-04	2.38E-03	0.0030	5.93
N	Zinc	6.30E-04	1.83E-04	4.64E-04	2.55E-03	0.0038	7.66

Total Metal HAPs	0.0926	185.30
-------------------------	---------------	---------------



Safety Data Sheet

Issue Date: 22-Dec-2014

Revision Date: 26-May-2015

Version 1

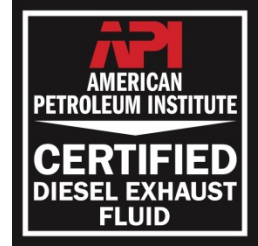
1. IDENTIFICATION

Product Identifier

Product Name ALLFLEET DIESEL EXHAUST FLUID (DEF) API License #0044; ISO 22241

Other means of identification

SDS # 046
Product Code 95222APIDEF



Recommended use of the chemical and restrictions on use

Recommended Use Diesel Exhaust NOx Reducing Agent

Details of the supplier of the safety data sheet

Supplier Address
RelaDyne, LLC
9395 Kenwood Rd, Suite 104
Blue Ash, OH 45242

Emergency Telephone Number

Company Phone Number 888-830-3156
Emergency Telephone (24 hr) INFOTRAC 800-535-5053

2. HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Not classified

Label Elements

GHS-US Labeling No labeling applicable

Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

Unknown Acute Toxicity (GHS-US) No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Not applicable

Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Water	(CAS No) 7732-18-5	67.5	Not classified
Urea	(CAS No) 57-13-6	32.5	Not classified

4. FIRST-AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness develops or persists.

Ingestion: Rinse mouth. DO NOT induce vomiting. Obtain medical attention.

Most Important Symptoms and Effects Both Acute and Delayed

General: Not expected to present a significant hazard under anticipated conditions of normal use.

Inhalation: Prolonged exposure to liquid may cause a mild irritation.

Skin Contact: May cause mild skin irritation.

Eye Contact: Prolonged exposure to liquid may cause a mild irritation.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Not available

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of a heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Oxides of Carbon, Nitrogen, Ammonia.

Reference to Other Sections

Refer to Section 9 for flammability properties.

6. ACCIDENTAL RELEASE MEASURES**Personal Precautions, Protective Equipment and Emergency Procedures**

General Measures: Avoid breathing (vapor, mist, spray). Avoid prolonged contact with eyes, skin and clothing.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Stop leak if safe to do so. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Contact competent authorities after a spill

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material, then place in suitable container.

Reference to Other Sections

See Section 8, Exposure Controls and Personal Protection.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: When heated to decomposition, emits toxic fumes.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool, and well-ventilated place. Keep container closed when not in use. Keep/Store away from extremely high or low temperatures, incompatible materials.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Alkalis.

Specific End User(s)

Diesel Exhaust NOx Reducing Agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

No additional information available.

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: In case of splash hazard: safety glasses



Materials for Protective Clothing: Not applicable.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: In case of splash hazard: chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Other Information: When using, do not eat, drink, or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State

Liquid

Appearance	Colorless, clear
Odor	Slight Ammonia
Odor Threshold	Not available
pH	9.8 – 10
Evaporation Rate	Not available
Melting Point	Not available
Freezing Point	-12°C (54°F)
Boiling Point	104°C (219°F)
Flash Point	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Flammability (solid, gas)	Not available
Lower Flammable Limit	Not available
Upper Flammable Limit	Not available
Vapor Pressure	Not available
Relative Vapor Density at 20°C	Not available
Relative Density	Not available
Specific gravity / density	9.0909 lbs. / USG – 4.13 kg / 3.785L @ 20°C (68°F)
Specific gravity	1.087-1.093 @ 20°C (68°F)
Solubility	100%
Partition Coefficient: N-Octanol/Water	Not available
Viscosity	Not available
Explosion Data – Sensitivity to Mechanical Impact	Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	Not expected to present an explosion hazard due to static discharge.

10. STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions.

Chemical Stability: Stable under recommended handling and storage conditions (see Section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures. Incompatible materials.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Alkalis.

Hazardous Decomposition Products: Nitrogen oxides. Irritating fumes. Ammonia. Carbon oxides (CO, CO

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects – Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion / Irritation: Not classified

pH: 9.8-10

Serious Eye Damage / Irritation: Not classified

pH: 9.8-10

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Prolonged exposure to liquid may cause a mild irritation.

Symptoms/Injuries After Skin Contact: May cause mild skin irritation.

Symptoms/Injuries After Eye Contact: Prolonged exposure to liquid may cause a mild irritation.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Information on Toxicological Effects – Ingredient(s)

LD50 and LC50 Data:

Water (7732-18-5)	
LD50 Oral Rat	>90000 mg/kg
Urea (57-13-6)	
LD50 Oral Rat	8471 mg/kg

12. ECOLOGICAL INFORMATION

Toxicity No additional information available

Urea (57-13-6)	
LC50 Fish 1	16200 – 18300 mg/l (Exposure time: 96 h – Species: Poecilia reticulata)
EC50 Daphnia 1	3910 mg/l (Exposure time: 48 h – Species: Daphnia magna [Static])

Persistence and Degradability

Diesel Exhaust Fluid	
Persistence and Degradability	Not established.

Bioaccumulative Potential

Diesel Exhaust Fluid	
Bioaccumulative Potential	Not established.

Urea (57-13-6)	
BCF Fish 1	< 10
Log Pow	-1.59 (at 25°C)

Mobility in Soil: Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

14. TRANSPORT INFORMATION

In Accordance with DOT: Not regulated for transport
In Accordance with IMDG: Not regulated for transport
In Accordance with IATA: Not regulated for transport
In Accordance with TDG: Not regulated for transport

15. REGULATORY INFORMATION

US Federal Regulations

Water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Urea (57-13-5)	
Listed on the United State TSCA (Toxic Substances Control Act) inventory	

US State Regulations

Urea (57-13-6)	
U.S. – Minnesota – Hazardous Substance List	
U.S. – Texas – Effects Screening Levels – Long Term	
U.S. – Texas – Effects Screening Levels – Short Term	

Canadian Regulations

Diesel Exhaust Fluid	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Water (7732-18-5)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Urea (57-13-6)	
Listed on Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIA classification criteria

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

16. OTHER INFORMATION

This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.



- NFPA Health Hazard:** 1 – Exposure could cause irritation but only minor residual injury even if no treatment is given.
- NFPA Fire Hazard:** 0 – Materials that will not burn
- NFPA Reactivity:** 0 – Normally stable, even under fire exposure conditions, and are not reactive with water.

- HMIS III Rating**

 - Health** 1 – Slight Hazard – Irritation or minor reversible injury possible
 - Flammability** 0 – Minimal Hazard
 - Physical** 0 – Minimal Hazard

- Issue Date:** 29-Oct-2013
- Revision Date:** 26-May-2015
- Revision Note:** New format

DISCLAIMER

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

This Safety Data Sheet is prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012. The information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

End of Safety Data Sheet

ALLFLEET Heavy Duty Engine Oils

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: HDEO.001



SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: ALLFLEET Heavy Duty Engine Oils

Product Grades: 10W-30, 10W, 20W, 30W, 40W

Product #: 952270010HD, 952271030HD, 952270020HD, 952270030HD, 952270040HD

Synonyms: Engine Oil

1.2. Intended Use of the Product

Engine Oil.

1.3. Name, Address, and Telephone of the Responsible Party

Company

RelaDyne, LLC

9395 Kenwood Rd,

Suite 104

Blue Ash, OH 45242

888-830-3156

www.reladyne.com

1.4. Emergency Telephone Number

Emergency Number : INFOTRAC 800-535-5053

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Not Classified

Full text of H-phrases: see section 16

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) : None Required

Signal Word (GHS-US) : Not Hazardous

Hazard Statements (GHS-US) : None Required

Precautionary Statements (GHS-US) : P273 - Avoid release to the environment.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

The mixture consists of substances capable of producing an aspiration hazard. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure, and even death.

2.4. Unknown Acute Toxicity (GHS-US)

20.73 percent of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

ALLFLEET Heavy Duty Engine Oils

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: HDEO.001



3.1. Substances

Not applicable

3.2. Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Petroleum distillates, solvent dewaxed	(CAS No) 64742-65-0	75.75 – 95, 64 - 85	Not Classified
heavy paraffinic, Distillates, petroleum, hydrotreated heavy paraffinic	(CAS No) 64742-54-7	0 – 11, 10 - 17	Not Classified
Paraffin oils*	(CAS No) 8012-95-1	0 - 0.1, 0.1- 1, 1 - 5	Not Classified
Phenol, 4-dodecyl-	(CAS No) 104-43-8	0.1 - 1	Aquatic Chronic 3, H402
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	(CAS No) 68649-42-3	2.7 - 11.75	Aquatic Chronic 3, H402

*The specific chemical identity and/or exact percentage of composition have been withheld as a trade secret within the meaning of the OSHA Hazard Communication Standard [29 CFR 1910.1200].

*More than one of the ranges of concentration prescribed by Controlled Products Regulations has been used where necessary, due to varying composition.

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Drench affected area with water or soap and water for at least 15 minutes. Wash contaminated clothing before reuse. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: No known significant effects or critical hazards.

Inhalation: Overexposure may be irritating to the respiratory system.

Skin Contact: Repeated or prolonged skin contact may cause irritation.

Eye Contact: Direct contact with the eyes is likely irritating.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: No known significant effects or critical hazards.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable but will support combustion.

Explosion Hazard: Product is not explosive.

ALLFLEET Heavy Duty Engine Oils

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: HDEO.001



Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire. Under fire conditions, hazardous fumes will be present.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Under fire conditions, may produce fumes, smoke, oxides of carbon and hydrocarbons.

Other Information: Refer to Section 9 for flammability properties.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid breathing (vapor, mist, spray).

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Stop leak if safe to do so. Eliminate ignition sources. Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained. Practice good housekeeping - spillage can be slippery on smooth surface either wet or dry.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidizers.

7.3. Specific End Use(s)

Engine Oil .

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or

ALLFLEET Heavy Duty Engine Oils

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: HDEO.001



the Mexican government.

Paraffin oils (8012-95-1)		
USA ACGIH	ACGIH TWA (mg/m ³)	5 mg/m ³ (excluding metal working fluids, highly & severely refined-inhalable fraction)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen highly and severely refined, Suspected Human Carcinogen highly and severely refined
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (STEL) (mg/m ³)	10 mg/m ³
USA IDLH	US IDLH (mg/m ³)	2500 mg/m ³
Alberta	OEL STEL (mg/m ³)	10 mg/m ³
Alberta	OEL TWA (mg/m ³)	5 mg/m ³
British Columbia	OEL TWA (mg/m ³)	0.2 mg/m ³ (mildly refined) 1 mg/m ³ (severely refined)
Manitoba	OEL TWA (mg/m ³)	5 mg/m ³ (excluding metal working fluids, highly & severely refined-inhalable fraction)
New Brunswick	OEL STEL (mg/m ³)	10 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	5 mg/m ³ (as sampled by a method that does not collect vapor)
Newfoundland & Labrador	OEL TWA (mg/m ³)	5 mg/m ³ (excluding metal working fluids, highly & severely refined-inhalable fraction)
Nova Scotia	OEL TWA (mg/m ³)	5 mg/m ³ (excluding metal working fluids, highly & severely refined-inhalable fraction)
Nunavut	OEL STEL (mg/m ³)	10 mg/m ³
Nunavut	OEL TWA (mg/m ³)	5 mg/m ³
Northwest Territories	OEL STEL (mg/m ³)	10 mg/m ³
Northwest Territories	OEL TWA (mg/m ³)	5 mg/m ³
Ontario	OEL TWA (mg/m ³)	5 mg/m ³ (pure, highly and severely refined, excluding metal working fluids-inhalable)
Prince Edward Island	OEL TWA (mg/m ³)	5 mg/m ³ (excluding metal working fluids, highly & severely refined-inhalable fraction)
Québec	VECD (mg/m ³)	10 mg/m ³ (mist)
Québec	VEMP (mg/m ³)	5 mg/m ³ (mist)
Saskatchewan	OEL STEL (mg/m ³)	10 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	5 mg/m ³
Yukon	OEL STEL (mg/m ³)	10 mg/m ³
Yukon	OEL TWA (mg/m ³)	5 mg/m ³

8.2. Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Personal Protective Equipment: Protective goggles. Gloves. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical goggles or safety glasses.

ALLFLEET Heavy Duty Engine Oils

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: HDEO.001



Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

Environmental Exposure Controls: Do not allow the product to be released into the environment.

Consumer Exposure Controls: Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Amber
Odor	: Slight Hydrocarbon
Odor Threshold	: Not available
pH	: Not available
Evaporation Rate	: Not available
Melting Point	: Not available
Boiling Point	: > 280 °C (536 °F)
Flash Point	: > 200 °C (COC) (392 °F)
Auto-ignition Temperature	: > 320 °C (COC) (608 °F)
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Relative Density	: Not available
Specific Gravity	: 0.85
Solubility	: Negligible
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available
Viscosity, Kinematic	: Not available
Explosive Properties	: Product is not explosive
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge

SECTION 10: STABILITY AND REACTIVITY

- 10.1. **Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. **Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).
- 10.3. **Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. **Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames, incompatible materials, and other ignition sources.
- 10.5. **Incompatible Materials:** Strong acids, strong bases, strong oxidizers.
- 10.6. **Hazardous Decomposition Products:** Thermal decomposition generates: carbon oxides (CO, CO₂). Hydrocarbons.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity: Not classified

05/28/2015

ALLFLEET Heavy Duty Motor Oil

SDS# 041

5/8

ALLFLEET Heavy Duty Engine Oils

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: HDEO.001



LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified

Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Overexposure may be irritating to the respiratory system.

Symptoms/Injuries After Skin Contact: Repeated or prolonged skin contact may cause irritation.

Symptoms/Injuries After Eye Contact: Direct contact with the eyes is likely irritating.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Not Classified

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Paraffin oils (8012-95-1)	
LC50 Inhalation Rat	2062 ppm/4h
ATE US (gases)	2,062.00 ppmV/4h
Heavy paraffinic, Distillates, petroleum, hydrotreated heavy paraffinic (64742-54-7)	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rabbit	> 2 g/kg
Petroleum distillates, solvent dewaxed (64742-65-0)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rabbit	> 5 g/kg
Paraffin oils (8012-95-1)	
IARC Group	1

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General: Toxic to aquatic life.

Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)	
LC50 Fish 1	1.0 - 5.0 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 1	1 - 1.5 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	10.0 - 35.0 mg/l (Exposure time: 96 h - Species: Pimephales promelas [semi-static])
Petroleum distillates, solvent dewaxed (64742-65-0)	
EC50 Daphnia 1	> 1000 mg/L (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 1	> 5000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
Distillates, petroleum, hydrotreated heavy paraffinic (64742-54-7)	
LC50 Fish 1	> 5000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Daphnia 1	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)

12.2. Persistence and Degradability

Not available

12.3. Bioaccumulative Potential

Not available

12.4. Mobility in Soil

ALLFLEET Heavy Duty Engine Oils

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: HDEO.001



Not available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Sewage Disposal Recommendations: Do not empty into drains; dispose of this material and its container in a safe way. Do not empty into drains. Do not dispose of waste into sewer.

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT Not regulated for transport

14.2. In Accordance with IMDG Not regulated for transport

14.3. In Accordance with IATA Not regulated for transport

14.4. In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

SARA Section 311/312 Hazard Classes	Not Classified
-------------------------------------	----------------

15.2. US State Regulations

Paraffin oils (8012-95-1) U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

15.3. Canadian Regulations

WHMIS Classification	Not Classified
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects
Paraffin oils (8012-95-1)	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
Petroleum distillates, solvent dewaxed (64742-65-0)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Distillates, petroleum, hydrotreated heavy paraffinic (64742-54-7)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 05/28/2015

05/28/2015

ALLFLEET Heavy Duty Motor Oil

SDS# 041

7/8

ALLFLEET Heavy Duty Engine Oils

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: HDEO.001



Other Information

: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

P273	Avoid release into the environment
P501	Dispose of contents/container in accordance with local, regional, national, and international regulations.

Party Responsible for the Preparation of This Document

RelaDyne, LLC
9395 Kenwood Rd, Suite 104
Blue Ash, OH 45242
888-830-3156
www.reladyne.com

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

North America GHS US 2012 & WHMIS 2

ALLFLEET Premium Gear Lubricants

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: GEAR.001



SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: ALLFLEET Premium Gear Lubricants

Product Grades: 80W-90, 85W-140

Product #: 952658090LS, 952658090MP, 9526585140M

Synonyms: Gear Oil

1.2. Intended Use of the Product

Gear Oil

1.3. Name, Address, and Telephone of the Responsible Party

Company

RelaDyne, LLC

9395 Kenwood Rd, Suite 104

Blue Ash, OH 45242

888-830-3156

www.reladyne.com

1.4. Emergency Telephone Number

Emergency Number : INFOTRAC 800-535-5053

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Not Classified

Full text of H-phrases: see section 16

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) : None Required

Signal Word (GHS-US) : Not Hazardous

Hazard Statements (GHS-US) : None Required

Precautionary Statements (GHS-US) : P273 - Avoid release to the environment.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

The mixture consists of substances capable of producing an aspiration hazard. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure, and even death.

2.4. Unknown Acute Toxicity (GHS-US)

17.29 percent of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable

ALLFLEET Premium Gear Lubricants

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: GEAR.001



3.2. Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Polybutene (Isobutylene/utane copolymer)	(CAS No) 9003-29-6	64 – 85, 0 – 10	Not Classified
Petroleum distillates, hydrotreated heavy naphthenic	(CAS No) 64742-52-5	0 – 10	Not Classified
Dec-1-ene, homopolymer hydrogenated	(CAS No) 68037-01-4	0 – 11, 10 – 17, 27 – 39	Aspiration Hazard 1, H304
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	(CAS No) 68649-42-3	0 – 2.7	Aquatic Chronic 3, H402

*The specific chemical identity and/or exact percentage of composition have been withheld as a trade secret within the meaning of the OSHA Hazard Communication Standard [29 CFR 1910.1200].

*More than one of the ranges of concentration prescribed by Controlled Products Regulations has been used where necessary, due to varying composition.

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Drench affected area with water or soap and water for at least 15 minutes. Wash contaminated clothing before reuse. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: No known significant effects or critical hazards.

Inhalation: Overexposure may be irritating to the respiratory system.

Skin Contact: Repeated or prolonged skin contact may cause irritation.

Eye Contact: Direct contact with the eyes is likely irritating.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: No known significant effects or critical hazards.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable but will support combustion.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire. Under fire conditions, hazardous fumes will be present.

ALLFLEET Premium Gear Lubricants

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: GEAR.001



Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Under fire conditions, may produce fumes, smoke, oxides of carbon and hydrocarbons.

Other Information: Refer to Section 9 for flammability properties.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid breathing (vapor, mist, spray).

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Stop leak if safe to do so. Eliminate ignition sources. Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained. Practice good housekeeping – spillage can be slippery on smooth surface either wet or dry.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidizers.

7.3. Specific End Use(s)

Gear Oil.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

8.2. Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

ALLFLEET Premium Gear Lubricants

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: GEAR.001



Personal Protective Equipment: Protective goggles. Gloves.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

Environmental Exposure Controls: Do not allow the product to be released into the environment.

Consumer Exposure Controls: Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Amber
Odor	: Slight Hydrocarbon
Odor Threshold	: Not available
pH	: Not available
Evaporation Rate	: Not available
Melting Point	: Not available
Boiling Point	: Not available
Flash Point	: 204C / 400C
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Relative Density	: Not available
Specific Gravity	: 0.85
Solubility	: Negligible
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available
Viscosity, Kinematic	: Not available
Explosive Properties	: Product is not explosive
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge

SECTION 10: STABILITY AND REACTIVITY

- 10.1. **Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. **Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).
- 10.3. **Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. **Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames,

ALLFLEET Premium Gear Lubricants

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: GEAR.001



incompatible materials, and other ignition sources.

10.5. Incompatible Materials: Strong acids, strong bases, strong oxidizers.

10.6. Hazardous Decomposition Products: No decomposition expected under normal use and storage conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects – Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified

Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Overexposure may be irritating to the respiratory system.

Symptoms/Injuries After Skin Contact: Repeated or prolonged skin contact may cause irritation.

Symptoms/Injuries After Eye Contact: Direct contact with the eyes is likely irritating.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse gastrointestinal effects.

Chronic Symptoms: Not Classified

11.2. Information on Toxicological Effects – Ingredient(s)

LD50 and LC50 Data:

Polybutene (Isobutylene/utane copolymer) (9003-29-6)	
LD50 Oral Rats	> 30 g/kg
LD50 Dermal Rabbits	> 10 g/kg
Dec-1-ene, homopolymer hydrogenated (68037-01-4)	
LD50 Oral Rat	> 5 ml/kg
LD50 Inhalation Rat	1,17 mg/l (exposure time 4 hours)
LD50 Dermal Rabbit	> 3 g/kg
Petroleum distillates, hydrotreated heavy naphthenic (64741-52-5)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rabbit	> 5000 mg/kg
LD50 Inhalation Rat	> 5 mg/l (exposure time 4 hours)

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology – General: Toxic to aquatic life.

Dec-1-ene, homopolymer hydrogenated (68037-01-4)	
LL50 Fish	> 1000 mg/l (Exposure time 48 hours; Species Daphnia Magna)
EL50 Algae	> 1000 mg/l (Exposure time 72 hours; Species Scenedesmus capricornutum)
NOEC Daphnia	125 mg/l (Exposure time 21 days; Species Daphnia Magna)

12.2. Persistence and Degradability

Not available

12.3. Bioaccumulative Potential

Not available

12.4. Mobility in Soil

Not available

ALLFLEET Premium Gear Lubricants

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: GEAR.001



12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Sewage Disposal Recommendations: Do not empty into drains; dispose of this material and its container in a safe way. Do not empty into drains. Do not dispose of waste into sewer.

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

SECTION 14: TRANSPORT INFORMATION

- 14.1. In Accordance with DOT Not regulated for transport
- 14.2. In Accordance with IMDG Not regulated for transport
- 14.3. In Accordance with IATA Not regulated for transport
- 14.4. In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

SARA Section 311/312 Hazard Classes	Not Classified
-------------------------------------	----------------

15.2. US State Regulations

None noted

15.3. Canadian Regulations

WHMIS Classification	Not Classified
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 2 Subdivision B – Toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 05/16/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

H304	May be fatal if swallowed and enters airways.
H402	Harmful to aquatic life.
P273	Avoid release into the environment
P501	Dispose of contents/container in accordance with local, regional, national, and international regulations.

ALLFLEET Premium Gear Lubricants

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Version: GEAR.001



Party Responsible for the Preparation of This Document

RelaDyne, LLC

9395 Kenwood Rd, Suite 104

Blue Ash, OH 45242

888-830-3156

www.reladyne.com

This Safety Data Sheet is prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012. The information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

North America GHS US 2012 & WHMIS 2



Safety Data Sheet

Material Name: AllFleet HD 15w40 CK4

SDS ID: 952281549CK

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

AllFleet HD 15w40 CK-4

Product Code

952281549CK

Synonyms

HDDEO

Recommended Use

Lubricating oils. If this product is used in combination with other products, refer to the Safety Data Sheet for those products.

Restrictions on Use

None known.

Manufactured For:

RelaDyne, LLC

8280 Montgomery Rd, Suite 101

Cincinnati, OH 45236

www.reladyne.com

Phone: 888-830-3156

Emergency Phone #: INFOTRAC 800-535-5053

Issue Date

November 29, 2016 **Supersedes Issue Date**

New Issue SDS **Original Issue Date**

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

None needed according to classification criteria

GHS Label Elements

Symbol(s)

None needed according to classification criteria

Signal Word

None needed according to classification criteria

Hazard Statement(s)

None needed according to classification criteria.

Precautionary Statement(s)

Prevention

None needed according to classification criteria.

Response

None needed according to classification criteria.

Storage

None needed according to classification criteria.

Disposal

Dispose of in accordance with all applicable federal, state and local regulations.

Safety Data Sheet

Material Name: AllFleet HD 15w40 CK4

Other Hazards

Repeated exposure may cause skin dryness or cracking.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
64742-58-1	Lubricating oils, petroleum, hydrotreated spent	75-80
64742-65-0	Distillates, petroleum, solvent-dewaxed heavy paraffinic	5-10
113706-15-3	Phosphorodithioic acid, mixed O,O-bis(sec-butyl and isooctyl) esters, zinc salts	1-5
64741-89-5	Distillates, petroleum, solvent-refined light paraffinic	1-5
64742-54-7	Distillates, petroleum, hydrotreated heavy paraffinic	1-5
64742-70-7	Paraffin oils, petroleum, catalytic dewaxed heavy	0.1-1

Section 4 - FIRST AID MEASURES

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention, if needed.

Skin

IF ON SKIN: Wash with plenty of soap and water. Get medical attention, if needed.

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention, if needed.

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms/Effects

Acute

No information on significant adverse effects.

Delayed

Repeated exposure may cause skin dryness or cracking.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, regular foam, dry chemical, water spray, water fog, Water or foam may cause frothing.

Unsuitable Extinguishing Media

Do not use high-pressure water streams.

Special Hazards Arising from the Chemical

Negligible fire hazard. Avoid friction, static electricity and sparks.

Safety Data Sheet

Material Name: AllFleet HD 15w40 CK4

Hazardous Combustion Products

Decomposition and combustion materials may be toxic. Burning may produce sulfur oxides, aldehydes, ketones, carbon monoxide and unidentified organic compounds.

Fire Fighting Measures

A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, spark proof tool into a sealable container for disposal. Additionally, for large spills: Dike far ahead of liquid spill for collection and later disposal. There may be specific federal regulatory reporting requirements associated with spills, leaks, or releases of this product. Also see SECTION 15: REGULATORY INFORMATION.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Keep away from heat, sparks and naked flames. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean tools and explosion-proof equipment. When transferring large volumes of product, metal containers, including trucks and tank cars, should be grounded and bonded. This product has a low vapor pressure and is not expected to present an inhalation hazard under normal temperatures and pressures. However, when aerosolizing, misting, or heating this product, do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes Skin clothing shoes.

Conditions for Safe Storage, Including any Incompatibilities

None needed according to classification criteria.

Additional information: Storage. Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous.

Incompatible Materials

Strong oxidizing materials

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Safety Data Sheet

Material Name: AllFleet HD 15w40 CK4

Engineering Controls

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear safety glasses. Additional protection like goggles, face shields, or respirators may be needed dependent upon anticipated use and concentrations of vapors or mists. Eye wash fountain and emergency showers are recommended. Contact lens use is not recommended.

Respiratory Protection

No respiratory protection is normally required. Protection provided by air purifying respirators is limited. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

Glove Recommendations

Where skin contact is likely, wear neoprene, nitrile, or equivalent protective gloves; use of natural rubber or equivalent gloves is not recommended.

Protective Materials

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to regulatory requirements. The following PPE should be considered the minimum required: Safety glasses, Gloves, and Lab coat or apron.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid.	Physical State	Liquid
Odor	Petroleum	Color	Amber.
Odor Threshold	Not available	pH	Not available
Melting Point	Not available	Boiling Point	129.5 °C (265 °F Minimum)
Boiling Point Range	Not available	Freezing point	Not available
Evaporation Rate	Not available	Flammability (solid, gas)	Not available
Autoignition Temperature	Not available	Flash Point	165 °C [Cleveland Open Cup.] (329 °F Minimum)
Lower Explosive Limit	Not available	Decomposition temperature	Not available
Upper Explosive Limit	Not available	Vapor Pressure	<0.1 mmHg @ 68°F °C (20 °C)
Vapor Density (air=1)	Not available	Specific Gravity (water=1)	0.87 (Approximate Water = 1)
Water Solubility	(Insoluble)	Partition coefficient: n-octanol/water	Not available
Viscosity	>100 SUS	Solubility (Other)	Not available
Density	7.3 lb/gal (US	Physical Form	Liquid.

Safety Data Sheet

Material Name: AllFleet HD 15w40 CK4

Approximate)
Pour Point -3 °C (27 °F
Maximum) **Molecular Weight** Not available

Other Information

No additional information is available.

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition

Incompatible Materials

Avoid oxidizing agents.

Hazardous decomposition products

None under normal temperatures and pressures.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

No information on significant adverse effects.

Skin Contact

No information on significant adverse effects.

Eye Contact

No information on significant adverse effects.

Ingestion

No information on significant adverse effects.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Lubricating oils, petroleum, hydrotreated spent (64742-58-1)

Oral LD50 Rat >2000 mg/kg; Dermal LD50 Rabbit >4480 mg/kg

Distillates, petroleum, solvent-dewaxed heavy paraffinic (64742-65-0)

Oral LD50 Rat >15000 mg/kg (no deaths occurred); Dermal LD50 Rabbit >5000 mg/kg (no deaths occurred)

Inhalation LC50 Rat >2400 mg/m³ 4 h (no deaths occurred)

Distillates, petroleum, solvent-refined light paraffinic (64741-89-5)

Oral LD50 Rat >15 g/kg; Dermal LD50 Rabbit >5 g/kg; Inhalation LC50 Rat 2.18 mg/L 4 h

Distillates, petroleum, hydrotreated heavy paraffinic (64742-54-7)

Oral LD50 Rat >15 g/kg (no deaths occurred); Dermal LD50 Rabbit >5000 mg/kg (no deaths occurred)

Paraffin oils, petroleum, catalytic dewaxed heavy (64742-70-7)

Oral LD50 Rat >15000 mg/kg; Dermal LD50 Rabbit >5000 mg/kg

Safety Data Sheet

Material Name: AllFleet HD 15w40 CK4

Product Toxicity Data

Acute Toxicity Estimate

Dermal	> 2000 mg/kg
Oral	> 2000 mg/kg

Immediate Effects

No information on significant adverse effects.

Delayed Effects

Repeated exposure may cause skin dryness or cracking.

Irritation/Corrosivity Data

May cause slight skin and respiratory irritation.

Respiratory Sensitization

No information available for the product.

Dermal Sensitization

No information available for the product.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA

Germ Cell Mutagenicity

No information available for the product.

Tumorigenic Data

No data available

Reproductive Toxicity

No information available for the product.

Specific Target Organ Toxicity - Single Exposure

No information on significant adverse effects.

Specific Target Organ Toxicity - Repeated Exposure

No information on significant adverse effects.

Aspiration hazard

No information available for the product.

Medical Conditions Aggravated by Exposure

Individuals with pre-existing respiratory tract (nose, throat, and lungs), eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

Section 12 - ECOLOGICAL INFORMATION
--

Ecotoxicity

Toxic to aquatic life.

Component Analysis - Aquatic Toxicity

Lubricating oils, petroleum, hydrotreated spent	64742-58-1
Fish:	LC50 96 h Brachydanio rerio 79.6 mg/L [semi-static]; LC50 96 h Pimephales promelas 3.2 mg/L [semi-static]
Distillates, petroleum, solvent-dewaxed heavy paraffinic	64742-65-0
Fish:	LC50 96 h Oncorhynchus mykiss >5000 mg/L
Invertebrate:	EC50 48 h Daphnia magna >1000 mg/L IUCLID

Safety Data Sheet

Material Name: AllFleet HD 15w40 CK4

Distillates, petroleum, solvent-refined light paraffinic	64741-89-5
Fish:	LC50 96 h Oncorhynchus mykiss >5000 mg/L
Invertebrate:	EC50 48 h Daphnia magna >1000 mg/L IUCLID
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7
Fish:	LC50 96 h Oncorhynchus mykiss >5000 mg/L
Invertebrate:	EC50 48 h Daphnia magna >1000 mg/L IUCLID

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Other Toxicity

No additional information is available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components

Section 14 - TRANSPORT INFORMATION

US DOT Information:

Additional information: Not regulated as dangerous goods.

IATA Information:

Additional information: Not regulated as a hazardous material.

TDG Information:

Additional information: Not regulated as dangerous goods.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: No **Chronic Health:** No **Fire:** No **Pressure:** No **Reactivity:** No

Safety Data Sheet

Material Name: AllFleet HD 15w40 CK4

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Distillates, petroleum, solvent-refined light paraffinic	64741-89-5	No	Yes	No	No	No
Paraffin oils, petroleum, catalytic dewaxed heavy	64742-70-7	No	Yes	No	No	No

Not listed under California Proposition 65

Canada Regulations

Canadian WHMIS Ingredient Disclosure List (IDL)

The components of this product are either not listed on the IDL or are present below the threshold limit listed on the IDL.

Component Analysis - Inventory

Lubricating oils, petroleum, hydrotreated spent (64742-58-1); Distillates, petroleum, solvent-dewaxed heavy paraffinic (64742-65-0); Phosphorodithioic acid, mixed O,O-bis(sec-butyl and isooctyl) esters, zinc salts (113706-15-3); Distillates, petroleum, solvent-refined light paraffinic (64741-89-5); Distillates, petroleum, hydrotreated heavy paraffinic (64742-54-7) Paraffin oils, petroleum, catalytic dewaxed heavy (64742-70-7)

US	CA
Yes	DSL

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 1 Fire: 1 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

New SDS 11/29/2016

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CFR - Code of Federal Regulations (US); CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CPR - Controlled Products Regulations; DOT - Department of Transportation; DSL - Domestic Substances List; EPA - Environmental Protection Agency; F - Fahrenheit; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NDSL - Non-Domestic Substance List (Canada); NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; RCRA - Resource Conservation and Recovery Act; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; WHMIS - Workplace Hazardous Materials Information System (Canada).

Safety Data Sheet

Material Name: AllFleet HD 15w40 CK4

Other Information

Disclaimer:

This Safety Data Sheet is prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012. The information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS

SAFETY DATA SHEET

Review Date: 05/28/2015

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: ArmorTrac Extended Life Coolant 50/50 Antifreeze
Product #: 953825050EL

MANUFACTURER/DISTRIBUTOR:
RelaDyne, LLC
9395 Kenwood Rd, Suite 104
Blue Ash, OH 45242
888-830-3156
www.reladyne.com

EMERGENCY NUMBER: INFOTRAC 800-535-5053

SECTION 2 HAZARDS IDENTIFICATION

Classification of the Substance or Mixture**Classification (GHS-US)**

Acute Tox. 4 (Oral) H302

STOT RE 2 H373

Label Elements**GHS-US Labeling****Hazard Pictograms (GHS-US) :**

GHS07



GHS08

Signal Word (GHS-US) : Warning

Hazard Statements (GHS-US) : H302 - Harmful if swallowed
H373 - May cause damage to organs (Kidney) through prolonged or repeated exposure (Oral)

Precautionary Statements (GHS-US) : P260 - Do not breathe mist, spray, vapors.
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P314 - Get medical advice and attention if you feel unwell.
P330 - If swallowed, rinse mouth.
P501 - Dispose of contents/container according to local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Other Hazards Not Contributing to the Classification: Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

NFPA RATING

Health Hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

Fire Hazard : 1 - Must be preheated before ignition can occur.

Reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

CAS#	INGREDIENTS	% (w/w)	CLASSIFICATION (GHS-US)
107-21-1	Ethylene Glycol	45-55	Acute Tox. 4(oral), H302 STOT RE 2, H373
7732-18-5	Deionized water	45-55	non-hazardous as defined by 29 CFR 1910.1200 (OSHA)
	Proprietary Additives (Trade Secret)	1-5	non-hazardous as defined by 29 CFR 1910.1200 (OSHA)

SECTION 4 FIRST AID MEASURES

Inhalation: Move victim to fresh air and provide oxygen if breathing is difficult. Get medical attention.

Skin: Flush exposed area with water and follow by washing with soap if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment. If skin irritation persists after washing, get medical advice.

Eye: Flush eyes with plenty of water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision or swelling occur, transport to nearest medical facility for additional treatment. If eye irritation persists, seek medical advice.

Ingestion: DO NOT take internally. If swallowed, IMMEDIATELY contact a poison control center, emergency treatment center, or physician. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Physician's Note: IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT!

Ethylene Glycol (EG) and Diethylene Glycol (DEG) intoxication may initially produce behavioral changes, drowsiness, vomiting, diarrhea, thirst, and convulsions. EG and DEG are nephrotoxic. End stages of poisoning may include renal damage or failure with acidosis. Supportive measures, supplemented with hemodialysis if indicated, may limit the progression and severity of toxic effects. May cause cardiopulmonary effects. For ETHYLENE GLYCOL POISONING, intravenous ethanol is a recognized antidotal treatment; other antidotal treatments also exist for ethylene glycol poisoning.

SECTION 5 FIRE FIGHTING MEASURES

Flash Point [Method]: >388 °F/>198 °C [Cleveland Open Cup]

Extinguishing Media: Prevent run off from fire control or dilution from entering streams, sewers or drinking water supply. Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO₂) to extinguish flames. Do not use a direct stream of water.

Fire Fighting Instructions: Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus. This material is non-flammable.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: May burn although not readily ignitable. Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

Spill Management: Shut off source of leak if safe to do so. Dike and contain spill.

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

Environmental Precautions: Prevent entry to sewers and public waters.

Reporting: U.S. regulations require reporting releases of this material to the environment which exceed the reportable quantity to the National Response Center at (800)424-8802.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not ingest. Avoid prolonged or repeated contact with eyes, skin or clothing. Avoid breathing of vapors, fumes or mists. Use with adequate ventilation. Wash thoroughly after handling. Avoid heat, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. Ground all handling equipment to prevent sparking. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Storage: Do not store in open or unlabeled containers. Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.

Container Warnings: Keep containers closed when not in use. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

Incompatible Materials: Strong Acids, Strong Bases, Strong Oxidizers

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ethylene Glycol
Ethylene Glycol

ACGIH TLV
OSHA PEL - 1989(revoked)

Ceiling: 100 mg/m³
Ceiling: 50 ppmv

EXPOSURE CONTROLS

Provide adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Eye washes and showers for emergency use. When using product, do not eat, drink, or smoke.

PERSONAL PROTECTION

Personal protective equipment (PPE) selections vary based on potential exposure conditions such as handling practices, concentration and ventilation. Information on the selection of eye, skin and respiratory protection for use with this material is provided below.

Eye Protection:

Chemical Goggles or Safety glasses with side shields - If liquid contact is likely.

Skin Protection:

Use protective clothing which is chemically resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

Published literature, test data and/or glove and clothing manufacturers indicate the best protection is provided by: Neoprene, or Nitrile Rubber

Respiratory Protection:

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:**For Mist:**

Air Purifying, R or P style NIOSH approved respirator.

For Vapors:

Air Purifying, R or P style prefilter & organic cartridge, NIOSH approved respirator. Self-contained breathing apparatus for use in environments with unknown concentrations or emergency situations.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odor:	Bright red liquid. Mild sweet odor.
Substance Chemical Family:	Ethylene Glycols
Boiling Point:	265 °F
Flash Point:	>388 °F/>198 °C [Cleveland Open Cup]
Freezing Point:	-34 °F
pH:	9.5 – 10.7
Specific Gravity:	1.11 – 1.13
Solubility:	Soluble in water
NOTE:	The freezing and boiling point values reflect a 50% solution in water at atmospheric pressure.

SECTION 10 REACTIVITY AND STABILITY

Reactivity:	Reacts with strong oxidizers, increase risk of fire
Chemical Stability:	Stable under recommended handling and storage conditions (see section 7)
Incompatible Materials:	Strong Acids, Strong Bases, Strong Oxidizers

Hazardous Decomposition Products:

Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases will evolve when this material undergoes pyrolysis or combustion. Acids, aldehydes, carbon monoxide, carbon dioxide, ketones and other unidentified organic compounds may be formed upon combustion.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Toxicity:	Dermal LD50 9.5 g/kg (Rabbit) Oral LD50 4.7 mg/kg (Rat)		
Carcinogenicity Classification:	Antifreeze/Coolant		
NTP: No	IARC: Not Reviewed	ACGIH: No	OSHA: No
Cardiovascular System:	Ingestion of large doses can cause metabolic acidosis that results in cardiopulmonary effects.		

Developmental Toxicity:	Oral exposure of pregnant rats and mice to ethylene glycol has produced birth defects in the offspring.
Kidney:	Ingestion of ethylene glycol can cause bladder stones and kidney damage which can be fatal.
Liver:	Prolonged and repeated ingestion of ethylene glycol has produced liver damage in rats.
Lungs:	Ingestion of large doses can cause metabolic acidosis that results in cardiopulmonary effects.
Whole Animal:	Orally, humans are more sensitive to ethylene glycol than rodents. The reported lethal dose range for an adult human is 1 -2 ml/kg, or 1/4 to 1/2 cup.

POTENTIAL HEALTH EFFECTS

Inhalation:	In applications where vapors (caused by high temperature) or mists (caused by mixing or spraying) are created, breathing may cause a mild burning sensation in the nose, throat and lungs.
Eye Irritation:	If irritation occurs, a temporary burning sensation, minor redness, swelling, and/or blurred vision may result.
Skin Contact:	May cause slight irritation of the skin. If irritation occurs, a temporary burning sensation and minor redness and/or swelling may result. Other adverse effects not expected from brief skin contact.
Ingestion:	May be harmful or fatal if swallowed. Contains ethylene glycol and/or diethylene glycol which are toxic when swallowed. A lethal dose for an adult is 1 ml per kilogram or about 4 ounces (1/2 cup). Severe kidney damage can occur as a result of ingestion. Ingestion may result in nausea, vomiting and abdominal cramps. Metabolic acidosis and cardiopulmonary effects can occur following ingestion. May cause Central Nervous System (CNS) depression.
Other Effects:	Refer to Section 11, Toxicological Information, for specific information on the following effects: Developmental Toxicity
Primary Target Organs:	The following organs and/or organ systems may be damaged by overexposure to this material and/or its components: Cardiovascular System, Kidney, Liver, Lungs
Signs and Symptoms:	May cause cardiopulmonary effects including rapid respiration and heartbeat, cyanosis and in severe cases, pulmonary edema and pneumonia. Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness and nausea. In extreme cases, unconsciousness and death may occur. Kidney damage may be indicated by changes in urine output or appearance, pain upon urination or in the lower back or general edema (swelling from fluid retention). Liver damage may be indicated by loss of appetite, jaundice (yellowish skin and eye color), fatigue and sometimes pain and swelling in the upper right abdomen.

Aggravated Medical Conditions: Pre-existing eye, skin, respiratory, liver and kidney disorders and may be aggravated by exposure to this product.

SECTION 12 ECOLOGICAL INFORMATION

Toxicity**Ethylene glycol (107-21-1)**

LC50 Fish 1	41000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)(rainbow trout)
EC50 Daphnia 1	46300 mg/l (Exposure time: 48 h - Species: Daphnia magna)(water flea)
EC50 Other Aquatic Organisms 1	6500 - 13000 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata)
LC 50 Fish 2	14 - 18 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)

Persistence and Degradability: Not available

Bioaccumulative Potential**Ethylene glycol (107-21-1)**

Log Pow -1.93

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13 DISPOSAL CONSIDERATIONS

RCRA Information:

Under RCRA, it is the responsibility of the user of the material to determine, at the time of the disposal, whether the material meets RCRA criteria for hazardous waste. This is because material uses, transformations, mixtures, processes, etc. may affect the classification. Refer to the latest EPA, state and local regulations regarding proper disposal. Follow all applicable laws and regulations. Used antifreeze recycling is recommended. Do not drain on the ground or into storm drainage systems. Do not dispose in sanitary sewer systems except where permitted by law.

SECTION 14 TRANSPORT INFORMATION

US Department of Transportation Classification:

This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less. If shipped in a container of over 119 gallon capacity then the DOT information must be accompanied with RQ notation, or, an otherwise 'Not Regulated' product will be classified as Environmentally Hazardous (solid/liquid) N.O.S., Class 9, Packing group III unless the product qualifies for the petroleum exemption (49 CFR 171.8).

Hazardous Substance/Material RQ: Ethylene glycol / 10539.7068 lbs

International Air Transport Association

Hazard Class/Division: 9 (Miscellaneous)
Identification Number: UN3082
Packing Group: III
Proper Shipping Name: Environmentally Hazardous Substances, liquid, N.O.S.
Technical Name(s): Ethylene Glycol

International Maritime Organization Classification

Hazard Class/Division: 9 (Miscellaneous)
Identification Number: UN3082
Packing Group: III
Proper Shipping Name: Environmentally Hazardous Substances, Liquid, N.O.S.
Technical Name(s): Ethylene Glycol

SECTION 15 REGULATORY INFORMATION

FEDERAL REGULATORY STATUS

OSHA Classification: Product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Comprehensive Environmental Release, Compensation & Liability Act (CERCLA):

Ethylene Glycol: RQ 5,000 lbs Reportable Spill => 10,540 lbs or 1,264 gal

Ozone Depleting Substances (40 CFR 82 Clean Air Act):

This material does not contain nor was it directly manufactured with any Class I or Class II ozone depleting substances.

Superfund Amendment & Reauthorization Act (SARA) Title III:

There are no components in this product on the SARA 302 list.

SARA Hazard Categories (311/312):

Immediate Health: YES**Delayed Health:** YES**Fire:** NO**Pressure:** NO**Reactivity:** NO**SARA Toxic Release Inventory (TRI) (313):**

Ethylene Glycol

Toxic Substances Control Act (TSCA) Status:

All component(s) of this material is (are) listed on the EPA/TSCA Inventory of Chemical Substances.

Other Chemical Inventories:

Component(s) of this material is (are) listed on the Australian AICS, Canadian DSL, Chinese Inventory, European EINECS, Korean Inventory, Philippines PICCS.

State Regulation:

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the SDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

US State Regulations**Ethylene glycol (107-21-1)**

U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Illinois - Toxic Air Contaminants
U.S. - Louisiana - Reportable Quantity List for Pollutants
U.S. - Maine - Air Pollutants - Hazardous Air Pollutants
U.S. - Massachusetts - Allowable Ambient Limits (AALs)
U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)
U.S. - Massachusetts - Drinking Water Guidelines
U.S. - Massachusetts - Right To Know List
U.S. - Massachusetts - Threshold Effects Exposure Limits (TELs)
U.S. - Massachusetts - Toxics Use Reduction Act
U.S. - Michigan - Occupational Exposure Limits - Ceilings
U.S. - Michigan - Polluting Materials List
U.S. - Minnesota - Groundwater Health Risk Limits
U.S. - Minnesota - Hazardous Substance List
U.S. - Minnesota - Permissible Exposure Limits - Ceilings
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - New Jersey - Environmental Hazardous Substances List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New Jersey - Water Quality - Ground Water Quality Criteria
U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs)
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual
U.S. - South Carolina - Toxic Air Pollutants - Maximum Allowable Concentrations
U.S. - South Carolina - Toxic Air Pollutants - Pollutant Categories
U.S. - Tennessee - Occupational Exposure Limits - Ceilings
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Vermont - Permissible Exposure Limits - Ceilings
U.S. - Washington - Permissible Exposure Limits - Ceilings
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions from Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions from Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions from Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants – All Sources – Emissions from Stack Height Less Than 25 Feet

SECTION 16 OTHER INFORMATION

Third Revision**Review Date:** 05/28/2015**Revision Date:** 05/28/2015**Revisions since last change (discussion):**

This Safety Data Sheet (SDS) has been prepared in accordance with SDS requirements of the OSHA Hazardous Communication Standard 29 CFR 1910.1200. We encourage you to take the opportunity to read the SDS and review the information contained therein.

GHS Full Text Phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H373	May cause damage to organs through prolonged or repeated exposure
H402	Harmful to aquatic life

DISCLAIMER OF LIABILITY

The information in this SDS was obtained from sources which we believe are reliable.
HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED, REGARDING ITS CORRECTNESS.

The conditions or methods of handling, storage, use and disposal of the product are beyond our



control and may be beyond our knowledge. ***FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.***

This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

Safety Data Sheet

Issue Date: 01-April-2015

Revision Date: 02-Dec-2014

1. IDENTIFICATION

Product Identifier

Product Name Champion -50 Degree Premium Red RV Anti-freeze

Other means of identification

SDS # CPDR-015

Recommended use of the chemical and restrictions on use

Recommended Use RV anti-freeze.

Details of the supplier of the safety data sheet

Supplier Address

Champion Packaging & Distribution
1840 International pkwy
Woodridge, IL 60517

Emergency Telephone Number

Company Phone Number 630-972-0100
Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Clear, red liquid

Physical State Liquid

Odor Odorless

Classification

This chemical does not meet the hazardous criteria set forth by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

3. COMPOSITION/INFORMATION ON INGREDIENTS

The product contains no substances which, at their given concentration, are considered to be hazardous to health. However, additional component information is available in subsequent sections of this SDS.

4. FIRST-AID MEASURES

First Aid Measures

- | | |
|---------------------|--|
| Eye Contact | Immediately flush eyes with large amounts of water for 20-30 minutes, lifting lower and upper lids. Get medical attention as soon as possible. Obtain medical attention if pain, blinking, tearing or redness persist. |
| Skin Contact | Wash thoroughly in flowing water or shower. Promptly remove any soiled clothing and wash thoroughly before re-use. |
| Inhalation | If overcome by exposure, remove person to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention immediately. |
| Ingestion | If large quantity is swallowed, give a pint of lukewarm water if victim is completely conscious and alert. If large quantities are consumed, induce vomiting. Obtain emergency medical attention immediately. |

Most important symptoms and effects

Symptoms	May cause minor eye irritation. Repeated, prolonged exposure may cause slight flaking, tenderness and softening of the skin. Material and/or its emissions may aggravate pre-existing eye disease.
-----------------	--

Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
---------------------------	------------------------

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Carbon dioxide (CO₂). Dry chemical. Alcohol foam. Water spray (fog).

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Not determined.

Hazardous Combustion Products Carbon monoxide and other toxic vapors.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Fight fire from a distance or protected location. Heat may build up pressure and rupture closed containers. Liquid may form slippery film. Use water spray or fog for cooling; solid stream may spread fire as burning liquid will float on water. Avoid frothing/steam explosion. Notify authorities if liquid enters sewers/public waters.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions Use personal protective equipment as required.

Environmental Precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Prevent flow to sewers and public waters as it may contaminate said water. Restrict water usage to prevent slip/fall hazard. Soak up small spills with inert solids. Dike and recover large land spills. Notify the proper authorities if product enters any waterway.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in tightly closed and properly vented containers, away from heat, sparks, open flame and strong oxidizing agents.

Incompatible Materials Strong alkalis. Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Controls Adequate general ventilation is required; local exhaust is recommended.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Chemical splash goggles or full face shield must be worn when the possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.

Skin and Body Protection Wear suitable protective clothing.

Respiratory Protection No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Odor	Odorless
Appearance	Clear, red liquid	Odor Threshold	Not determined
Color	Clear red		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	8.0	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	187.8 °C / 370 °F	
Flash Point	103.3 °C / 218 °F	
Evaporation Rate	Slight	(butyl acetate = 1)
Flammability (Solid, Gas)	Liquid-Not applicable	
Upper Flammability Limits	12.5	
Lower Flammability Limit	2.6	
Vapor Pressure	<0.1 mmHg	@ 20°C (68°F)
Vapor Density	2.6	(Air=1)
Specific Gravity	1.028	(Water = 1)
Water Solubility	Completely soluble	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization Not expected to occur.**Conditions to Avoid**

Heat, flames and sparks. Incompatible Materials.

Incompatible Materials

Strong alkalis. Strong oxidizing agents.

Hazardous Decomposition Products

Carbon monoxide and other toxic vapors.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Product Information****Eye Contact** Avoid contact with eyes.**Skin Contact** Avoid contact with skin.**Inhalation** Do not inhale.**Ingestion** Do not ingest.**Component Information**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Propylene Glycol 57-55-6	= 20000 mg/kg (Rat)	= 20800 mg/kg (Rabbit)	-

Information on physical, chemical and toxicological effects**Symptoms** Please see section 4 of this SDS for symptoms.**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Carcinogenicity** This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.**Numerical measures of toxicity**

Not determined

12. ECOLOGICAL INFORMATION**Ecotoxicity**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Propylene Glycol 57-55-6	19000: 96 h Pseudokirchneriella subcapitata mg/L EC50	51600: 96 h Oncorhynchus mykiss mg/L LC50 static 41 - 47: 96 h Oncorhynchus mykiss mL/L LC50 static 51400: 96 h Pimephales promelas mg/L LC50 static 710: 96 h Pimephales promelas mg/L LC50		10000: 24 h Daphnia magna mg/L EC50 1000: 48 h Daphnia magna mg/L EC50 Static

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Not determined

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

Not regulated

IATA

Not regulated

IMDG

Not regulated

15. REGULATORY INFORMATION

International Inventories

All ingredients are listed or exempt from listing on Chemical Substance Inventory

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Propylene Glycol 57-55-6	X		X

16. OTHER INFORMATION

NFPA	Health Hazards	Flammability	Instability	Special Hazards
	0	1	0	Not determined
HMIS	Health Hazards	Flammability	Physical Hazards	Personal Protection
	0	0	0	B

Issue Date: 01-April-2015
 Revision Date: 02-Dec-2014
 Revision Note: New format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo 400 SAE 30, 40, 50

Product Use: Diesel Engine Oil
Product Number(s): 235118, 235119, 235120

Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight
Zinc alkyl dithiophosphate	68649-42-3	0 - < 2.5 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed Not Applicable

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying

non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Zinc alkyl dithiophosphate	Not Applicable	--	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Varies depending on specification

Physical State: Liquid

Odor: Petroleum odor

Odor Threshold: No data available

pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)

Vapor Density (Air = 1): >1

Initial Boiling Point: 315°C (599°F)

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable

Melting Point: Not Applicable

Specific Gravity: 0.87 - 0.9 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)

Density: 0.9 kg/l @ 15°C (59°F) (Typical)

Viscosity: 11.1 mm²/s @ 100°C (212°F) (Min)

Decomposition temperature: No data available

Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 210 °C (410 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:

Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

- 01-1=IARC Group 1
- 01-2A=IARC Group 2A
- 01-2B=IARC Group 2B
- 02=NTP Carcinogen
- 03=EPCRA 313
- 04=CA Proposition 65
- 05=MA RTK
- 06=NJ RTK
- 07=PA RTK

Zinc alkyl dithiophosphate 03, 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), KECl (Korea), PICCS (Philippines), TSCA (United States). One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

One or more components does not comply with the following chemical inventory requirements: ENCS (Japan).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : ENGINE OIL 1 - ENG1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 3, 16.

Revision Date: AUGUST 13, 2015

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code

API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo ELC Antifreeze/Coolant - Premixed 50/50

Product Use: Antifreeze/Coolant

Product Number(s): 227811

Company Identification

Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Target organ toxicant (repeated exposure): Category 2. Reproductive toxicant (developmental): Category 2.



Signal Word: Warning

Health Hazards: Suspected of damaging the unborn child.

Target Organs: May cause damage to organs (Kidney) through prolonged or repeated exposure.

PRECAUTIONARY STATEMENTS:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Use personal protective equipment as required.

Response: Get medical advice/attention if you feel unwell. IF exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Ethylene Glycol	107-21-1	34 - < 80 %wt/wt
Sodium 2-ethylhexanoate	19766-89-3	0.1 - < 3 %wt/wt

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: May be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:

Reproduction and Birth Defects: Contains material that may cause harm to the unborn child if swallowed based on animal data.

Target Organs: Contains material that may cause damage to the following organ(s) following repeated inhalation at concentrations above the recommended exposure limit: Kidney Risk depends on duration and level of exposure. See Section 11 for additional information.

Indication of any immediate medical attention and special treatment needed Not Applicable

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames. Dry Chemical, CO2, AFFF Foam or alcohol resistant foam.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Sodium.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Do not taste or swallow antifreeze or solution. Keep out of the reach of children and animals.

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling. Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

General Storage Information: Do not store in open or unlabeled containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits. Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Natural rubber, Neoprene, Nitrile Rubber, Polyvinyl Chloride (PVC or Vinyl).

Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an

approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors, Dusts and Mists.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Ethylene Glycol	ACGIH	--	--	100 mg/m3	--
Sodium 2-ethylhexanoate	Not Applicable	--	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

- Color:** Red
- Physical State:** Liquid
- Odor:** Faint or Mild
- Odor Threshold:** No data available
- pH:** 8.10 - 8.50
- Vapor Pressure:** No data available
- Vapor Density (Air = 1):** 2.10
- Initial Boiling Point:** 109°C (228.2°F)
- Solubility:** Soluble in water.
- Freezing Point:** -37°C (-34.6°F)
- Melting Point:** Not Applicable
- Specific Gravity:** 1.08 @ 15.6°C (60.1°F)
- Viscosity:** No data available
- Coefficient of Therm. Expansion / °F:** No data available
- Evaporation Rate:** No data available
- Decomposition temperature:** No data available
- Octanol/Water Partition Coefficient:** No data available

FLAMMABLE PROPERTIES:

- Flammability (solid, gas):** No Data Available
- Flashpoint:** Not Applicable
- Autoignition:** No data available
- Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: Ketones (Elevated temperatures), Aldehydes (Elevated temperatures)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains ethylene glycol (EG). The toxicity of EG via inhalation or skin contact is expected to be slight at room temperature. The estimated oral lethal dose is about 100 cc (3.3 oz.) for an adult human. Ethylene glycol is oxidized to oxalic acid which results in the deposition of calcium oxalate crystals mainly in the brain and kidneys. Early signs and symptoms of EG poisoning may resemble those of alcohol intoxication. Later, the victim may experience nausea, vomiting, weakness, abdominal and muscle pain,

difficulty in breathing and decreased urine output. When EG was heated above the boiling point of water, vapors formed which reportedly caused unconsciousness, increased lymphocyte count, and a rapid, jerky movement of the eyes in persons chronically exposed. When EG was administered orally to pregnant rats and mice, there was an increase in fetal deaths and birth defects. Some of these effects occurred at doses that had no toxic effects on the mothers. We are not aware of any reports that EG causes reproductive toxicity in human beings.

2-Ethylhexanoic acid (2-EXA) caused an increase in liver size and enzyme levels when repeatedly administered to rats via the diet. When administered to pregnant rats by gavage or in drinking water, 2-EXA caused teratogenicity (birth defects) and delayed postnatal development of the pups. Additionally, 2-EXA impaired female fertility in rats. Birth defects were seen in the offspring of mice who were administered sodium 2-ethylhexanoate via intraperitoneal injection during pregnancy.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from products of a similar structure and composition.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or

quantity-specific shipping requirements.

DOT Shipping Description: PROPRIETARY ANTIFREEZE PREPARATION IN NON-BULK PACKAGING; NOT REGULATED FOR TRANSPORT UNDER 49 CFR

Additional Information: Bulk shipments containing a reportable quantity (RQ, 5000 pounds or more) of ethylene glycol in a single packaging are transported as hazardous material. The shipping description is: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL CONTAINS BITTERANT), 9, III, RQ (ETHYLENE GLYCOL)

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: Anti-freeze Preparations, Proprietary; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION
--

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	YES
	2. Delayed (Chronic) Health Effects:	YES
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Ethylene Glycol 04, 05, 07

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: Refer to components listed in Section 3.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 2 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 2* Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1-16
Revision Date: FEBRUARY 24, 2016

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own

determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo Grease EP 0, 00, 1, 2

Product Use: Grease

Product Number(s): 235208, 235209, 235211, 235212

Company Identification

Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Acute aquatic toxicant: Category 2. Chronic aquatic toxicant: Category 3.

Environmental Hazards: Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

Prevention: Avoid release to the environment.

Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %wt/wt
Zinc dialkyldithiophosphate	68649-42-3	1 - 5 %wt/wt
Amines, polyethylenepoly-, reaction products with succinic anhydride polyisobutenyl derivs., borated	134758-95-5	1 - < 2.5 %wt/wt

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at

airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Clean up spills immediately, observing precautions in Exposure Controls/Personal Protection section. Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this

material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection:

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 -	OSHA Z-1	5 mg/m3	--	--	--

C50)					
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Zinc dialkyldithiophosphate	Not Applicable	--	--	--	--
Amines, polyethylenepoly-, reaction products with succinic anhydride polyisobutenyl derivs., borated	Not Applicable	--	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Blue

Physical State: Semi-solid

Odor: Petroleum odor

Odor Threshold: No data available

pH: Not Applicable

Vapor Pressure: <0.01 mmHg Maximum @ 100 °C (212 °F)

Vapor Density (Air = 1): >1 Minimum

Initial Boiling Point: 260°C (500°F) Minimum

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable

Melting Point: 240°C (464°F) (Min)

Specific Gravity: 0.91 @ 15.6°C (60.1°F)

Viscosity: 15 mm²/s @ 100°C (100°F) Minimum

Evaporation Rate: No data available

Decomposition temperature: No data available

Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 200 °C (392 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for similar materials.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for similar materials.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).



SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects:	NO
2. Delayed (Chronic) Health Effects:	NO
3. Fire Hazard:	NO
4. Sudden Release of Pressure Hazard:	NO
5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Amines, polyethylenepoly-, reaction products with 06
succinic anhydride polyisobutenyl derivs., borated
Zinc dialkyldithiophosphate 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Grease)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 3, 16
Revision Date: June 28, 2016

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo Heavy Duty EP 1, 2

Product Use: Grease
Product Number(s): 222206, 222207
Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Acute aquatic toxicant: Category 3. Chronic aquatic toxicant: Category 3.

Environmental Hazards: Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

Prevention: Avoid release to the environment.

Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %wt/wt

Distillates, hydrotreated middle	64742-46-7	10 - 30 %weight
Zinc dialkyldithiophosphate	68649-42-3	1 - 5 %wt/wt
Phosphoric acid ester amine salt	Mixture	0.1 - 1 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE SYMPTOMS AND HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Not classified.

Indication of any immediate medical attention and special treatment needed

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper

handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Clean up spills immediately, observing precautions in Exposure Controls/Personal Protection section. Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Red

Physical State: Semi-solid

Odor: Petroleum odor

Odor Threshold: No data available

pH: Not Applicable

Vapor Pressure: <0.01 mmHg Maximum @ 37.8 °C (100 °F)

Vapor Density (Air = 1): >1 Minimum

Initial Boiling Point: 315°C (599°F) Minimum

Solubility: Soluble in hydrocarbon solvents; insoluble in water.

Freezing Point: Not Applicable

Melting Point: 233°C (451.4°F) (Min)

Specific Gravity: 1 g/ml

Viscosity: 22 mm²/s @ 100°C (212°F) Minimum

Evaporation Rate: No data available

Decomposition temperature: No Data Available

Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: 274 °C (525 °F) (Estimated)

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: This material is not expected to react.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for similar materials.
Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for similar materials.
Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials.
Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials.
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials.
Acute Toxicity Estimate: Not Determined
Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.
Carcinogenicity: The hazard evaluation is based on data for components or a similar material.
Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.
Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.
Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown

relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment. The ecotoxicity hazard is based on data for a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on data for the components. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects:	NO
2. Delayed (Chronic) Health Effects:	NO
3. Fire Hazard:	NO
4. Sudden Release of Pressure Hazard:	NO
5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.
 Zinc dialkyldithiophosphate 03, 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), IECSC (China), PICCS (Philippines), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: ENCS (Japan), KECI (Korea).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Grease)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : GREASE 1 - GRS1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1-16

Revision Date: JUNE 26, 2014

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit

GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo TorqForce SAE 30, 50, 10W

Product Use: Drive Train Fluid

Product Number(s): 254601, 254602, 254603, 293105, 293106, 293107

Synonyms: Delo TorqForce SAE 10W ISOCLEAN Certified, Delo TorqForce SAE 30 ISOCLEAN Certified, Delo TorqForce SAE 50 ISOCLEAN Certified

Company Identification

Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand.

Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Unusual Fire Hazards: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed. Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty

container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Varies depending on specification

Physical State: Liquid

Odor: Petroleum odor

Odor Threshold: No data available

pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)

Vapor Density (Air = 1): >1

Initial Boiling Point: No data available

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable

Melting Point: No data available

Specific Gravity: 0.88 - 0.91 @ 15.6°C (60.1°F)

Density: 0.8763 kg/l - 0.8953 kg/l @ 15°C (59°F)

Coefficient of Therm. Expansion / °F: No data available

Evaporation Rate: No data available

Decomposition temperature: No data available

Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 205 °C - 225 °C (401 °F - 437 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

Tetrapropenyl phenol (TPP), also known as dodecyl phenol, was tested in a rat oral gavage one-generation reproductive toxicity study (doses of 0, 5, 25, or 125 mg/kg/day) and a rat dietary two-generation reproductive toxicity study (doses of 0, 1.5, 15, or 75 mg/kg/day). Results from the one-generation study demonstrated reduced ovary weights and changes in male reproductive accessory organs (decreased organ weights, decreased secretions, and decreased epididymal sperm concentrations) at 25 mg/kg/day; 5 mg/kg/day was identified as the No Observed Adverse Effect Level (NOAEL). Results from the two-generation study demonstrated prolonged estrous cyclicity, reduced ovary weights, accelerated sexual maturation, decreased mean live litter size, decreased fertility rates, hypospermia, and reduced weights in male reproductive accessory organs at 75 mg/kg/day; 15 mg/kg/day was identified as the NOAEL.

Evaluation of these two primary studies of TPP (one- & two-generation reproductive toxicity studies), as well as supporting data from additional in-vivo & in-vitro studies of both TPP and substances containing TPP & TPP/calcium salts as an impurity resulted in a classification of TPP as a Category 1B under the criteria of the Globally Harmonized System and Regulation (EC) No 1907/2006 (presumed reproductive hazard to humans).

The studies were also evaluated to identify a valid & reliable specific concentration limit (SCL) for reproductive effects, below which reproductive toxicity would not be expected to occur. An SCL of 1.5 wt% TPP & TPP/calcium salts was derived based on the identified NOAEL from the rat dietary two-generation reproductive toxicity study, and confirmed by supporting studies of substances containing TPP as an impurity.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous

Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), KECI (Korea), PICCS (Philippines), TCSI (Taiwan), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Automatic transmission fluid)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT:

SECTION 07 - Precautionary Measures information was modified.
SECTION 08 - Personal Protective Equipment List information was modified.
SECTION 09 - Physical/Chemical Properties information was deleted.
SECTION 15 - Chemical Inventories information was modified.

Revision Date: January 25, 2017

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo XLC Antifreeze/Coolant - Premixed 50/50

Product Use: Antifreeze/Coolant

Product Number(s): 227077

Company Identification

Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Target organ toxicant (repeated exposure): Category 2. Reproductive toxicant (developmental): Category 2.



Signal Word: Warning

Health Hazards: Suspected of damaging the unborn child.

Target Organs: May cause damage to organs (Kidney) through prolonged or repeated exposure.

PRECAUTIONARY STATEMENTS:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Use personal protective equipment as required.

Response: Get medical advice/attention if you feel unwell. IF exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Ethylene Glycol	107-21-1	34 - < 80 %wt/wt
Sodium 2-ethylhexanoate	19766-89-3	0.1 - < 3 %wt/wt

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: May be harmful if swallowed.

Inhalation: Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:

Reproduction and Birth Defects: Contains material that may cause harm to the unborn child if swallowed based on animal data.

Target Organs: Contains material that may cause damage to the following organ(s) following repeated inhalation at concentrations above the recommended exposure limit: Kidney Risk depends on duration and level of exposure. See Section 11 for additional information.

Indication of any immediate medical attention and special treatment needed Not Applicable

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames. Dry Chemical, CO2, AFFF Foam or alcohol resistant foam.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Sodium.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Do not taste or swallow antifreeze or solution. Keep out of the reach of children and animals.

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Do not breathe vapor or fumes. Wash thoroughly after handling. Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

General Storage Information: Do not store in open or unlabeled containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits. Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Natural rubber, Neoprene, Nitrile Rubber, Polyvinyl Chloride (PVC or Vinyl).

Respiratory Protection: Determine if airborne concentrations are below the recommended occupational

exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors, Dusts and Mists.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Ethylene Glycol	ACGIH	--	--	100 mg/m3	--
Sodium 2-ethylhexanoate	Not Applicable	--	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

- Color:** Pink
- Physical State:** Liquid
- Odor:** Faint or Mild
- Odor Threshold:** No data available
- pH:** 8.30 - 8.80
- Vapor Pressure:** No data available
- Vapor Density (Air = 1):** >1 (Typical)
- Initial Boiling Point:** 109°C (228.2°F) (Estimated)
- Solubility:** Soluble in water.
- Freezing Point:** -37°C (-34.6°F) (Estimated)
- Melting Point:** Not Applicable
- Density:** 1.0705 kg/l - 1.0725 kg/l @ 15°C (59°F)
- Viscosity:** No data available
- Coefficient of Therm. Expansion / °F:** No data available
- Evaporation Rate:** No data available
- Decomposition temperature:** No data available
- Octanol/Water Partition Coefficient:** No data available

FLAMMABLE PROPERTIES:

- Flammability (solid, gas):** No Data Available
- Flashpoint:** Not Applicable
- Autoignition:** No data available
- Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: Aldehydes (Elevated temperatures), Ketones (Elevated temperatures)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains ethylene glycol (EG). The toxicity of EG via inhalation or skin contact is expected to be slight at room temperature. The estimated oral lethal dose is about 100 cc (3.3 oz.) for an adult human.

Ethylene glycol is oxidized to oxalic acid which results in the deposition of calcium oxalate crystals mainly in the brain and kidneys. Early signs and symptoms of EG poisoning may resemble those of alcohol intoxication. Later, the victim may experience nausea, vomiting, weakness, abdominal and muscle pain, difficulty in breathing and decreased urine output. When EG was heated above the boiling point of water, vapors formed which reportedly caused unconsciousness, increased lymphocyte count, and a rapid, jerky movement of the eyes in persons chronically exposed. When EG was administered orally to pregnant rats and mice, there was an increase in fetal deaths and birth defects. Some of these effects occurred at doses that had no toxic effects on the mothers. We are not aware of any reports that EG causes reproductive toxicity in human beings.

2-Ethylhexanoic acid (2-EXA) caused an increase in liver size and enzyme levels when repeatedly administered to rats via the diet. When administered to pregnant rats by gavage or in drinking water, 2-EXA caused teratogenicity (birth defects) and delayed postnatal development of the pups. Additionally, 2-EXA impaired female fertility in rats. Birth defects were seen in the offspring of mice who were administered sodium 2-ethylhexanoate via intraperitoneal injection during pregnancy.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from products of a similar structure and composition.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PROPRIETARY ANTIFREEZE PREPARATION IN NON-BULK PACKAGING; NOT REGULATED FOR TRANSPORT UNDER 49 CFR

Additional Information: Bulk shipments containing a reportable quantity (RQ, 5000 pounds or more) of ethylene glycol in a single packaging are transported as hazardous material. The shipping description is: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL CONTAINS BITTERANT), 9, III, RQ (ETHYLENE GLYCOL)

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	YES
	2. Delayed (Chronic) Health Effects:	YES
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Ethylene Glycol 04, 05, 07

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: Refer to components listed in Section 3.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 2 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 2* Flammability: 1 Reactivity: 0 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 15, 16

Revision Date: June 08, 2016

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use.

This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Meropa 68, 100, 150, 220, 320, 460, 680, 1000, 1500

Product Use: Industrial Gear Lubricant

Product Number(s): 219506, 219510, 219515, 219522, 219532, 219546, 219568, 277209, 277210, 277211, 277212, 277213, 277214, 277215, 277216, 277219, 278039, 278040, 278041, 278042, 278043, 278044, 278045, 278046, 278047

Synonyms: Meropa 100 ISOCLEAN Certified; Meropa 1000 ISOCLEAN Certified; Meropa 150 ISOCLEAN Certified; Meropa 1500 ISOCLEAN Certified; Meropa 220 ISOCLEAN Certified; Meropa 320 ISOCLEAN Certified; Meropa 460 ISOCLEAN Certified; Meropa 68 ISOCLEAN Certified; Meropa 680 ISOCLEAN Certified

Company Identification

Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed Not Applicable

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Aldehydes, Alkyl Mercaptans, Hydrogen Sulfide, Nitrogen, Phosphorus, Sulfur.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Brown

Physical State: Liquid

Odor: Petroleum odor

Odor Threshold: No data available



pH: Not Applicable
Vapor Pressure: <0.01 mmHg (Estimated) @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1 (Estimated)
Initial Boiling Point: No data available
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: No data available
Density: 0.87 kg/l - 0.92 kg/l @ 15°C (59°F)
Viscosity: 175 mm²/s - 1650 mm²/s @ 40°C (104°F)
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 215 °C (419 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product

components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE



Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Gear oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: SECTION 01 - Product Code(s) information was modified.
SECTION 05 - Fire Fighters Protection Measures information was modified.
SECTION 05 - Special hazards arising from the substance or mixture information was added.
SECTION 09 - Physical/Chemical Properties information was modified.

Revision Date: May 18, 2017

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency

SCBA - Self-Contained Breathing Apparatus	
---	--

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.
--

<p>The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use.</p> <p>This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.</p>

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Multifak EP 0, 1, 2

Product Use: Grease

Product Number(s): 219571, 219572, 274501, 274502, 274503

Company Identification

Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Acute aquatic toxicant: Category 3. Chronic aquatic toxicant: Category 3.

Environmental Hazards: Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

Prevention: Avoid release to the environment.

Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %wt/wt

Zinc dialkyldithiophosphate	68649-42-3	1 - 5 %wt/wt
Phosphoric acid ester, amine salt	Confidential	0.1 - 1 %wt/wt

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE SYMPTOMS AND HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Not classified.

Indication of any immediate medical attention and special treatment needed

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Clean up spills immediately, observing precautions in Exposure Controls/Personal Protection section. Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not get in eyes, on skin, or on clothing. DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Keep out of the reach of children. Wash thoroughly after handling.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually

provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber, Silver Shield.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Brown

Physical State: Semi-solid

Odor: Petroleum odor

Odor Threshold: No data available

pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 100 °C (212 °F)

Vapor Density (Air = 1): >1

Initial Boiling Point: 260°C (500°F)

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: No data available

Melting Point: 166°C (330.8°F) (Min)

Density: No data available

Viscosity: No data available

Evaporation Rate: No data available

Decomposition temperature: No Data Available

Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 200 °C (392 °F) (Min)

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: This material is not expected to react.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and

handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for similar materials.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for similar materials.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from products of a similar structure and composition.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.
 Zinc dialkyldithiophosphate 03, 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Grease)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : GREASE 1 - GRS1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1 - 16
Revision Date: JULY 14, 2014

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)

IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Multifak EP 000

Product Use: Grease

Product Number(s): 274508

Company Identification

Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	> 70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Unusual Fire Hazards: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Clean up spills immediately, observing precautions in Exposure Controls/Personal Protection section. Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed. Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid,

and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Red
Physical State: Semi-solid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1
Initial Boiling Point: No data available
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: No data available
Melting Point: 155°C (311°F) (Min)
Specific Gravity: 0.91 (Typical)
Density: No data available
Viscosity: 337 mm²/s @ 40°C (104°F) (Typical)
Evaporation Rate: Not Applicable
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Open Cup) > 150 °C (> 302 °F) (Min)

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.



PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1 03=EPCRA 313
01-2A=IARC Group 2A 04=CA Proposition 65
01-2B=IARC Group 2B 05=MA RTK
02=NTP Carcinogen 06=NJ RTK
 07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Grease)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: SECTION 03 - Composition information was modified.
SECTION 15 - Chemical Inventories information was modified.

Revision Date: September 05, 2017

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code

API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Open Gear Grease

Product Use: Grease
Product Number(s): 230002

Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Asphalt	8052-42-4	60 - 80 %wt/wt
Highly refined mineral oil (C15 - C50)	Mixture	10 - 30 %wt/wt

Graphite	7782-42-5	1 - 5 %wt/wt
Molybdenum disulphide	1317-33-5	1 - 5 %wt/wt

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper

handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Clean up spills immediately, observing precautions in Exposure Controls/Personal Protection section. Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber, Viton.

Respiratory Protection: No respiratory protection is normally required.
 If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Asphalt	ACGIH	.5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Graphite	ACGIH	2 mg/m3	--	--	--
Graphite	OSHA Z-1	5 mg/m3	--	--	--
Molybdenum disulphide	OSHA Z-1	5 mg/m3	--	--	--
Molybdenum disulphide	ACGIH	3 mg/m3	--	--	A3 as Mo

The ACGIH TLV is 0.5 mg/m3 as the benzene extractable portion of the inhalable fraction of asphalt fume. The TLV may also be determined by unspecified 'equivalent' methods. Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

- Color:** Black
- Physical State:** Semi-solid
- Odor:** Petroleum odor
- Odor Threshold:** No data available
- pH:** Not Applicable
- Vapor Pressure:** No data available
- Vapor Density (Air = 1):** >1
- Initial Boiling Point:** No data available
- Solubility:** Negligible
- Freezing Point:** Not Applicable
- Melting Point:** No data available
- Density:** 0.97
- Viscosity:** No data available
- Evaporation Rate:** No data available
- Decomposition temperature:** No data available
- Octanol/Water Partition Coefficient:** No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 204 °C (399 °F) (Min)

Autoignition: > 316 °C (> 601 °F)

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

There is concern about the carcinogenicity of chemical compounds found in asphalts. The International Agency for Research on Cancer (IARC) reviewed the carcinogenic potential of asphalts in 1985 and again



in 1987. At that time, they concluded there was inadequate evidence to decide that asphalts were carcinogenic to humans. Overall, findings from health monitoring studies of asphalt workers are not conclusive. However, asphalt fume condensates and certain chemical components of asphalt fume have been shown to cause cancer in mice when repeatedly applied to the skin and allowed to remain on the skin for a prolonged period of time. In addition, asphalt fume condensates have been shown to be weakly positive in Ames mutagenicity tests. Skin contact and breathing of fumes, mists and vapors should be reduced to a minimum.

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or

quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Asphalt	01-2B, 04, 05, 06, 07
Graphite	05, 07
Molybdenum disulphide	05, 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: ENCS (Japan).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Grease)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:
Label Category : GREASE 1 - GRS1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1-16.
Revision Date: APRIL 30, 2015

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Rando HDZ 32, 46, 68, 100

Product Use: Hydraulic Oil

Product Number(s): 254609, 254610, 254611, 273260, 273261, 273262, 273263

Synonyms: Rando HDZ 32 ISOCLEAN Certified; Rando HDZ 46 ISOCLEAN Certified; Rando HDZ 68 ISOCLEAN Certified

Company Identification

Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand.

Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Unusual Fire Hazards: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid,

and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless to yellow
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1
Initial Boiling Point: 315°C (599°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: No data available
Density: 0.8613 - 0.8746 kg/l @ 15°C (59°F)
Viscosity: 32 mm²/s @ 40°C (104°F) Minimum
Coefficient of Therm. Expansion / °F: Not Applicable
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 175 °C (347 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.



PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1 03=EPCRA 313
01-2A=IARC Group 2A 04=CA Proposition 65
01-2B=IARC Group 2B 05=MA RTK
02=NTP Carcinogen 06=NJ RTK
 07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TCSI (Taiwan), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Hydraulic oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT:

SECTION 08 - Occupational Exposure Limit Table information was modified.

Revision Date: February 13, 2017

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code

API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Regal R&O 22, 32, 46, 68, 100, 115, 150, 220, 320, 460, 680

Product Use: Turbine Oil

Product Number(s): 219341, 219342, 219343, 219344, 273209, 273210, 273211, 273212, 273213, 273214, 273215, 273275, 277311, 277312, 277313, 278034, 278035, 278036, 278038, 278048, 278049, 278050, 278051, 278052

Synonyms: Regal R&O 100 ISOCLEAN Certified; Regal R&O 115 ISOCLEAN Certified; Regal R&O 150 ISOCLEAN Certified; Regal R&O 22 ISOCLEAN Certified; Regal R&O 220 ISOCLEAN Certified; Regal R&O 32 ISOCLEAN Certified; Regal R&O 46 ISOCLEAN Certified; Regal R&O 68 ISOCLEAN Certified; Regal R&O 680 ISOCLEAN Certified

Company Identification

Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Acute aquatic toxicant: Category 3. Chronic aquatic toxicant: Category 3.

Environmental Hazards: Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

Prevention: Avoid release to the environment.

Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.



DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed Not Applicable

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly

returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Brown
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: <0.01 mmHg (Estimated) @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1 (Estimated)
Initial Boiling Point: 315°C (599°F) (Estimated)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: No data available
Density: 0.85 kg/l - 0.90 kg/l @ 15°C (59°F) (Typical)
Viscosity: 22 mm²/s - 612 mm²/s @ 40°C (104°F) Minimum
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 190 °C - 260 °C (374 °F - 500 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product

components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:

Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO



REGULATORY LISTS SEARCHED:

- 01-1=IARC Group 1
- 01-2A=IARC Group 2A
- 01-2B=IARC Group 2B
- 02=NTP Carcinogen
- 03=EPCRA 313
- 04=CA Proposition 65
- 05=MA RTK
- 06=NJ RTK
- 07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Lubricating oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: SECTION 01 - Product Code(s) information was modified.
SECTION 09 - Physical/Chemical Properties information was modified.

Revision Date: June 14, 2017

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code

API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Ulti-Plex Synthetic Grease EP

Product Use: Grease
Product Number(s): 250188
Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	1 - 5 %weight
Phenyl-1-naphthylamine	90-30-2	0.1 - < 1 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne

solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Clean up spills immediately, observing precautions in Exposure Controls/Personal Protection section. Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Phenyl-1-naphthylamine	Not Applicable	--	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

- Color:** Tan to dark
- Physical State:** Semi-solid
- Odor:** Petroleum odor
- Odor Threshold:** No data available
- pH:** Not Applicable
- Vapor Pressure:** <0.01 mmHg Maximum @ 37.8 °C (100 °F)
- Vapor Density (Air = 1):** >1 Minimum
- Initial Boiling Point:** 450°C (842°F) Minimum
- Solubility:** Soluble in hydrocarbons; insoluble in water
- Freezing Point:** No data available
- Melting Point:** 255°C (491°F) Minimum
- Density:** 0.87 kg/l @ 15°C (15°F)
- Viscosity:** Not Applicable
- Evaporation Rate:** No data available
- Decomposition temperature:** No data available
- Octanol/Water Partition Coefficient:** No data available

FLAMMABLE PROPERTIES:

- Flammability (solid, gas):** No Data Available
- Flashpoint:** (Cleveland Open Cup) > 250 °C (> 482 °F) Minimum
- Autoignition:** No data available
- Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: Alkyl Mercaptans (Elevated temperatures), Hydrogen Sulfide (Elevated temperatures)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for similar materials.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for similar materials.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms.

The product has not been tested. The statement has been derived from products of a similar structure and composition.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from products of a similar structure and composition.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:

Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects:	NO
2. Delayed (Chronic) Health Effects:	NO
3. Fire Hazard:	NO
4. Sudden Release of Pressure Hazard:	NO
5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), ENCS (Japan), IECSC (China), PICCS (Philippines), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: DSL (Canada), KECl (Korea).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Grease)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : GREASE 1 - GRS1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1 - 16
Revision Date: APRIL 30, 2015

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental	IMO/IMDG - International Maritime Dangerous Goods

Industrial Hygienists	Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Ursa Super Plus EC SAE 15W-40

Product Use: Diesel Engine Oil

Product Number(s): 219382, 271201, 278068

Synonyms: Ursa Super Plus EC SAE 15W-40 ISOCLEAN Certified

Company Identification

Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed Not Applicable

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to

harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Light to Brown

Physical State: Liquid

Odor: Petroleum odor

Odor Threshold: No data available

pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)

Vapor Density (Air = 1): >1

Initial Boiling Point: 315°C (599°F)

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable
Melting Point: Not Applicable -
Density: 0.90 kg/l @ 15°C (59°F) (Typical)
Viscosity: 15.40 mm²/s @ 100°C (212°F) (Typical)
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 204 °C (399 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE



Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

One or more components does not comply with the following chemical inventory requirements: ENCS (Japan).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 2,3,8,9,12,14,15

Revision Date: September 09, 2016

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)

DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

SAFETY DATA SHEET

CITGO CITGARD® 600 Engine Oil, SAE 10W



Section 1. Identification

GHS product identifier : CITGO CITGARD® 600 Engine Oil, SAE 10W

Synonyms : Not available.

Code : 622610001

Supplier's details : CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210
sdsvend@citgo.com

Emergency telephone number : Technical Contact: (800) 248-4684
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

General : Avoid contact with eyes, skin and clothing. May be harmful if swallowed. IF IN EYES: Rinse cautiously with water for several minutes. If swallowed, do not induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

Prevention : Not applicable.

Response : Not applicable.

Storage : Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Section 3. Composition/information on ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
phosphorus oxides
metal oxide/oxides

Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None identified.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Amber.
- Odor** : Mild petroleum odor
- pH** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: >93.3°C (>199.9°F) [Pensky-Martens.]
Open cup: 226°C (438.8°F) [Cleveland.]
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 0.864
- Density lbs/gal** : Estimated 7.2 lbs/gal
- Gravity, °API** : Estimated 32 @ 60 F
- Solubility** : Insoluble in the following materials: cold water.
- Viscosity** : Kinematic (40°C (104°F)): 0.4 cm²/s (40 cSt)

Section 10. Stability and reactivity

Reactivity	: Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary	: Distillates (petroleum), hydrotreated heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. Distillates (petroleum), solvent-refined heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. Distillates (petroleum), solvent-dewaxed heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.
---------------------------	---

Irritation/Corrosion

Skin	: No additional information.
Eyes	: No additional information.
Respiratory	: No additional information.

Sensitization

Skin	: No additional information.
Respiratory	: No additional information.

Mutagenicity

Conclusion/Summary	: No additional information.
---------------------------	------------------------------

Carcinogenicity

Conclusion/Summary	: Distillates (petroleum), solvent-refined heavy paraffinic: In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested.
---------------------------	---

Reproductive toxicity

Conclusion/Summary	: No additional information.
---------------------------	------------------------------

Section 11. Toxicological information

Teratogenicity

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 12. Ecological information

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: Zinc alkyl dithiophosphate
Clean Water Act (CWA) 311: fumaric acid; ethylenediamine; vinyl acetate
 This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

[Composition/information on ingredients](#)

Section 15. Regulatory information

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
ethylenediamine	<0.01	Yes.	10000	1337.1	5000	668.5
vinyl acetate	<0.001	Yes.	1000	129	5000	644.8

SARA 304 RQ : 71963154.9 lbs / 32671272.3 kg [9989394.7 gal / 37813972.6 L]

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

International regulations

- International lists** :
- Australia inventory (AICS)**: All components are listed or exempted.
 - China inventory (IECSC)**: All components are listed or exempted.
 - Japan inventory**: All components are listed or exempted.
 - Korea inventory**: All components are listed or exempted.
 - Malaysia Inventory (EHS Register)**: Not determined.
 - New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
 - Philippines inventory (PICCS)**: All components are listed or exempted.
 - Taiwan inventory (CSNN)**: Not determined.
- Canada inventory** : All components are listed or exempted.
- EU Inventory** : Not determined.
- WHMIS (Canada)** : Not controlled under WHMIS (Canada).

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 11/17/2014.

- Key to abbreviations** :
- ATE = Acute Toxicity Estimate
 - BCF = Bioconcentration Factor
 - GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 - IATA = International Air Transport Association
 - IBC = Intermediate Bulk Container
 - IMDG = International Maritime Dangerous Goods
 - LogPow = logarithm of the octanol/water partition coefficient

Section 16. Other information

MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO CITGARD® 600 Engine Oil, SAE 15W-40



Section 1. Identification

GHS product identifier : CITGO CITGARD® 600 Engine Oil, SAE 15W-40
Synonyms : Heavy duty motor oil
Material uses : Heavy Duty Engine Oil
Code : 622615001

Supplier's details : CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210
sdsvend@citgo.com

Emergency telephone number (with hours of operation) : Technical Contact: (800) 248-4684
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

General : Avoid contact with eyes, skin and clothing.. IF IN EYES: Rinse cautiously with water for several minutes. If swallowed, do not induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

Prevention : Not applicable.

Response : Not applicable.

Storage : Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Heavy duty motor oil

CAS number/other identifiers

CAS number : Not applicable.

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
Distillates (petroleum), hydrotreated heavy paraffinic	≥75 - ≤90	64742-54-7
Distillates (petroleum), solvent-refined heavy paraffinic	≤5	64741-88-4
Distillates (petroleum), solvent-dewaxed heavy paraffinic	≤3	64742-65-0
reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate	≤3	125643-61-0

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
phosphorus oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated heavy paraffinic	<p>ACGIH TLV (United States, 3/2016). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p>
Distillates (petroleum), solvent-refined heavy paraffinic	<p>ACGIH TLV (United States, 3/2016). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p>
Distillates (petroleum), solvent-dewaxed heavy paraffinic	<p>ACGIH TLV (United States, 3/2016). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p>

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Avoid skin contact with liquid. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Leather boots are not protective for liquid contact.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Amber.
- Odor** : Mild petroleum odor
- pH** : Not available.
- Boiling point** : Not available.
- Flash point** : Open cup: 235°C (455°F) [Cleveland.]
- Evaporation rate** : <1 (butyl acetate = 1)
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : <0.0013 kPa (<0.01 mm Hg) [room temperature]
- Vapor density** : Not available.
- Relative density** : 0.87
- Density lbs/gal** : 7.28 lbs/gal
- Density gm/cm³** : Not available.
- Gravity, °API** : 30.8
- Solubility** : Insoluble in the following materials: cold water.
- Flow time (ISO 2431)** : Not available.
- Viscosity** : Kinematic (40°C (104°F)): 1.16 cm²/s (116 cSt)
- Viscosity SUS** : Estimated 537 SUS @104 F

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Distillates (petroleum), hydrotreated heavy paraffinic	LD50 Oral	Rat	>5000 mg/kg	-
Distillates (petroleum), solvent-refined heavy paraffinic	LD50 Dermal	Rabbit	2000 mg/kg	-
Distillates (petroleum), solvent-dewaxed heavy paraffinic	LD50 Oral	Rat	5000 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-

Conclusion/Summary : **Distillates (petroleum), hydrotreated heavy paraffinic**: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Distillates (petroleum), solvent-refined heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Distillates (petroleum), solvent-dewaxed heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate: In subchronic studies, certain alkyl phenols have been associated with liver effects (cellular hypertrophy) following oral administration to rats. These liver effects were characterized by necrosis and fibrosis at doses of 250 mg/kg/day or higher. Also, effects on prothrombin index were reported, however this effect is not seen in all studies. Chronic studies did not find carcinogenic effects in rats or mice.

Irritation/Corrosion

Not available.

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Not available.

Section 11. Toxicological information

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Not available.

Conclusion/Summary : No additional information.

Carcinogenicity

Not available.

Conclusion/Summary : **Distillates (petroleum), solvent-refined heavy paraffinic**: In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested.

Classification

Product/ingredient name	OSHA	IARC	NTP
Distillates (petroleum), solvent-refined heavy paraffinic	-	4	-

Reproductive toxicity

Not available.

Conclusion/Summary : No additional information.

Teratogenicity

Not available.

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Section 11. Toxicological information

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Not available.

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Distillates (petroleum), solvent-refined heavy paraffinic	3.9 to 6	-	high
reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate	9.2	260	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Oil: The product(s) represented by this SDS is (are) regulated as "oil" under 49 CFR Part 130. Shipments by rail or highway in packaging having a capacity of 3500 gallons or more or in a quantity greater 42,000 gallons are subject to these requirements. In addition, mixtures containing 10% or more of this product may be subject to these requirements.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts; toluene; benzene
Clean Water Act (CWA) 311: fumaric acid; ethylenediamine; toluene; vinyl acetate; benzene
 This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
ethylenediamine	<0.01	Yes.	10000	1337.1	5000	668.5
vinyl acetate	<0.0001	Yes.	1000	129	5000	644.8

SARA 304 RQ : 42151407.9 lbs / 19136739.2 kg [5810795 gal / 21996251.9 L]

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

No products were found.

Section 15. Regulatory information

State regulations

- Massachusetts** : None of the components are listed.
New York : None of the components are listed.
New Jersey : None of the components are listed.
Pennsylvania : None of the components are listed.

California Prop. 65 Clear and Reasonable Warnings (2018)

⚠ WARNING: This product can expose you to Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Toluene, Ethylene Glycol, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
toluene	<0.1	No.	Yes.	-	Yes.
benzene	trace	Yes.	Yes.	Yes.	Yes.
ethanediol	<0.1	No.	Yes.	-	-

International regulations

- WHMIS (Canada)** : Not controlled under WHMIS (Canada).

Inventory list

- United States** : All components are listed or exempted.
Australia : All components are listed or exempted.
Canada : All components are listed or exempted.
China : Not determined.
Europe : All components are listed or exempted.
Japan : **Japan inventory (ENCS):** Not determined.
Japan inventory (ISHL): Not determined.
Malaysia : Not determined.
New Zealand : All components are listed or exempted.
Philippines : Not determined.
Republic of Korea : All components are listed or exempted.
Taiwan : All components are listed or exempted.
Thailand : Not determined.
Turkey : Not determined.
Viet Nam : Not determined.

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

Date of printing : 11/14/2017
Date of issue/Date of revision : 11/14/2017
Date of previous issue : No previous validation
Version : 1

Key to abbreviations

: ATE = Acute Toxicity Estimate
 : BCF = Bioconcentration Factor
 : GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 : IATA = International Air Transport Association
 : IBC = Intermediate Bulk Container
 : IMDG = International Maritime Dangerous Goods
 : LogPow = logarithm of the octanol/water partition coefficient
 : MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 : UN = United Nations

References

: Not available.

✔ Indicates information that has changed from previously issued version.

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO CITGARD® 600 Engine Oil, SAE 30



Section 1. Identification

GHS product identifier : CITGO CITGARD® 600 Engine Oil, SAE 30
Synonyms : Heavy duty motor oil
Material uses : Heavy Duty Engine Oil
Code : 622630001

Supplier's details : CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210
sdsvend@citgo.com

Emergency telephone number (with hours of operation) : Technical Contact: (800) 248-4684
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

General : Avoid contact with eyes, skin and clothing.. IF IN EYES: Rinse cautiously with water for several minutes. If swallowed, do not induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

Prevention : Not applicable.

Response : Not applicable.

Storage : Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Heavy duty motor oil

CAS number/other identifiers

CAS number : Not applicable.

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
Distillates (petroleum), hydrotreated heavy paraffinic	≥90	64742-54-7
Distillates (petroleum), solvent-refined heavy paraffinic	≤3	64741-88-4
Distillates (petroleum), solvent-dewaxed heavy paraffinic	≤3	64742-65-0

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
phosphorus oxides
metal oxide/oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated heavy paraffinic	<p>ACGIH TLV (United States, 3/2016). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p>
Distillates (petroleum), solvent-refined heavy paraffinic	<p>ACGIH TLV (United States, 3/2016). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p>
Distillates (petroleum), solvent-dewaxed heavy paraffinic	<p>ACGIH TLV (United States, 3/2016). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p>

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Avoid skin contact with liquid. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Leather boots are not protective for liquid contact.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Amber.
- Odor** : Mild petroleum odor
- pH** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: 218°C (424.4°F) [Pensky-Martens.]
Open cup: 254°C (489.2°F) [Cleveland.]
- Evaporation rate** : <1 (n-butyl acetate. = 1)
- Lower and upper explosive (flammable) limits** : Lower: 1%
Upper: 7%
- Vapor pressure** : <0.0013 kPa (<0.01 mm Hg) [room temperature]
- Vapor density** : >1 [Air = 1]
- Relative density** : 0.877
- Density lbs/gal** : Estimated 7.31 lbs/gal
- Density gm/cm³** : Not available.
- Gravity, °API** : Estimated 30 @ 60 F
- Solubility** : Insoluble in the following materials: cold water.
- Flow time (ISO 2431)** : Not available.
- Viscosity** : Kinematic (40°C (104°F)): 0.943 cm²/s (94.3 cSt)
- Viscosity SUS** : Estimated 437 SUS @104 F

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Distillates (petroleum), hydrotreated heavy paraffinic	LD50 Oral	Rat	>5000 mg/kg	-
Distillates (petroleum), solvent-refined heavy paraffinic	LD50 Dermal	Rabbit	2000 mg/kg	-
Distillates (petroleum), solvent-dewaxed heavy paraffinic	LD50 Oral	Rat	5000 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-

Conclusion/Summary : **Distillates (petroleum), hydrotreated heavy paraffinic**: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Distillates (petroleum), solvent-refined heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Distillates (petroleum), solvent-dewaxed heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Irritation/Corrosion

Not available.

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Not available.

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Not available.

Section 11. Toxicological information

Conclusion/Summary : No additional information.

Carcinogenicity

Not available.

Conclusion/Summary : **Distillates (petroleum), solvent-refined heavy paraffinic**: In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested.

Classification

Product/ingredient name	OSHA	IARC	NTP
Distillates (petroleum), solvent-refined heavy paraffinic	-	4	-

Reproductive toxicity

Not available.

Conclusion/Summary : No additional information.

Teratogenicity

Not available.

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Dermal.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Section 11. Toxicological information

Not available.

- General** : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Not available.

- Conclusion/Summary** : Not available.

Persistence and degradability

- Conclusion/Summary** : Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Distillates (petroleum), solvent-refined heavy paraffinic	3.9 to 6	-	high

Mobility in soil

- Soil/water partition coefficient (K_{oc})** : Not available.

- Other adverse effects** : No known significant effects or critical hazards.

Section 13. Disposal considerations

- Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Oil: The product(s) represented by this SDS is (are) regulated as “oil” under 49 CFR Part 130. Shipments by rail or highway in packaging having a capacity of 3500 gallons or more or in a quantity greater 42,000 gallons are subject to these requirements. In addition, mixtures containing 10% or more of this product may be subject to these requirements.

Special precautions for user : **Transport within user’s premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts
Clean Water Act (CWA) 311: fumaric acid; ethylenediamine; vinyl acetate
 This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
ethylenediamine	<0.01	Yes.	10000	1337.1	5000	668.5
vinyl acetate	<0.001	Yes.	1000	129	5000	644.8

SARA 304 RQ : 70952178.2 lbs / 32212288.9 kg [9703063.2 gal / 36730090 L]

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

No products were found.

State regulations

Section 15. Regulatory information

- Massachusetts** : None of the components are listed.
New York : None of the components are listed.
New Jersey : None of the components are listed.
Pennsylvania : None of the components are listed.

International regulations

- WHMIS (Canada)** : Not controlled under WHMIS (Canada).

Inventory list

- United States** : All components are listed or exempted.
Australia : All components are listed or exempted.
Canada : All components are listed or exempted.
China : All components are listed or exempted.
Europe : All components are listed or exempted.
Japan : **Japan inventory (ENCS)**: All components are listed or exempted.
Japan inventory (ISHL): Not determined.
Malaysia : Not determined.
New Zealand : All components are listed or exempted.
Philippines : All components are listed or exempted.
Republic of Korea : All components are listed or exempted.
Taiwan : Not determined.
Thailand : Not determined.
Turkey : Not determined.
Viet Nam : Not determined.

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

- Date of printing** : 1/22/2018
Date of issue/Date of revision : 1/22/2018
Date of previous issue : No previous validation
Version : 1

Section 16. Other information

Key to abbreviations

- : ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

References

- : Not available.

✔ Indicates information that has changed from previously issued version.

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET


CITGO Biodiesel (B33)



Section 1. Identification

GHS product identifier	: CITGO Biodiesel (B33)
Synonyms	: No. 2-D Grade Diesel Fuel Oil (defined by ASTM D-975); Treated or Refined Diesel Fuel No. 2; Grade 2 Distillate Fuel; Hydrodesulfurized Middle Distillate; C9-C16 Petroleum Hydrocarbons; Ultra Low Sulfur Diesel Fuel with Biodiesel
Material uses	: Fuel.
Code	: 14833, 14933
MSDS #	: BDB33
Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number (with hours of operation)	: Technical Contact: (800) 248-4684 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300 (United States Only)

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2 ASPIRATION HAZARD - Category 1
GHS label elements	
Hazard pictograms	: 
Signal word	: Danger
Hazard statements	: Flammable liquid and vapor. Harmful if inhaled. Causes skin irritation. Suspected of causing cancer. May be fatal if swallowed and enters airways. May cause damage to organs through prolonged or repeated exposure. (central nervous system (CNS))
Precautionary statements	
General	: Diesel engine exhaust can cause upper respiratory tract irritation and reversible pulmonary effects. Long-term exposure to diesel engine exhaust may cause cancer. Do not syphon by mouth.

Section 2. Hazards identification

Prevention	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash hands thoroughly after handling.
Response	: Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention.
Storage	: Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and receiving equipment. These alone may be insufficient to remove static electricity. Do not taste or swallow. Avoid contact with skin and clothing. Wash thoroughly after handling.
Hazards not otherwise classified	: Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor may cause flash fire or explosion. Causes digestive tract burns. Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: No. 2-D Grade Diesel Fuel Oil (defined by ASTM D-975); Treated or Refined Diesel Fuel No. 2; Grade 2 Distillate Fuel; Hydrodesulfurized Middle Distillate; C9-C16 Petroleum Hydrocarbons; Ultra Low Sulfur Diesel Fuel with Biodiesel

CAS number/other identifiers

CAS number : Mixture

Ingredient name	%	CAS number
Fatty acid esters	15 - 40	Mixture
Benzene, trimethyl-	0.5 - 1.5	25551-13-7
Naphthalene	0.1 - 1	91-20-3
biphenyl	0.1 - 1	92-52-4
Cumene	0.1 - 1	98-82-8
Xylene	0.1 - 1	1330-20-7
Ethylbenzene	0.1 - 1	100-41-4

* = Various

** = Mixture

*** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Harmful if inhaled.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Corrosive to the digestive tract. Causes burns. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Repeated or prolonged overexposure to solvents can cause brain or other nervous system damage. The symptoms can include the loss of memory, the loss of intellectual capacity and the loss of coordination.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
stomach pains
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.
- Specific treatments** : Treat symptomatically and supportively.

Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that gas or vapor is still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use caution when applying carbon dioxide in confined spaces.
SMALL FIRE: Steam, CO₂, dry chemical or inert gas (e.g., nitrogen). LARGE FIRE: Use foam, water fog or water spray. Water fog and spray are effective in cooling containers and adjacent structures. However, water can cause frothing and/or may not extinguish the fire. Water can be used to cool the external walls of vessels to prevent excessive pressure, ignition or explosion.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static accumulation may be significantly increased by the presence of small quantities of water or other contaminants. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
Diesel engine exhaust

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Restrict flow velocity according to API 2003 (2008), NFPA 77 (2007), and Laurence Britton, "Avoiding Static Ignition Hazards in Chemical Operations". To reduce potential for static discharge, ensure that all equipment is properly grounded and bonded and meets appropriate electrical classification requirements. Non equilibrium conditions may increase the fire hazard associated with this product. Always bond receiving containers to the fill pipe before and during loading. Always confirm that receiving container is properly grounded. Bonding and grounding alone may be inadequate to eliminate fire and explosion hazards. Carefully review operations that may increase the risks such as tank and container filling, tank cleaning, sampling, gauging, loading, filtering, mixing, agitation, etc. In addition to bonding and grounding, efforts to mitigate the hazards may include, but are not limited to, ventilation, inerting and/or reduction of transfer velocities. Always keep nozzle in contact with the container throughout the loading process. Do NOT fill any portable container in or on a vehicle. Special precautions, such as reduced loading rates and increased monitoring, must be observed during "switch loading" operations (i.e., loading this material in tanks or shipping compartments that previously contained a dissimilar product).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 7. Handling and storage

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Head spaces in tanks and other containers may contain a mixture of air and vapor in the flammable range. Vapor may be ignited by static discharge. Storage area must meet OSHA requirements and applicable fire codes. Additional information regarding the design and control of hazards associated with the handling and storage of flammable and combustible liquids may be found in professional and industrial documents including, but not limited to, the National Fire Protection Association (NFPA) publications NFPA 30 ("Flammable and Combustible Liquid Code"), NFPA 77 ("Recommended Practice on Static Electricity") and the American Petroleum Institute (API) Recommended Practice 2003, ("Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents").

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Benzene, trimethyl-

ACGIH TLV (United States, 3/2016).

TWA: 25 ppm 8 hours.

TWA: 123 mg/m³ 8 hours.

ACGIH TLV (United States). Absorbed through skin.

STEL: 15 ppm 15 minutes.

ACGIH TLV (United States, 3/2016).

Absorbed through skin.

TWA: 10 ppm 8 hours.

TWA: 52 mg/m³ 8 hours.

NIOSH REL (United States, 10/2013).

TWA: 10 ppm 10 hours.

TWA: 50 mg/m³ 10 hours.

STEL: 15 ppm 15 minutes.

STEL: 75 mg/m³ 15 minutes.

OSHA PEL (United States, 6/2016).

TWA: 10 ppm 8 hours.

TWA: 50 mg/m³ 8 hours.

Naphthalene

OSHA PEL Z2 (United States).

TWA: 0.2 ppm 8 hours.

ACGIH TLV (United States, 3/2016).

TWA: 0.2 ppm 8 hours.

TWA: 1.3 mg/m³ 8 hours.

NIOSH REL (United States, 10/2013).

TWA: 1 mg/m³ 10 hours.

TWA: 0.2 ppm 10 hours.

OSHA PEL (United States, 6/2016).

TWA: 0.2 ppm 8 hours.

TWA: 1 mg/m³ 8 hours.

biphenyl

NIOSH REL (United States, 10/2013).

Absorbed through skin.

TWA: 50 ppm 10 hours.

TWA: 245 mg/m³ 10 hours.

ACGIH TLV (United States, 3/2016).

TWA: 50 ppm 8 hours.

OSHA PEL (United States, 6/2016).

Absorbed through skin.

TWA: 50 ppm 8 hours.

TWA: 245 mg/m³ 8 hours.

Cumene

ACGIH TLV (United States, 3/2016).

TWA: 100 ppm 8 hours.

Xylene

Section 8. Exposure controls/personal protection

TWA: 434 mg/m³ 8 hours.
 STEL: 150 ppm 15 minutes.
 STEL: 651 mg/m³ 15 minutes.
OSHA PEL (United States, 6/2016).

TWA: 100 ppm 8 hours.
 TWA: 435 mg/m³ 8 hours.

Ethylbenzene

ACGIH TLV (United States, 3/2016).

TWA: 20 ppm 8 hours.

NIOSH REL (United States, 10/2013).

TWA: 100 ppm 10 hours.

TWA: 435 mg/m³ 10 hours.

STEL: 125 ppm 15 minutes.

STEL: 545 mg/m³ 15 minutes.

OSHA PEL (United States, 6/2016).

TWA: 100 ppm 8 hours.

TWA: 435 mg/m³ 8 hours.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection

: Avoid skin contact with liquid. Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Heavy duty, industrial grade chemically resistant gloves constructed of nitrile, neoprene, polyethylene, fluoroelastomer rubber or polyvinyl chloride as approved by glove manufacturer. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Leather gloves are not protective for liquid contact.

Body protection

: Avoid skin contact with liquid. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

: Avoid skin contact with liquid. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Leather boots are not protective for liquid contact.

Section 8. Exposure controls/personal protection

- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If an air purifying respirator is appropriate, use one equipped with cartridges rated for organic vapors.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Clear or red.
- Odor** : Characteristic.
- pH** : Not applicable
- Melting point** : -29°C (-20.2°F)
- Boiling point** : 200 to 330°C (392 to 626°F)
- Flash point** : Closed cup: 54°C (129°F) [Pensky-Martens.]
- Evaporation rate** : <1 (butyl acetate = 1)
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 0.84
- Density lbs/gal** : Estimated 7 lbs/gal
- Density gm/cm³** : 0.87 g/cm³
- Gravity, °API** : Estimated 37 @ 60 F
- Solubility** : Very slightly soluble in the following materials: cold water.
- Flow time (ISO 2431)** : Not available.
- Conductivity** : <50 picosiemens/meter (unadditized)

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not store with strong oxidizing agents.
- Incompatible materials** : Reactive or incompatible with the following materials:
oxidizing materials
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Benzene, trimethyl-Naphthalene biphenyl	LD50 Oral	Rat	8970 mg/kg	-
	LD50 Oral	Rat	490 mg/kg	-
	LD50 Dermal	Rabbit	>5010 mg/kg	-
Cumene	LD50 Oral	Rat	2140 mg/kg	-
	LC50 Inhalation Vapor	Mouse	10 g/m ³	7 hours
	LD50 Dermal	Rabbit	12300 uL/kg	-
Xylene	LD50 Oral	Rat	2.9 g/kg	-
	LD50 Oral	Rat	4000 mg/kg	-
	LC50 Inhalation Vapor	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	6700 ppm	4 hours
	LD50 Oral	Mouse	2119 mg/kg	-
Ethylbenzene	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-

Conclusion/Summary : No additional information.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Benzene, trimethyl-Naphthalene biphenyl	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
Cumene	Skin - Mild irritant	Rabbit	-	495 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
Xylene	Skin - Severe irritant	Rabbit	-	24 hours 500 microliters	-
	Eyes - Mild irritant	Rabbit	-	86 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 10 milligrams	-
Ethylbenzene	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	100 Percent	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Not available.

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Not available.

Conclusion/Summary : No additional information.

Carcinogenicity

Not available.

Section 11. Toxicological information

Conclusion/Summary : **Diesel exhaust particulate:** Lung tumor and lymphomas were identified in rats and mice exposed to unfiltered diesel fuel exhaust in chronic inhalation studies. Further, epidemiological studies have identified increase incidences of lung cancer in US railroad workers and bladder cancer in bus and truck drivers possibly associated with exposure to diesel engine exhaust. NTP has determined that exposure to diesel exhaust particulates, a complex mixture of combustion products of diesel fuel, is reasonably anticipated to be a human carcinogen. In addition, NIOSH has identified complete diesel exhaust as a potential carcinogen.

Classification

Product/ingredient name	OSHA	IARC	NTP
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.
Cumene	-	2B	Reasonably anticipated to be a human carcinogen.
Xylene	-	3	-
Ethylbenzene	-	2B	-

Reproductive toxicity

Not available.

Conclusion/Summary : No additional information.

Teratogenicity

Not available.

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Benzene, trimethyl-	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
biphenyl	Category 3	Not applicable.	Respiratory tract irritation
Cumene	Category 3	Not applicable.	Respiratory tract irritation
Ethylbenzene	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Benzene, trimethyl-	Category 2	Not determined	central nervous system (CNS)
Xylene	Category 2	Not determined	hearing organs
benzene	Category 1	Inhalation	blood system
Toluene	Category 2	Inhalation	central nervous system (CNS)
Sulfur	Category 2	Skin Inhalation	skin respiratory tract

Aspiration hazard

Name	Result
Soybean Oil, Methyl Ester	ASPIRATION HAZARD - Category 1
Benzene, trimethyl-	ASPIRATION HAZARD - Category 1
Ethylbenzene	ASPIRATION HAZARD - Category 1
Cumene	ASPIRATION HAZARD - Category 1
benzene	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1

Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Harmful if inhaled.

Skin contact : Causes skin irritation. Defatting to the skin.

Ingestion : Corrosive to the digestive tract. Causes burns. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Repeated or prolonged overexposure to solvents can cause brain or other nervous system damage. The symptoms can include the loss of memory, the loss of intellectual capacity and the loss of coordination.

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : Adverse symptoms may include the following:
stomach pains
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Benzene, trimethyl-	Acute LC50 5600 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
Naphthalene	Acute EC50 1.6 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
biphenyl	Chronic NOEC 0.5 mg/l Marine water	Crustaceans - Uca pugnax - Adult	3 weeks
	Chronic NOEC 1.5 mg/l Fresh water	Fish - Oreochromis mossambicus	60 days
	Acute LC50 360 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1450 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 0.17 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
Cumene	Chronic NOEC 0.229 mg/l Fresh water	Fish - Oncorhynchus mykiss	87 days
	Acute EC50 2600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 7400 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 10600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Xylene	Acute LC50 2700 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 90 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 8.5 ppm Marine water	Crustaceans - Palaemonetes pugio - Adult	48 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 15700 µg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Acute LC50 19000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 16940 µg/l Fresh water	Fish - Carassius auratus	96 hours
Ethylbenzene	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 6530 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 2930 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Benzene, trimethyl-	3.4 to 3.8	-	low
Naphthalene	3.4	36.5 to 168	low
biphenyl	4.008	1900	high
Cumene	3.55	35.48	low
Xylene	3.12	8.1 to 25.9	low
Ethylbenzene	3.6	-	low

Section 12. Ecological information

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.




Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : D001, D018

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	NA1993	UN1202	UN1202
UN proper shipping name	NA 1993 Diesel Fuel Solution, 3, PG III	UN 1202 Diesel Fuel Solution, 3, PG III	UN 1202 Diesel Fuel Solution, 3, PG III
Transport hazard class(es)	3 	3 	3 
Packing group	III	III	III
Environmental hazards	No.	No.	No.

Additional information

DOT Classification : **Packaging instruction**
Passenger aircraft
 Quantity limitation: 60 L

Cargo aircraft
 Quantity limitation: 220 L

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).

ADR/RID : **Tunnel code** (D/E)

IATA : **Quantity limitation** Cargo Aircraft Only: 220 L. Limited Quantities - Passenger Aircraft: 60 L.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 14. Transport information

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations :

- United States inventory (TSCA 8b)**: All components are listed or exempted.
- Clean Water Act (CWA) 307**: naphthalene; ethylbenzene; toluene; benzene
- Clean Water Act (CWA) 311**: naphthalene; xylene; ethylbenzene; toluene; benzene

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification :

- FLAMMABLE LIQUIDS - Category 3
- ACUTE TOXICITY (inhalation) - Category 4
- SKIN IRRITATION - Category 2
- CARCINOGENICITY - Category 2
- SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2
- ASPIRATION HAZARD - Category 1
- HNOC - Static-accumulating flammable liquid
- HNOC - Corrosive to digestive tract
- HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
CITGO Biodiesel (B33)	>99	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Static-accumulating flammable liquid HNOC - Corrosive to digestive tract HNOC - Defatting irritant
Fatty acid esters	15 - 40	ASPIRATION HAZARD - Category 1
Benzene, trimethyl-	0.5 - 1.5	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2 ASPIRATION HAZARD - Category 1
Naphthalene	0.1 - 1	FLAMMABLE SOLIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 CARCINOGENICITY - Category 2
biphenyl	0.1 - 1	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A

Section 15. Regulatory information

Cumene	0.1 - 1	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 FLAMMABLE LIQUIDS - Category 3 EYE IRRITATION - Category 2A CARCINOGENICITY (inhalation) - Category 2
Xylene	0.1 - 1	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A
Ethylbenzene	0.1 - 1	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 2 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY (inhalation) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	naphthalene	91-20-3	<1
	ethylbenzene	100-41-4	<1
Supplier notification	naphthalene	91-20-3	<1
	ethylbenzene	100-41-4	<1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: ethyltoluene; trimethylbenzene
- New York** : The following components are listed: Naphthalene; Cumene; Benzene, 1-methylethyl-; Ethylbenzene
- New Jersey** : The following components are listed: ETHYLTOLUENES; BENZENE, ETHYLMETHYL-; TRIMETHYL BENZENE (mixed isomers); BENZENE, TRIMETHYL-; NAPHTHALENE; MOTH FLAKES; cumene; ethylbenzene
- Pennsylvania** : The following components are listed: ethyltoluene; trimethylbenzene; NAPHTHALENE; cumene; ethylbenzene

California Prop. 65 Clear and Reasonable Warnings (2018)

⚠ WARNING: This product can expose you to Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Diesel exhaust particulate, Naphthalene, Cumene, Ethylbenzene, which are known to the State of California to cause cancer, and Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Diesel exhaust particulate	<2	Yes.	No.	-	-
naphthalene	<1	Yes.	No.	Yes.	-
cumene	<1	Yes.	No.	-	-
ethylbenzene	<1	Yes.	No.	Yes.	-
toluene	<0.1	No.	Yes.	-	Yes.
benzene	<0.1	Yes.	Yes.	Yes.	Yes.

International regulations

Section 15. Regulatory information

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2A: Material causing other toxic effects (Very toxic).

Inventory list

United States : All components are listed or exempted.
Australia : Not determined.
Canada : All components are listed or exempted.
China : Not determined.
Europe : All components are listed or exempted.
Japan : **Japan inventory (ENCS)**: Not determined.
Japan inventory (ISHL): Not determined.
Malaysia : Not determined.
New Zealand : Not determined.
Philippines : Not determined.
Republic of Korea : Not determined.
Taiwan : Not determined.
Thailand : Not determined.
Turkey : Not determined.
Viet Nam : Not determined.

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 3	On basis of test data
ACUTE TOXICITY (inhalation) - Category 4	Expert judgment
SKIN IRRITATION - Category 2	Expert judgment
CARCINOGENICITY - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2	Calculation method
ASPIRATION HAZARD - Category 1	Expert judgment

History

Date of printing : 4/12/2018
Date of issue/Date of revision : 4/12/2018
Date of previous issue : No previous validation
Version : 1

Section 16. Other information

Key to abbreviations

- : ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

References

- : Not available.

✔ Indicates information that has changed from previously issued version.

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO EP Compound 100



Section 1. Identification

GHS product identifier	: CITGO EP Compound 100
Synonyms	: Lubricating oil, Gear oil
Code	: 631120001
MSDS #	: 631120001
Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number	: Technical Contact: (800) 248-4684 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300 (United States Only)

Section 2. Hazards identification

OSHA/HCS status	: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
Classification of the substance or mixture	: Not classified.
GHS label elements	
Signal word	: No signal word.
Hazard statements	: No known significant effects or critical hazards.
Precautionary statements	
General	: Avoid contact with eyes, skin and clothing. May be harmful if swallowed. IF IN EYES: Rinse cautiously with water for several minutes. If swallowed, do not induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.
Prevention	: Not applicable.
Response	: Not applicable.
Storage	: Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Lubricating oil, Gear oil
CAS number/other identifiers	
CAS number	: Not applicable.

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Section 3. Composition/information on ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Hazardous thermal decomposition products** : No specific data.

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Section 5. Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None identified.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Amber.
- Odor** : Mild petroleum odor
- pH** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: 200°C (392°F) [Pensky-Martens.]
Open cup: 250°C (482°F) [Cleveland.]
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : <0.0013 kPa (<0.01 mm Hg) [room temperature]
- Vapor density** : >1 [Air = 1]
- Relative density** : 0.88
- Density lbs/gal** : Estimated 7.34 lbs/gal
- Gravity, °API** : Estimated 29 @ 60 F
- Solubility** : Insoluble in the following materials: cold water.
- Viscosity** : Kinematic (40°C (104°F)): 1 cm²/s (100 cSt)

Section 9. Physical and chemical properties

Viscosity SUS : Estimated 500 SUS @104 F

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : **Distillates (petroleum), hydrotreated heavy paraffinic**: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Irritation/Corrosion

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Conclusion/Summary : No additional information.

Carcinogenicity

Conclusion/Summary : No additional information.

Reproductive toxicity

Conclusion/Summary : No additional information.

Teratogenicity

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Potential chronic health effects

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid

Section 13. Disposal considerations

dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises**: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

Section 15. Regulatory information

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
ethyl acrylate	<0.001	Yes.	No.	No.	No.

International regulations

International lists	: Australia inventory (AICS): All components are listed or exempted. China inventory (IECSC): Not determined. Japan inventory: Not determined. Korea inventory: All components are listed or exempted. Malaysia Inventory (EHS Register): Not determined. New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted. Philippines inventory (PICCS): All components are listed or exempted. Taiwan inventory (CSNN): Not determined.
Canada inventory	: All components are listed or exempted.
EU Inventory	: Not determined.
WHMIS (Canada)	: Not controlled under WHMIS (Canada).

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 9/3/2014.

Key to abbreviations :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

Section 16. Other information

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO EP Compound 150



Section 1. Identification

GHS product identifier	: CITGO EP Compound 150
Synonyms	: Lubricating oil, Gear oil
Code	: 631130001
MSDS #	: 631130001
Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number	: Technical Contact: (800) 248-4684 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300 (United States Only)

Section 2. Hazards identification

OSHA/HCS status	: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
Classification of the substance or mixture	: Not classified.
GHS label elements	
Signal word	: No signal word.
Hazard statements	: No known significant effects or critical hazards.
Precautionary statements	
General	: Avoid contact with eyes, skin and clothing. May be harmful if swallowed. IF IN EYES: Rinse cautiously with water for several minutes. If swallowed, do not induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.
Prevention	: Not applicable.
Response	: Not applicable.
Storage	: Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Lubricating oil, Gear oil
CAS number/other identifiers	
CAS number	: Not applicable.

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Section 3. Composition/information on ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Hazardous thermal decomposition products** : No specific data.

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Section 5. Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None identified.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Amber.
- Odor** : Mild petroleum odor
- pH** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: 200°C (392°F) [Pensky-Martens.]
Open cup: 265°C (509°F) [Cleveland.]
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : <0.0013 kPa (<0.01 mm Hg) [room temperature]
- Vapor density** : >1 [Air = 1]
- Relative density** : 0.88
- Density lbs/gal** : Estimated 7.34 lbs/gal
- Gravity, °API** : Estimated 30 @ 60 F
- Solubility** : Insoluble in the following materials: cold water.
- Viscosity** : Kinematic (40°C (104°F)): 1.5 cm²/s (150 cSt)

Section 9. Physical and chemical properties

Viscosity SUS : Estimated 750 SUS @104 F

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : **Distillates (petroleum), hydrotreated heavy paraffinic**: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Irritation/Corrosion

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Conclusion/Summary : No additional information.

Carcinogenicity

Conclusion/Summary : No additional information.

Reproductive toxicity

Conclusion/Summary : No additional information.

Teratogenicity

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Potential chronic health effects

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid

Section 13. Disposal considerations

dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises**: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

Section 15. Regulatory information

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
ethyl acrylate	<0.001	Yes.	No.	No.	No.

International regulations

International lists	: Australia inventory (AICS): All components are listed or exempted. China inventory (IECSC): Not determined. Japan inventory: Not determined. Korea inventory: All components are listed or exempted. Malaysia Inventory (EHS Register): Not determined. New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted. Philippines inventory (PICCS): All components are listed or exempted. Taiwan inventory (CSNN): Not determined.
Canada inventory	: All components are listed or exempted.
EU Inventory	: Not determined.
WHMIS (Canada)	: Not controlled under WHMIS (Canada).

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 9/8/2014.

Key to abbreviations :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

Section 16. Other information

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO Lithoplex® CM-2 Grease



Section 1. Identification

GHS product identifier	: CITGO Lithoplex® CM-2 Grease
Synonyms	: Lubricating grease; CITGO® Material Code: 655352001
Material uses	: Lubricating grease
Code	: 655352001
MSDS #	: 655352001
Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number	: Technical Contact: (800) 248-4684 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300 (United States Only)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Causes serious eye irritation.
Injection under the skin can cause severe injury.
Most damage occurs in the first few hours.
Initial symptoms may be minimal.

Precautionary statements

General : Avoid contact with eyes, skin and clothing. IF SWALLOWED: Do NOT induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

Prevention : Wear eye or face protection. Wash hands thoroughly after handling.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : Injection of petroleum hydrocarbons requires immediate medical attention

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Lubricating grease;
 CITGO® Material Code: 655352001

CAS number/other identifiers

CAS number : Not applicable.

Ingredient name	%	CAS number
Molybdenum Disulfide	1 - 5	1317-33-5
Zinc and zinc compounds	1 - 5	68649-42-3

* = Various ** = Mixture *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
- Ingestion** : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : No specific fire or explosion hazard.

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
metal oxide/oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Do not apply heat or flame to stockpiled material. Rotate stock to reduce the potential for hot spots. Do not store with oxidizers. Minimize dust creation by keeping material moist and/or covered.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Molybdenum Disulfide	<p>ACGIH TLV (United States, 4/2014). TWA: 10 mg/m³, (as Mo) 8 hours. Form: Inhalable fraction TWA: 3 mg/m³, (as Mo) 8 hours. Form: Respirable fraction</p> <p>OSHA PEL (United States, 2/2013). TWA: 15 mg/m³, (as Mo) 8 hours. Form: Total dust</p>

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety glasses with side shields. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

- Physical state** : Solid. [Smooth and adhesive]
- Color** : Gray.
- Odor** : Mild petroleum odor
- pH** : Not available.
- Boiling point/boiling range** : Not available.
- Flash point** : Open cup: >150°C (>302°F) [Estimated]
- Evaporation rate** : <1 (n-butyl acetate. = 1)
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : <0.0013 kPa (<0.01 mm Hg) [room temperature]
- Vapor density** : >10 [Air = 1]
- Relative density** : 0.94
- Density lbs/gal** : Estimated 7.84 lbs/gal
- Gravity, °API** : Estimated 19 @ 60 F
- Solubility** : Insoluble in the following materials: cold water.
- NLGI Grade** : 2

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Molybdenum Disulfide	LD Dermal	Rat	>2 g/kg	-
	LD Oral	Rat	>2 g/kg	-
	LD50 Oral	Rat	>6000 mg/kg	-
	LDLo Oral	Rat	6 g/kg	-
Zinc and zinc compounds	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	2890 mg/kg	-

Conclusion/Summary : **Distillates (petroleum), hydrotreated heavy naphthenic**: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Distillates (petroleum), hydrotreated heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Molybdenum Disulfide: In general, insoluble compounds of molybdenum, such as molybdenum disulfide, exhibit a low order of toxicity.

Zinc and zinc compounds: INHALATION (LC50), Acute: > 1310 mg/L (Rat screen level)(4 hours).
 DRAIZE EYE, Acute: Moderate to severe eye irritant. (Rabbit).
 DRAIZE DERMAL, Acute: Mild to moderate skin irritant. (Rabbit).
 BUEHLER DERMAL, Acute: Non-sensitizing. (Guinea Pig).
 28-Day DERMAL, Sub-Chronic: Severe skin irritant. (Rabbit). Reported reduced food consumption resulting in weight loss and testicular atrophy.

Irritation/Corrosion

Skin : **Molybdenum Disulfide**: May cause skin irritation.

Eyes : **Molybdenum Disulfide**: May cause eye irritation.

Respiratory : **Molybdenum Disulfide**: May cause respiratory irritation.

Sensitization

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Conclusion/Summary : No additional information.

Carcinogenicity

Conclusion/Summary : No additional information.

Reproductive toxicity

Conclusion/Summary : No additional information.

Teratogenicity

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Molybdenum Disulfide	Category 3	Not applicable.	Respiratory tract irritation

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Dermal.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
- Ingestion** : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Potential chronic health effects

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not available.	Not available.
UN proper shipping name	-	Not available.	Not available.
Transport hazard class(es)	-	Not available.	Not available.
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: Zinc and zinc compounds
 This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Section 15. Regulatory information

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Molybdenum Disulfide	No.	No.	No.	Yes.	No.
Zinc and zinc compounds	No.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Zinc and zinc compounds	68649-42-3	<2

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: molybdenum disulphide; Polymer
- New York** : None of the components are listed.
- New Jersey** : The following components are listed: ZINC compounds; Polymer
- Pennsylvania** : The following components are listed: ZINC COMPOUNDS; Polymer

International regulations

International lists

- : **Australia inventory (AICS)**: All components are listed or exempted.
- : **China inventory (IECSC)**: All components are listed or exempted.
- : **Japan inventory**: Not determined.
- : **Korea inventory**: All components are listed or exempted.
- : **Malaysia Inventory (EHS Register)**: Not determined.
- : **New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
- : **Philippines inventory (PICCS)**: Not determined.
- : **Taiwan inventory (CSNN)**: Not determined.

Canada inventory : All components are listed or exempted.

EU Inventory : All components are listed or exempted.

WHMIS (Canada) : Not controlled under WHMIS (Canada).

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 8/10/2015.

Section 16. Other information

Key to abbreviations

- : ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO Lithoplex® MP Grease No. 2



Section 1. Identification

GHS product identifier	: CITGO Lithoplex® MP Grease No. 2
Synonyms	: Lubricating grease; CITGO® Material Code: 665340001
Code	: 655340001
MSDS #	: 655340001
Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number	: Technical Contact: (800) 248-4684 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300 (United States Only)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Material injected into the skin from high-pressure leaks can cause severe injury. Most damage occurs during the first few hours. Seek medical attention immediately. Surgical removal of material may be necessary.

Precautionary statements

General : Avoid contact with eyes, skin and clothing. IF SWALLOWED: Do NOT induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

Prevention : Wear eye or face protection. Wash hands thoroughly after handling.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : Injection of petroleum hydrocarbons requires immediate medical attention

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Lubricating grease;
 CITGO® Material Code: 665340001

CAS number/other identifiers

CAS number : Not applicable.

Ingredient name	%	CAS number
Zinc and zinc compounds	0.5 - 1.5	68649-42-3

* = Various ** = Mixture *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
- Ingestion** : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : No specific fire or explosion hazard.

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

- Unsuitable extinguishing media** : None known.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
metal oxide/oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Do not apply heat or flame to stockpiled material. Rotate stock to reduce the potential for hot spots. Do not store with oxidizers. Minimize dust creation by keeping material moist and/or covered.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None identified.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety glasses with side shields. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

- Physical state** : Solid. [Tacky]
- Color** : Dark gray.
- Odor** : Petroleum.
- pH** : Not available.
- Boiling point/boiling range** : Not available.
- Flash point** : Open cup: >150°C (>302°F) [Estimated]
- Evaporation rate** : <1 (n-butyl acetate. = 1)
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : <0.013 kPa (<0.1 mm Hg) [room temperature]
- Vapor density** : >10 [Air = 1]
- Relative density** : 0.95
- Density lbs/gal** : Estimated 7.92 lbs/gal
- Gravity, °API** : Estimated 17 @ 60 F
- Solubility** : Insoluble in the following materials: cold water.
- NLGI Grade** : 2

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Zinc and zinc compounds	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	2890 mg/kg	-

Conclusion/Summary :

Section 11. Toxicological information

Distillates (petroleum), hydrotreated heavy naphthenic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Distillates (petroleum), hydrotreated heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Zinc and zinc compounds: INHALATION (LC50), Acute: > 1310 mg/L (Rat screen level)(4 hours).

DRAIZE EYE, Acute: Moderate to severe eye irritant. (Rabbit).

DRAIZE DERMAL, Acute: Mild to moderate skin irritant. (Rabbit).

BUEHLER DERMAL, Acute: Non-sensitizing. (Guinea Pig).

28-Day DERMAL, Sub-Chronic: Severe skin irritant. (Rabbit). Reported reduced food consumption resulting in weight loss and testicular atrophy.

Irritation/Corrosion

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Conclusion/Summary : No additional information.

Carcinogenicity

Conclusion/Summary : No additional information.

Reproductive toxicity

Conclusion/Summary : No additional information.

Teratogenicity

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Dermal.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.

Ingestion : Irritating to mouth, throat and stomach.

Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Potential chronic health effects

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

- Conclusion/Summary** : Not available.

Persistence and degradability

- Conclusion/Summary** : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

- Soil/water partition coefficient (K_{oc})** : Not available.

- Other adverse effects** : No known significant effects or critical hazards.

Section 13. Disposal considerations

- Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.

Clean Water Act (CWA) 307: Zinc and zinc compounds

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Zinc and zinc compounds	No.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Zinc and zinc compounds	68649-42-3	<2

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Section 15. Regulatory information

State regulations

- Massachusetts** : None of the components are listed.
New York : None of the components are listed.
New Jersey : The following components are listed: ZINC compounds
Pennsylvania : The following components are listed: ZINC COMPOUNDS

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
carbon black respirable	<0.1	Yes.	No.	No.	No.

International regulations

- International lists** :
- Australia inventory (AICS):** All components are listed or exempted.
 - China inventory (IECSC):** All components are listed or exempted.
 - Japan inventory:** Not determined.
 - Korea inventory:** All components are listed or exempted.
 - Malaysia Inventory (EHS Register):** Not determined.
 - New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.
 - Philippines inventory (PICCS):** All components are listed or exempted.
 - Taiwan inventory (CSNN):** Not determined.
- Canada inventory** : All components are listed or exempted.
EU Inventory : All components are listed or exempted.
WHMIS (Canada) : Not controlled under WHMIS (Canada).

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

- Date of issue/Date of revision** : 8/10/2015.

Key to abbreviations

- : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

Notice to reader

Date of issue/Date of revision : 8/10/2015.

Section 16. Other information

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET


CITGO Lithoplex® RT Grease No. 1



Section 1. Identification

GHS product identifier	: CITGO Lithoplex® RT Grease No. 1
Synonyms	: Lubricating grease; CITGO® Material Code: 655343001
Material uses	: Lubricating grease
Code	: 655343001
MSDS #	: 655343001
Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number	: Technical Contact: (800) 248-4684 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300 (United States Only)

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
GHS label elements	
Hazard pictograms	: 
Signal word	: Warning
Hazard statements	: Causes serious eye irritation. Injection under the skin can cause severe injury. Most damage occurs in the first few hours. Initial symptoms may be minimal.
Precautionary statements	
General	: Avoid contact with eyes, skin and clothing. IF SWALLOWED: Do NOT induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.
Prevention	: Wear eye or face protection. Wash hands thoroughly after handling.
Response	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	: Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: Injection of petroleum hydrocarbons requires immediate medical attention

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Lubricating grease;
 CITGO® Material Code: 655343001

CAS number/other identifiers

CAS number : Not applicable.

Ingredient name	%	CAS number
zinc compounds		

* = Various ** = Mixture *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
- Ingestion** : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : No specific fire or explosion hazard.

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Do not apply heat or flame to stockpiled material. Rotate stock to reduce the potential for hot spots. Do not store with oxidizers. Minimize dust creation by keeping material moist and/or covered.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None identified.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety glasses with side shields. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

- Physical state** : Solid. [Smooth texture]
- Color** : Red.
- Odor** : Mild petroleum odor
- pH** : Not available.
- Boiling point/boiling range** : Not available.
- Flash point** : Open cup: >150°C (>302°F) [Cleveland.]
- Evaporation rate** : <1 (butyl acetate = 1)
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : <0.13 kPa (<1 mm Hg) [room temperature]
- Vapor density** : >10 [Air = 1]
- Relative density** : 0.93
- Density lbs/gal** : Estimated 7.75 lbs/gal
- Gravity, °API** : Estimated 21 @ 60 F
- Solubility** : Insoluble in the following materials: cold water.
- NLGI Grade** : 1

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Zinc and zinc compounds	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	2890 mg/kg	-

Conclusion/Summary :

Section 11. Toxicological information

Distillates (petroleum), hydrotreated heavy naphthenic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Distillates (petroleum), hydrotreated heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Zinc and zinc compounds: INHALATION (LC50), Acute: > 1310 mg/L (Rat screen level)(4 hours).

DRAIZE EYE, Acute: Moderate to severe eye irritant. (Rabbit).

DRAIZE DERMAL, Acute: Mild to moderate skin irritant. (Rabbit).

BUEHLER DERMAL, Acute: Non-sensitizing. (Guinea Pig).

28-Day DERMAL, Sub-Chronic: Severe skin irritant. (Rabbit). Reported reduced food consumption resulting in weight loss and testicular atrophy.

Irritation/Corrosion

- Skin** : No additional information.
- Eyes** : No additional information.
- Respiratory** : No additional information.

Sensitization

- Skin** : No additional information.
- Respiratory** : No additional information.

Mutagenicity

- Conclusion/Summary** : No additional information.

Carcinogenicity

- Conclusion/Summary** : No additional information.

Reproductive toxicity

- Conclusion/Summary** : No additional information.

Teratogenicity

- Conclusion/Summary** : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

- Information on the likely routes of exposure** : Routes of entry anticipated: Dermal.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
- Ingestion** : Irritating to mouth, throat and stomach.

Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Potential chronic health effects

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

- Conclusion/Summary** : Not available.

Persistence and degradability

- Conclusion/Summary** : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

- Soil/water partition coefficient (K_{oc})** : Not available.

- Other adverse effects** : No known significant effects or critical hazards.

Section 13. Disposal considerations

- Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not available.	Not available.
UN proper shipping name	-	Not available.	Not available.
Transport hazard class(es)	-	Not available.	Not available.
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.

Clean Water Act (CWA) 307: Zinc and zinc compounds

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Zinc and zinc compounds	No.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Zinc Compounds lead	- 7439-92-1	<2 trace
Supplier notification	zinc compounds	-	<2

Section 15. Regulatory information

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: Polymer
New York : None of the components are listed.
New Jersey : The following components are listed: ZINC compounds; Polymer
Pennsylvania : The following components are listed: ZINC COMPOUNDS; Polymer

International regulations

- International lists** : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: At least one component is not listed.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.
- Canada inventory** : All components are listed or exempted.
EU Inventory : All components are listed or exempted.
WHMIS (Canada) : Not controlled under WHMIS (Canada).

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

- Date of issue/Date of revision** : 8/10/2015.

Key to abbreviations

- : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

Notice to reader

Section 16. Other information

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET


CITGO Lithoplex® RT Grease No. 2



Section 1. Identification

GHS product identifier	: CITGO Lithoplex® RT Grease No. 2
Synonyms	: Lubricating grease; CITGO® Material Code: 655344001
Material uses	: Lubricating grease
Code	: 655344001
MSDS #	: 655344001
Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number	: Technical Contact: (800) 248-4684 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300 (United States Only)

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
GHS label elements	
Hazard pictograms	: 
Signal word	: Warning
Hazard statements	: Causes serious eye irritation. Injection under the skin can cause severe injury. Most damage occurs in the first few hours. Initial symptoms may be minimal.
Precautionary statements	
General	: Avoid contact with eyes, skin and clothing. IF SWALLOWED: Do NOT induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.
Prevention	: Wear eye or face protection. Wash hands thoroughly after handling.
Response	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	: Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: Injection of petroleum hydrocarbons requires immediate medical attention

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Lubricating grease;
 CITGO® Material Code: 655344001

CAS number/other identifiers

CAS number : Not applicable.

Ingredient name	%	CAS number
zinc compounds	-	-

* = Various ** = Mixture *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
- Ingestion** : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : No specific fire or explosion hazard.

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Do not apply heat or flame to stockpiled material. Rotate stock to reduce the potential for hot spots. Do not store with oxidizers. Minimize dust creation by keeping material moist and/or covered.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None identified.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety glasses with side shields. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

- Physical state** : Solid. [Smooth texture]
- Color** : Red.
- Odor** : Petroleum.
- pH** : Not available.
- Boiling point/boiling range** : Not available.
- Flash point** : Open cup: >150°C (>302°F) [Estimated]
- Evaporation rate** : <1 (butyl acetate = 1)
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : <0.0013 kPa (<0.01 mm Hg) [room temperature]
- Vapor density** : >10 [Air = 1]
- Relative density** : 0.93
- Density lbs/gal** : Estimated 7.75 lbs/gal
- Gravity, °API** : Estimated 21 @ 60 F
- Solubility** : Insoluble in the following materials: cold water.
- NLGI Grade** : 2

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Zinc and zinc compounds	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	2890 mg/kg	-

Conclusion/Summary :

Section 11. Toxicological information

Distillates (petroleum), hydrotreated heavy naphthenic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Distillates (petroleum), hydrotreated heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Zinc and zinc compounds: INHALATION (LC50), Acute: > 1310 mg/L (Rat screen level)(4 hours).

DRAIZE EYE, Acute: Moderate to severe eye irritant. (Rabbit).

DRAIZE DERMAL, Acute: Mild to moderate skin irritant. (Rabbit).

BUEHLER DERMAL, Acute: Non-sensitizing. (Guinea Pig).

28-Day DERMAL, Sub-Chronic: Severe skin irritant. (Rabbit). Reported reduced food consumption resulting in weight loss and testicular atrophy.

Irritation/Corrosion

- Skin** : No additional information.
- Eyes** : No additional information.
- Respiratory** : No additional information.

Sensitization

- Skin** : No additional information.
- Respiratory** : No additional information.

Mutagenicity

- Conclusion/Summary** : No additional information.

Carcinogenicity

- Conclusion/Summary** : No additional information.

Reproductive toxicity

- Conclusion/Summary** : No additional information.

Teratogenicity

- Conclusion/Summary** : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Dermal.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
- Ingestion** : Irritating to mouth, throat and stomach.

Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Potential chronic health effects

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

- Conclusion/Summary** : Not available.

Persistence and degradability

- Conclusion/Summary** : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

- Soil/water partition coefficient (K_{oc})** : Not available.

- Other adverse effects** : No known significant effects or critical hazards.

Section 13. Disposal considerations

- Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not available.	Not available.
UN proper shipping name	-	Not available.	Not available.
Transport hazard class(es)	-	Not available.	Not available.
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.

Clean Water Act (CWA) 307: Zinc and zinc compounds

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Zinc and zinc compounds	No.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Zinc Compounds lead	7439-92-1	<2 trace
Supplier notification	Zinc Compounds	-	<2

Section 15. Regulatory information

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: Polymer
- New York** : None of the components are listed.
- New Jersey** : The following components are listed: ZINC compounds; Polymer
- Pennsylvania** : The following components are listed: ZINC COMPOUNDS; Polymer

International regulations

- International lists** :
- Australia inventory (AICS)**: All components are listed or exempted.
 - China inventory (IECSC)**: All components are listed or exempted.
 - Japan inventory**: At least one component is not listed.
 - Korea inventory**: Not determined.
 - Malaysia Inventory (EHS Register)**: Not determined.
 - New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
 - Philippines inventory (PICCS)**: All components are listed or exempted.
 - Taiwan inventory (CSNN)**: Not determined.
- Canada inventory** : All components are listed or exempted.
- EU Inventory** : All components are listed or exempted.
- WHMIS (Canada)** : Not controlled under WHMIS (Canada).

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

- Date of issue/Date of revision** : 8/10/2015.

Key to abbreviations

- : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

Notice to reader

Section 16. Other information

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO Premium Gear Oil (MP), SAE 80W-90



Section 1. Identification

GHS product identifier : CITGO Premium Gear Oil (MP), SAE 80W-90

Synonyms : Gear oil

Code : 631310001

Supplier's details : CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210
sdsvend@citgo.com

Emergency telephone number : Technical Contact: (800) 248-4684
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

General : Avoid contact with eyes, skin and clothing. May be harmful if swallowed. IF IN EYES: Rinse cautiously with water for several minutes. IF SWALLOWED: DO NOT induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

Prevention : Not applicable.

Response : Not applicable.

Storage : Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Gear oil

CAS number/other identifiers

CAS number : Not applicable.

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Section 3. Composition/information on ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
phosphorus oxides

Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None identified.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Amber to dark amber
- Odor** : Petroleum.
- pH** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: 174°C (345.2°F) [Pensky-Martens [ASTM D-93]]
Open cup: 231°C (447.8°F) [Cleveland.]
- Evaporation rate** : <1 (n-butyl acetate. = 1)
- Lower and upper explosive (flammable) limits** : Lower: 1%
Upper: 7%
- Vapor pressure** : <0.0013 kPa (<0.01 mm Hg) [room temperature]
- Vapor density** : >1 [Air = 1]
- Relative density** : 0.89
- Density lbs/gal** : Estimated 7.42 lbs/gal
- Gravity, °API** : Estimated 27 @ 60 F
- Solubility** : Insoluble in the following materials: cold water and hot water.

Section 9. Physical and chemical properties

Auto-ignition temperature	: 400°C (752°F)
Viscosity	: Kinematic (room temperature): 1.48 cm ² /s (148 cSt) Kinematic (40°C (104°F)): 1.85 cm ² /s (185 cSt)

Section 10. Stability and reactivity

Reactivity	: Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary	: Distillates (petroleum), hydrotreated heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.
---------------------------	---

Irritation/Corrosion

Skin	: No additional information.
Eyes	: No additional information.
Respiratory	: No additional information.

Sensitization

Skin	: No additional information.
Respiratory	: No additional information.

Mutagenicity

Conclusion/Summary	: No additional information.
---------------------------	------------------------------

Carcinogenicity

Conclusion/Summary	: No additional information.
---------------------------	------------------------------

Reproductive toxicity

Conclusion/Summary	: No additional information.
---------------------------	------------------------------

Teratogenicity

Conclusion/Summary	: No additional information.
---------------------------	------------------------------

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Section 11. Toxicological information

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Dermal.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Potential chronic health effects

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.

Clean Water Act (CWA) 311: Phosphoric acid

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
ethylene oxide	trace	Yes.	1000	-	10	-

Section 15. Regulatory information

SARA 304 RQ : 141093474.4 lbs / 64056437.4 kg [19013393.8 gal / 71973525.2 L]

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
ethyl acrylate	<0.001	Yes.	No.	No.	No.
ethylene oxide	trace	Yes.	Yes.	Yes.	Yes.
1,4-dioxane	trace	Yes.	No.	Yes.	No.

International regulations

International lists

: **Australia inventory (AICS):** All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.

Canada inventory : All components are listed or exempted.

EU Inventory : All components are listed or exempted.

WHMIS (Canada) : Not controlled under WHMIS (Canada).

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 12/15/2014.

Section 16. Other information

Key to abbreviations

- : ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO Premium Lithium EP-1 Grease



Section 1. Identification

GHS product identifier	: CITGO Premium Lithium EP-1 Grease
Synonyms	: Lubricating grease; CITGO® Material Code: 655211001
Code	: 655211001
MSDS #	: 655211001
Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number	: Technical Contact: (800) 248-4684 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300 (United States Only)

Section 2. Hazards identification

OSHA/HCS status	: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Classification of the substance or mixture	: Not classified.
GHS label elements	
Signal word	: Warning
Hazard statements	: Injection under the skin can cause severe injury. Most damage occurs in the first few hours. Initial symptoms may be minimal.
Precautionary statements	
General	: Avoid contact with eyes, skin and clothing. IF IN EYES: Rinse cautiously with water for several minutes. IF SWALLOWED: Do NOT induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.
Prevention	: Not applicable.
Response	: Not applicable.
Storage	: Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: Injection of petroleum hydrocarbons requires immediate medical attention

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Lubricating grease; CITGO® Material Code: 655211001
CAS number/other identifiers	
CAS number	: Not applicable.

Section 3. Composition/information on ingredients

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : No specific fire or explosion hazard.

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Hazardous thermal decomposition products** : No specific data.

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Do not apply heat or flame to stockpiled material. Rotate stock to reduce the potential for hot spots. Do not store with oxidizers. Minimize dust creation by keeping material moist and/or covered.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None identified.

Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Safety glasses with side shields. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

- Physical state** : Solid. [Smooth texture]
- Color** : Dark amber.
- Odor** : Mild petroleum odor
- pH** : Not available.
- Boiling point/boiling range** : Not available.
- Flash point** : Open cup: >150°C (>302°F) [Estimated]
- Evaporation rate** : <1 (butyl acetate = 1)
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : <0.013 kPa (<0.1 mm Hg) [room temperature]
- Vapor density** : >10 [Air = 1]
- Relative density** : 0.9
- Density lbs/gal** : Estimated 7.5 lbs/gal
- Gravity, °API** : Estimated 26 @ 60 F
- Solubility** : Insoluble in the following materials: cold water.
- NLGI Grade** : 1

Section 10. Stability and reactivity

Reactivity	: Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary	: Distillates (petroleum), hydrotreated heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. Distillates (petroleum), hydrotreated heavy naphthenic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.
---------------------------	--

Irritation/Corrosion

Skin	: No additional information.
Eyes	: No additional information.
Respiratory	: No additional information.

Sensitization

Skin	: No additional information.
Respiratory	: No additional information.

Mutagenicity

Conclusion/Summary	: No additional information.
---------------------------	------------------------------

Carcinogenicity

Conclusion/Summary	: No additional information.
---------------------------	------------------------------

Reproductive toxicity

Conclusion/Summary	: No additional information.
---------------------------	------------------------------

Teratogenicity

Conclusion/Summary	: No additional information.
---------------------------	------------------------------

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Section 11. Toxicological information

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Dermal.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Potential chronic health effects

- General** : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : D018

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not available.	Not available.
UN proper shipping name	-	Not available.	Not available.
Transport hazard class(es)	-	Not available.	Not available.
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: Zinc and zinc compounds; Benzene; Toluene; Ethylbenzene; Naphthalene
Clean Water Act (CWA) 311: Benzene; Toluene; Xylenes, mixed isomers; Ethylbenzene; Naphthalene
 This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Section 15. Regulatory information

Classification : Not applicable.

Composition/information on ingredients

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Toluene	<0.001	No.	Yes.	No.	7000 µg/day (ingestion)
Benzene	<0.001	Yes.	Yes.	6.4 µg/day (ingestion) 13 µg/day (inhalation)	24 µg/day (ingestion) 49 µg/day (inhalation)
Ethylbenzene	<0.001	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
Naphthalene	<0.0001	Yes.	No.	Yes.	No.
Cumene	<0.0001	Yes.	No.	No.	No.

International regulations

International lists

- : **Australia inventory (AICS):** All components are listed or exempted.
- : **China inventory (IECSC):** All components are listed or exempted.
- : **Japan inventory:** At least one component is not listed.
- : **Korea inventory:** Not determined.
- : **Malaysia Inventory (EHS Register):** Not determined.
- : **New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.
- : **Philippines inventory (PICCS):** All components are listed or exempted.
- : **Taiwan inventory (CSNN):** Not determined.

Canada inventory : All components are listed or exempted.

EU Inventory : All components are listed or exempted.

WHMIS (Canada) : Not controlled under WHMIS (Canada).

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Section 16. Other information

History

Date of issue/Date of revision : 6/26/2015.

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO Premium Lithium EP-2 Grease



Section 1. Identification

GHS product identifier	: CITGO Premium Lithium EP-2 Grease
Synonyms	: Lubricating grease; CITGO® Material Code: 655212001
Material uses	: Lubricating grease
Code	: 655212001
MSDS #	: 655212001
Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number	: Technical Contact: (800) 248-4684 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300 (United States Only)

Section 2. Hazards identification

OSHA/HCS status	: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Classification of the substance or mixture	: Not classified.
GHS label elements	
Signal word	: Warning
Hazard statements	: Injection under the skin can cause severe injury. Most damage occurs in the first few hours. Initial symptoms may be minimal.
Precautionary statements	
General	: Avoid contact with eyes, skin and clothing. IF IN EYES: Rinse cautiously with water for several minutes. IF SWALLOWED: Do NOT induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.
Prevention	: Not applicable.
Response	: Not applicable.
Storage	: Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: Injection of petroleum hydrocarbons requires immediate medical attention

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Lubricating grease; CITGO® Material Code: 655212001
CAS number/other identifiers	
CAS number	: Not applicable.

Date of issue/Date of revision : 8/10/2015.

1/9

Section 3. Composition/information on ingredients

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects. acute

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : No specific fire or explosion hazard.

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Do not apply heat or flame to stockpiled material. Rotate stock to reduce the potential for hot spots. Do not store with oxidizers. Minimize dust creation by keeping material moist and/or covered.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None identified.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Safety glasses with side shields. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

- Physical state** : Solid. [Smooth texture]
- Color** : Dark amber.
- Odor** : Mild petroleum odor
- pH** : Not available.
- Boiling point/boiling range** : Not available.
- Flash point** : Open cup: >150°C (>302°F) [Estimated]
- Evaporation rate** : <1 (butyl acetate = 1)
- Lower and upper explosive (flammable) limits** : Lower: 1%
Upper: 7%
- Vapor pressure** : <0.013 kPa (<0.1 mm Hg) [room temperature]
- Vapor density** : >10 [Air = 1]
- Relative density** : 0.91
- Density lbs/gal** : Estimated 7.59 lbs/gal
- Gravity, °API** : Estimated 24 @ 60 F
- Solubility** : Insoluble in the following materials: cold water.

Section 9. Physical and chemical properties

NLGI Grade : 2

Section 10. Stability and reactivity

Reactivity	: Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : **Distillates (petroleum), hydrotreated heavy paraffinic**: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.
Distillates (petroleum), hydrotreated heavy naphthenic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Irritation/Corrosion

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Conclusion/Summary : No additional information.

Carcinogenicity

Conclusion/Summary : No additional information.

Reproductive toxicity

Conclusion/Summary : No additional information.

Teratogenicity

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Dermal.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Potential chronic health effects

- General** : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : D018

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: Zinc and zinc compounds; Naphthalene; Benzene; Toluene; Ethylbenzene
Clean Water Act (CWA) 311: Naphthalene; Benzene; Toluene; Xylenes, mixed isomers; Ethylbenzene
 This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Section 15. Regulatory information

Classification : Not applicable.

Composition/information on ingredients

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Toluene	<0.01	No.	Yes.	No.	7000 µg/day (ingestion)
Ethylbenzene	<0.001	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
Benzene	<0.001	Yes.	Yes.	6.4 µg/day (ingestion) 13 µg/day (inhalation)	24 µg/day (ingestion) 49 µg/day (inhalation)
Naphthalene	<0.0001	Yes.	No.	Yes.	No.
Cumene	<0.0001	Yes.	No.	No.	No.

International regulations

International lists

: **Australia inventory (AICS):** Not determined.

China inventory (IECSC): All components are listed or exempted.

Japan inventory: At least one component is not listed.

Korea inventory: Not determined.

Malaysia Inventory (EHS Register): Not determined.

New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.

Philippines inventory (PICCS): All components are listed or exempted.

Taiwan inventory (CSNN): Not determined.

Canada inventory : All components are listed or exempted.

EU Inventory : All components are listed or exempted.

WHMIS (Canada) : Not controlled under WHMIS (Canada).

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Section 16. Other information

History

Date of issue/Date of revision : 8/10/2015.

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO SUPERGARD® Motor Oil, SAE 10W-30



Section 1. Identification

GHS product identifier : CITGO SUPERGARD® Motor Oil, SAE 10W-30

Synonyms : Not available.

Code : 620813001

Supplier's details : CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210
sdsvend@citgo.com

Emergency telephone number : Technical Contact: (800) 248-4684
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

General : Avoid contact with eyes, skin and clothing. May be harmful if swallowed. IF IN EYES: Rinse cautiously with water for several minutes. If swallowed, do not induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

Prevention : Not applicable.

Response : Not applicable.

Storage : Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Section 3. Composition/information on ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
phosphorus oxides
metal oxide/oxides

Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
- Bulk Storage Conditions:** Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None identified.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Amber to dark amber
- Odor** : Mild petroleum odor
- pH** : Not available.
- Boiling point** : Not available.
- Flash point** : Open cup: 231°C (447.8°F) [Cleveland.]
- Evaporation rate** : <1 (butyl acetate = 1)
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : <0.0013 kPa (<0.01 mm Hg) [room temperature]
- Vapor density** : >1 [Air = 1]
- Relative density** : 0.88
- Density lbs/gal** : Estimated 7.34 lbs/gal
- Gravity, °API** : Estimated 29 @ 60 F
- Solubility** : Insoluble in the following materials: cold water.

Section 9. Physical and chemical properties

Viscosity : Kinematic (40°C (104°F)): 0.69 cm²/s (69 cSt)

Section 10. Stability and reactivity

Reactivity : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : **Distillates (petroleum), hydrotreated heavy paraffinic**: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.
Distillates (petroleum), solvent-dewaxed heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Irritation/Corrosion

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Conclusion/Summary : No additional information.

Carcinogenicity

Conclusion/Summary : No additional information.

Reproductive toxicity

Conclusion/Summary : No additional information.

Teratogenicity

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Dermal.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Potential chronic health effects

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis (phosphorodithioate); Zinc alkyl dithiophosphate
Clean Water Act (CWA) 311: vinyl acetate
 This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

Section 15. Regulatory information

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
vinyl acetate	<0.01	Yes.	1000	129	5000	644.8

SARA 304 RQ : 61728395.1 lbs / 28024691.4 kg [8412886.6 gal / 31846240.2 L]

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

International regulations

International lists

: **Australia inventory (AICS)**: All components are listed or exempted.

China inventory (IECSC): Not determined.

Japan inventory: Not determined.

Korea inventory: All components are listed or exempted.

Malaysia Inventory (EHS Register): Not determined.

New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.

Philippines inventory (PICCS): All components are listed or exempted.

Taiwan inventory (CSNN): Not determined.

Canada inventory : All components are listed or exempted.

EU Inventory : At least one component is not listed in EINECS but all such components are listed in ELINCS.

Please contact your supplier for information on the inventory status of this material.

WHMIS (Canada) : Not controlled under WHMIS (Canada).

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 11/19/2014.

Section 16. Other information

Key to abbreviations

- : ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO Synthetic Gear Lubricant, SAE 80W-140



Section 1. Identification

GHS product identifier : CITGO Synthetic Gear Lubricant, SAE 80W-140
Synonyms : Synthetic Gear Lubricant
Material uses : Synthetic Gear Lubricant
Code : 631814001

Supplier's details : CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210
sdsvend@citgo.com

Emergency telephone number (with hours of operation) : Technical Contact: (800) 248-4684
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

General : Avoid contact with eyes, skin and clothing. Thoroughly wash exposed areas and clothing with soap and water. IF IN EYES: Rinse cautiously with water for several minutes. IF SWALLOWED: Do not induce vomiting. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

Prevention : Not applicable.

Response : Not applicable.

Storage : Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Synthetic Gear Lubricant

CAS number/other identifiers

CAS number : Not applicable.

Section 3. Composition/information on ingredients

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Avoid skin contact with liquid. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Leather boots are not protective for liquid contact.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Amber.
- Odor** : Characteristic.
- pH** : Not available.
- Boiling point** : Not available.
- Flash point** : Open cup: 207°C (404.6°F) [Cleveland.]
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 0.897
- Density lbs/gal** : Estimated 7.48 lbs/gal

Section 9. Physical and chemical properties

Gravity, °API	: Estimated 26 @ 60 F
Viscosity	: Kinematic (40°C (104°F)): 2.84 cm ² /s (284 cSt)

Section 10. Stability and reactivity

Reactivity	: Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Conclusion/Summary : No additional information.

Irritation/Corrosion

Not available.

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Not available.

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Not available.

Conclusion/Summary : No additional information.

Carcinogenicity

Not available.

Conclusion/Summary : No additional information.

Reproductive toxicity

Not available.

Conclusion/Summary : No additional information.

Teratogenicity

Not available.

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Not available.

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Section 12. Ecological information

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Oil: The product(s) represented by this SDS is (are) regulated as “oil” under 49 CFR Part 130. Shipments by rail or highway in packaging having a capacity of 3500 gallons or more or in a quantity greater 42,000 gallons are subject to these requirements. In addition, mixtures containing 10% or more of this product may be subject to these requirements.

Special precautions for user : **Transport within user’s premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
Clean Water Act (CWA) 311: aniline

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
aniline	<0.01	Yes.	1000	117.6	5000	587.9

SARA 304 RQ : 246913580.2 lbs / 112098765.4 kg [33013780.3 gal / 124970753 L]

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

International regulations

WHMIS (Canada) : Not controlled under WHMIS (Canada).

International lists

National inventory

United States : All components are listed or exempted.

Australia : All components are listed or exempted.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Europe : All components are listed or exempted.

Japan : **Japan inventory (ENCS)**: All components are listed or exempted.
Japan inventory (ISHL): Not determined.

Malaysia : Not determined.

New Zealand : All components are listed or exempted.

Philippines : All components are listed or exempted.

Republic of Korea : All components are listed or exempted.

Taiwan : All components are listed or exempted.

Turkey : Not determined.

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

Date of issue/Date of revision : 1/24/2017

Date of previous issue : No previous validation

Version : 1

Key to abbreviations

: ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

✔ Indicates information that has changed from previously issued version.

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

SAFETY DATA SHEET

CITGO Gasolines, All Grades Unleaded



Section 1. Identification

- GHS product identifier** : CITGO Gasolines, All Grades Unleaded
- Synonyms** : Unleaded Gasolines; Conventional Unleaded Gasoline with Ethanol; Unleaded Gasoline with Ethanol; Reformulated Unleaded Gasoline with Ethanol; Motor Gasolines; Petrol; Automobile Motor Fuels; Finished Gasolines; Gasoline, Regular Unleaded; Gasoline, Mid-grade Unleaded; Gasoline, Premium Unleaded; Reformulated Gasolines (RFG); Reformulated Motor Fuels; Oxygenated Motor Spirits; Gasoline, Regular Reformulated; Gasoline, Mid-grade Reformulated; Gasoline, Premium Reformulated; RBOB; GTAB; Arizona Clean Burning Gasoline (CBG); CARB Gasoline with Ethanol.
- Material uses** : Fuel.
- Code** : Various
- MSDS #** : UNLEAD
- Supplier's details** : CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210
sdsvend@citgo.com
- Emergency telephone number (with hours of operation)** : Technical Contact: (800) 248-4684
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

Section 2. Hazards identification

- OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 2
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2B
GERM CELL MUTAGENICITY - Category 1
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION (Fertility) - Category 2
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (central nervous system (CNS)) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, central nervous system (CNS), hearing organs) - Category 1
ASPIRATION HAZARD - Category 1
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Hazard pictograms



Signal word

: Danger

Section 2. Hazards identification

- Hazard statements** : Highly flammable liquid and vapor.
Causes skin and eye irritation.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May be fatal if swallowed and enters airways.
May cause damage to organs. (central nervous system (CNS))
May cause respiratory irritation.
May cause drowsiness or dizziness.
Causes damage to organs through prolonged or repeated exposure. (blood system, central nervous system (CNS), hearing organs)
Very toxic to aquatic life with long lasting effects.
- Precautionary statements**
- General** : Do not syphon by mouth.
- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
- Response** : Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Call a POISON CENTER or physician. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- Storage** : Store locked up. Store in a well-ventilated place. Keep cool.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and receiving equipment. These alone may be insufficient to remove static electricity. Avoid contact with skin and clothing. Wash thoroughly after handling.
- Hazards not otherwise classified** : Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor may cause flash fire or explosion. Prolonged or repeated contact may dry skin and cause irritation. Repeated or prolonged overexposure to certain chemicals in this product may exacerbate the hearing loss effects associated with noise exposure.

Section 3. Composition/information on ingredients

- Substance/mixture** : Substance
- Other means of identification** : Unleaded Gasolines; Conventional Unleaded Gasoline with Ethanol; Unleaded Gasoline with Ethanol; Reformulated Unleaded Gasoline with Ethanol; Motor Gasolines; Petrol; Automobile Motor Fuels; Finished Gasolines; Gasoline, Regular Unleaded; Gasoline, Mid-grade Unleaded; Gasoline, Premium Unleaded; Reformulated Gasolines (RFG); Reformulated Motor Fuels; Oxygenated Motor Spirits; Gasoline, Regular Reformulated; Gasoline, Mid-grade Reformulated; Gasoline, Premium Reformulated; RBOB; GTAB; Arizona Clean Burning Gasoline (CBG); CARB Gasoline with Ethanol.

CAS number/other identifiers

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
Pentanes	<20	109-66-0
Toluene	<20	108-88-3
Xylene	<20	1330-20-7
Hexanes, mixture of isomers	<15	*
Heptane	<15	142-82-5
Ethanol	0 - 10	64-17-5
Butane	0 - 10	106-97-8
benzene	<4.9	71-43-2
Ethylbenzene	<4	100-41-4
Cumene	<4	98-82-8
n-hexane	<3	110-54-3
Cyclohexane	<3	110-82-7
1,2,4-trimethylbenzene	<2	95-63-6
Naphthalene	<2	91-20-3

* = Various ** = Mixture *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. Breathing high concentrations can cause irregular heartbeats which can be fatal.
- Skin contact** : Causes skin irritation. Defatting to the skin.

Section 4. First aid measures

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Breathing high concentrations can cause irregular heartbeats which may be fatal. Repeated or prolonged overexposure to solvents can cause brain or other nervous system damage. The symptoms can include the loss of memory, the loss of intellectual capacity and the loss of coordination. Repeated or prolonged overexposure to certain chemicals in this product may exacerbate the hearing loss effects associated with noise exposure. Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : This material (or a component) may sensitize the heart to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material. If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.

Specific treatments : Treat symptomatically and supportively.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that gas or vapor is still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use caution when applying carbon dioxide in confined spaces.
SMALL FIRE: Steam, CO₂, dry chemical or inert gas (e.g., nitrogen). LARGE FIRE: Use foam, water fog or water spray. Water fog and spray are effective in cooling containers and adjacent structures. However, water can cause frothing and/or may not extinguish the fire. Water can be used to cool the external walls of vessels to prevent excessive pressure, ignition or explosion.

Unsuitable extinguishing media : Do not use water jet.

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static accumulation may be significantly increased by the presence of small quantities of water or other contaminants. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: Use only as a motor fuel. Do not syphon by mouth. Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Non equilibrium conditions may increase the fire hazard associated with this product. Always bond receiving containers to the fill pipe before and during loading. Always confirm that receiving container is properly grounded. Bonding and grounding alone may be inadequate to eliminate fire and explosion hazards. Carefully review operations that may increase the risks such as tank and container filling, tank cleaning, sampling, gauging, loading, filtering, mixing, agitation, etc. In addition to bonding and grounding, efforts to mitigate the hazards may include, but are not limited to, ventilation, inerting and/or reduction of transfer velocities. Always keep nozzle in contact with the container throughout the loading process. Do NOT fill any portable container in or on a vehicle.

Special precautions, such as reduced loading rates and increased monitoring, must be observed during "switch loading" operations (i.e., loading this material in tanks or shipping compartments that previously contained a dissimilar product).

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Head spaces in tanks and other containers may contain a mixture of air and vapor in the flammable range. Vapor may be ignited by static discharge. Storage area must meet OSHA requirements and applicable fire codes. Additional information regarding the design and control of hazards associated with the handling and storage of flammable and combustible liquids may be found in professional and industrial documents including, but not limited to, the National Fire Protection Association (NFPA) publications NFPA 30 ("Flammable and Combustible Liquid Code"), NFPA 77 ("Recommended Practice on Static Electricity") and the American Petroleum Institute (API) Recommended Practice 2003, ("Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents").

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Pentanes	<p>NIOSH REL (United States, 10/2013). TWA: 120 ppm 10 hours. TWA: 350 mg/m³ 10 hours. CEIL: 610 ppm 15 minutes. CEIL: 1800 mg/m³ 15 minutes.</p> <p>ACGIH TLV (United States, 3/2016). TWA: 1000 ppm 8 hours.</p> <p>OSHA PEL (United States, 6/2016). TWA: 1000 ppm 8 hours. TWA: 2950 mg/m³ 8 hours.</p>
Toluene	<p>OSHA PEL Z2 (United States, 2/2013). TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes.</p> <p>NIOSH REL (United States, 10/2013). TWA: 100 ppm 10 hours. TWA: 375 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m³ 15 minutes.</p> <p>ACGIH TLV (United States, 3/2016). TWA: 20 ppm 8 hours.</p>
Xylene	<p>ACGIH TLV (United States, 3/2016). TWA: 100 ppm 8 hours. TWA: 434 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 6/2016). TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.</p>
Hexanes, other isomers	<p>ACGIH TLV (United States). TWA: 500 ppm 8 hours. STEL: 1000 ppm 15 minutes.</p>
Heptane	<p>ACGIH TLV (United States, 3/2016). TWA: 400 ppm 8 hours. TWA: 1640 mg/m³ 8 hours. STEL: 500 ppm 15 minutes. STEL: 2050 mg/m³ 15 minutes.</p> <p>NIOSH REL (United States, 10/2013). TWA: 85 ppm 10 hours. TWA: 350 mg/m³ 10 hours. CEIL: 440 ppm 15 minutes. CEIL: 1800 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 6/2016). TWA: 500 ppm 8 hours. TWA: 2000 mg/m³ 8 hours.</p>
Ethanol	<p>ACGIH TLV (United States). TWA: 1000 ppm 8 hours.</p> <p>ACGIH TLV (United States, 3/2016). STEL: 1000 ppm 15 minutes.</p> <p>NIOSH REL (United States, 10/2013). TWA: 1000 ppm 10 hours. TWA: 1900 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 6/2016). TWA: 1000 ppm 8 hours. TWA: 1900 mg/m³ 8 hours.</p>
Butane	<p>ACGIH TLV (United States). TWA: 800 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2013).</p>

Section 8. Exposure controls/personal protection

Benzene	<p>TWA: 800 ppm 10 hours. TWA: 1900 mg/m³ 10 hours. ACGIH TLV (United States, 3/2015). STEL: 1000 ppm 15 minutes. ACGIH TLV (United States, 3/2016). Absorbed through skin. TWA: 0.5 ppm 8 hours. TWA: 1.6 mg/m³ 8 hours. STEL: 2.5 ppm 15 minutes. STEL: 8 mg/m³ 15 minutes. NIOSH REL (United States, 10/2013). TWA: 0.1 ppm 10 hours. STEL: 1 ppm 15 minutes. OSHA PEL (United States, 6/2016). TWA: 1 ppm 8 hours. STEL: 5 ppm 15 minutes. OSHA PEL Z2 (United States, 2/2013). TWA: 10 ppm 8 hours. CEIL: 25 ppm AMP: 50 ppm 10 minutes.</p>
Ethylbenzene	<p>ACGIH TLV (United States, 3/2016). TWA: 20 ppm 8 hours. NIOSH REL (United States, 10/2013). TWA: 100 ppm 10 hours. TWA: 435 mg/m³ 10 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m³ 15 minutes. OSHA PEL (United States, 6/2016). TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.</p>
Cumene	<p>NIOSH REL (United States, 10/2013). Absorbed through skin. TWA: 50 ppm 10 hours. TWA: 245 mg/m³ 10 hours. ACGIH TLV (United States, 3/2016). TWA: 50 ppm 8 hours. OSHA PEL (United States, 6/2016). Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 245 mg/m³ 8 hours.</p>
n-Hexane	<p>NIOSH REL (United States, 10/2013). TWA: 50 ppm 10 hours. TWA: 180 mg/m³ 10 hours. ACGIH TLV (United States, 3/2016). Absorbed through skin. TWA: 50 ppm 8 hours. OSHA PEL (United States, 6/2016). TWA: 500 ppm 8 hours. TWA: 1800 mg/m³ 8 hours.</p>
Cyclohexane	<p>ACGIH TLV (United States, 3/2016). TWA: 100 ppm 8 hours. NIOSH REL (United States, 10/2013). TWA: 300 ppm 10 hours. TWA: 1050 mg/m³ 10 hours. OSHA PEL (United States, 6/2016). TWA: 300 ppm 8 hours. TWA: 1050 mg/m³ 8 hours.</p>
1,2,4-trimethylbenzene	<p>ACGIH TLV (United States, 3/2016). TWA: 25 ppm 8 hours. TWA: 123 mg/m³ 8 hours. NIOSH REL (United States, 10/2013).</p>

Section 8. Exposure controls/personal protection

Naphthalene

TWA: 25 ppm 10 hours.

TWA: 125 mg/m³ 10 hours.

ACGIH TLV (United States). Absorbed through skin.

STEL: 15 ppm 15 minutes.

ACGIH TLV (United States, 3/2016).

Absorbed through skin.

TWA: 10 ppm 8 hours.

TWA: 52 mg/m³ 8 hours.

NIOSH REL (United States, 10/2013).

TWA: 10 ppm 10 hours.

TWA: 50 mg/m³ 10 hours.

STEL: 15 ppm 15 minutes.

STEL: 75 mg/m³ 15 minutes.

OSHA PEL (United States, 6/2016).

TWA: 10 ppm 8 hours.

TWA: 50 mg/m³ 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Avoid skin contact with liquid. Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Heavy duty, industrial grade chemically resistant gloves constructed of nitrile, neoprene, polyethylene, fluoroelastomer rubber or polyvinyl chloride as approved by glove manufacturer. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Leather gloves are not protective for liquid contact.

Body protection : Avoid skin contact with liquid. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Avoid skin contact with liquid. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Leather boots are not protective for liquid contact.

Section 8. Exposure controls/personal protection

- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If an air purifying respirator is appropriate, use one equipped with cartridges rated for organic vapors.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Transparent, clear to amber or red.
- Odor** : Pungent, characteristic gasoline.
- pH** : Not applicable
- Boiling point** : 38 to 204°C (100.4 to 399.2°F)
- Flash point** : Closed cup: -43°C (-45.4°F) [Tagliabue [ASTM D-56]]
- Evaporation rate** : 7.5 (n-butyl acetate. = 1)
- Lower and upper explosive (flammable) limits** : Lower: 1.4%
Upper: 7.6%
- Vapor pressure** : 29.3 to 100 kPa (220 to 750 mm Hg) [room temperature]
- Vapor density** : 3 to 4 [Air = 1]
- Relative density** : 0.72 to 0.77
- Density lbs/gal** : Estimated 6.21 lbs/gal
- Density gm/cm³** : Not available.
- Solubility** : Very slightly soluble in the following materials: cold water.
- Auto-ignition temperature** : 280°C (536°F)
- Flow time (ISO 2431)** : Not available.
- Viscosity** : Kinematic (room temperature): <0.01 cm²/s (<1 cSt)
- Conductivity** : <50 picosiemens/meter (unadditized)

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas. Do not store with strong oxidizing agents.
- Incompatible materials** : Reactive or incompatible with the following materials:
oxidizing materials
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Toluene	LC50 Inhalation Vapor	Rat	>20 mg/l	4 hours
	LD50 Dermal	Rabbit	12267 mg/kg	-
	LD50 Oral	Rat - Male	5580 mg/kg	-
	TDL _o Oral	Rat	0.65 g/kg	-
	TDL _o Oral	Rat	1000 mg/kg	-
Xylene	LC50 Inhalation Vapor	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	6700 ppm	4 hours
	LD50 Oral	Mouse	2119 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
Hexanes, other isomers	LD50 Oral	Rat	4300 mg/kg	-
	LC50 Inhalation Vapor	Rat	48000 ppm	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
Heptane	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapor	Mouse	>40000 ppm	10 minutes
Ethanol	LC50 Inhalation Vapor	Rat	124700 mg/m ³	4 hours
	LD50 Oral	Guinea pig	5560 mg/kg	-
	LD50 Oral	Rabbit	6300 mg/kg	-
	LD50 Oral	Rat	7060 mg/kg	-
Butane	LC50 Inhalation Vapor	Mouse	680000 mg/m ³	2 hours
	LC50 Inhalation Vapor	Rat	658000 mg/m ³	4 hours
Benzene	LC50 Inhalation Vapor	Rat	10000 ppm	7 hours
	LD50 Oral	Mammal - species unspecified	5700 mg/kg	-
	LD50 Oral	Mouse	4700 mg/kg	-
	LD50 Oral	Rat	6400 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
Ethylbenzene	LD50 Oral	Rat	3500 mg/kg	-
	LC50 Inhalation Vapor	Mouse	10 g/m ³	7 hours
Cumene	LD50 Dermal	Rabbit	12300 uL/kg	-
	LD50 Oral	Rat	2.9 g/kg	-
	LD50 Oral	Rat	4000 mg/kg	-
n-Hexane	LC50 Inhalation Vapor	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	15840 mg/kg	-
Cyclohexane	LC50 Inhalation Vapor	Mouse	70000 mg/m ³	2 hours
	LD50 Oral	Rat	6240 mg/kg	-
	LD50 Oral	Rat	12705 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
1,2,4-trimethylbenzene	LDLo Oral	Rabbit	5500 mg/kg	-
	LC50 Inhalation Vapor	Rat	18000 mg/m ³	4 hours
	LD50 Oral	Mouse	6900 mg/kg	-
Naphthalene	LD50 Oral	Rat	5 g/kg	-
	LD50 Oral	Rat	490 mg/kg	-

Conclusion/Summary

pentane: Studies of pentane isomers in laboratory animals indicate exposure to extremely high levels (roughly 10 vol.%) may induce cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

toluene: Deliberate inhalation of toluene at high concentrations (e.g., glue sniffing and solvent abuse) can cause CNS depression, cardiac arrhythmias and death.

xylene: Overexposure to xylene may cause upper respiratory tract irritation, headache, cyanosis, blood serum changes, CNS damage and narcosis. Effects may be increased by the use of alcoholic beverages. Evidence of liver and kidney impairment were reported in workers recovering from a gross over-exposure.

heptane: Heptane is a CNS depressant and narcosis at elevated concentrations.

ethanol: Inhalation exposure to ethanol vapor at concentrations above applicable workplace exposure levels is expected to produce eye and mucus membrane irritation. Human exposure at concentrations from 1000 to 5000 ppm produced symptoms of narcosis, stupor and unconsciousness. Subjects exposed to ethanol vapor in concentrations between 500 and 10,000 ppm experienced coughing and smarting of the

Section 11. Toxicological information

eyes and nose. At 15,000 ppm there was continuous lacrimation and coughing. While extensive acute and chronic effects can be expected with ethanol consumption, ingestion is not expected to be a significant route of exposure to this product.

Butane: Studies in laboratory animals indicate exposure to extremely high levels of butanes (1-10 or higher vol.% in air) may cause cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

cumene: Overexposure to cumene may cause upper respiratory tract irritation and CNS depression.

n-hexane: n-Hexane is a CNS depressant and narcosis at elevated concentrations.

cyclohexane: Cyclohexane is a CNS depressant and narcosis at elevated concentrations.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Pig	-	870 Micrograms	-
	Skin - Mild irritant	Rabbit	-	24 hours 250 microliters	-
	Skin - Moderate irritant	Rabbit	-	435 milligrams	-
Xylene	Skin - Mild irritant	Rat	-	500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	8 hours 60 microliters	-
Ethanol	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 Percent	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Skin - Mild irritant	Rabbit	-	100 microliters	-
Benzene	Skin - Moderate irritant	Rabbit	-	400 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Mild irritant	Rabbit	-	88 milligrams	-
Ethylbenzene	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-
Cumene	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-
	Eyes - Mild irritant	Rabbit	-	86 milligrams	-
n-Hexane 1,2,4-trimethylbenzene Naphthalene	Skin - Mild irritant	Rabbit	-	24 hours 10 milligrams	-
	Eyes - Mild irritant	Rabbit	-	10 milligrams	-
	Skin - Edema	Rabbit	3	-	-
	Skin - Mild irritant	Rabbit	-	495 milligrams	-

Skin

: **xylene:** May cause skin irritation.

: **cyclohexane:** Cyclohexane can cause eye, skin and mucous membrane irritation.

Eyes

: **xylene:** May cause eye irritation.

Respiratory

: **xylene:** May cause respiratory irritation.

Sensitization

Section 11. Toxicological information

Not available.

Skin : **toluene**: Non-sensitizer to skin.
Respiratory : **toluene**: Non-sensitizer to lungs.

Mutagenicity

Not available.

Conclusion/Summary : **heptane**: n-heptane was not mutagenic in the Salmonella/microsome (Ames) assay.
benzene: Some studies of workers exposed to benzene have shown an association with increased rates of chromosome aberrations in circulating lymphocytes.
naphthalene: Findings from a large number of bacterial and mammalian cell mutation assays have been negative. A few studies have shown chromosomal effects (elevated levels of Sister Chromatid Exchange or chromosomal aberrations) *in vitro*.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Benzene	Positive - Inhalation - TD	Rat - Female	-	-

Conclusion/Summary : IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic to humans. Exposure to wholly vaporized unleaded gasoline was associated with kidney cancers in male rats and liver tumors in female mice. The male rat kidney tumors are specific to that species and are not relevant to human health. The significance of the tumors identified in female mice is unclear.

ethanol: IARC Monograph 96 (2010) identified Ethanol in alcoholic beverages as a Group 1 carcinogen.

benzene: Studies of workers exposed to benzene show clear evidence that over-exposure can cause cancer of the blood forming organs (acute myelogenous leukemia) and aplastic anemia. Also, studies indicate repeated over-exposure to benzene may be associated with other types of leukemia and other blood disorders, including myelodysplastic syndromes. Studies in laboratory animals indicate that prolonged, repeated exposure to high levels of benzene vapor can cause bone marrow suppression and cancer in multiple organ systems.

ethylbenzene: Findings from a 2-year inhalation study in rodents conducted by NTP were as follows: Effects were observed only at the highest exposure level (750 ppm). At this level the incidence of renal tumors was elevated in male rats (tubular carcinomas) and female rats (tubular adenomas). Also, the incidence of tumors was elevated in male mice (alveolar and bronchiolar carcinomas) and female mice (hepatocellular carcinomas). IARC has classified ethyl benzene as "possibly carcinogenic to humans" (Group 2B).

cumene: Cumene exhibited hyperplasia of the epithelial tissues of the nose in NTP animal studies. Exposed male and female mice experienced metaplasia and hyperplasia of the lung. Also, male mice exhibited nonneoplastic lesions in the forestomach and liver. Adenomas of the respiratory epithelium of the nose were observed in male and female rats. Male rats exposed to cumene exhibited increased incidences of renal tubule adenoma or carcinoma (combined) as well as interstitial cell adenoma of the testis. Adenomas and carcinomas of the lung were increased in male and female mice exposed to cumene. The relevance of these findings to humans is not clear at this time. IARC has classified cumene as "possibly carcinogenic to humans" (Group 2B). In addition, NTP has determined cumene is reasonably anticipated to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in experimental animals.

naphthalene: Laboratory rodents exposed to naphthalene vapor for 2 years (lifetime studies) developed non-neoplastic and neoplastic tumors and inflammatory lesions of the nasal and respiratory tract.

Classification

Section 11. Toxicological information

Product/ingredient name	OSHA	IARC	NTP
Toluene	-	3	-
Xylene	-	3	-
Ethanol	-	1	-
Benzene	+	1	Known to be a human carcinogen.
Ethylbenzene	-	2B	-
Cumene	-	2B	Reasonably anticipated to be a human carcinogen.
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

Reproductive toxicity

Not available.

Conclusion/Summary

toluene: Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Several studies of workers suggest long-term exposure may be related to small increases in spontaneous abortions and changes in some gonadotropic hormones. However, the weight of evidence does not indicate toluene is a reproductive hazard to humans. Studies in laboratory animals indicate some changes in reproductive organs following high levels of exposure, but no significant effects on mating performance or reproduction were observed. Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Findings in laboratory animals were largely negative. Positive findings include small increases in minor skeletal and visceral malformations and developmental delays following very high levels of maternal exposure.

benzene: One study of women workers exposed to benzene suggested a weak association with irregular menstruation. However, other studies of workers exposed to benzene have not demonstrated clear evidence of an effect on fertility or reproductive outcome in humans. Benzene can cross the placenta and affect the developing fetus. Cases of aplastic anemia have been reported in the offspring of persons severely over-exposed to benzene. Studies in laboratory animals show evidence of adverse effects on male reproductive organs following high levels of exposure but no significant effects on reproduction have been observed. Embryotoxicity has been reported in studies of laboratory animals but effects were limited to reduced fetal weight and skeletal variations.

ethylbenzene: Studies in laboratory animals indicate limited evidence of renal malformations, resorptions, and developmental delays following high levels of maternal exposure. The relevance of these findings to humans is not clear at this time.

n-hexane: In laboratory studies, prolonged exposure to elevated concentrations of n-hexane was associated with decreased sperm count and degenerative changes in the testicles of rats.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Benzene	Negative - Inhalation	Rat	-	-

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 3	Not applicable.	Narcotic effects
Pentanes	Category 3	Not applicable.	Narcotic effects
Hexanes, mixture of isomers	Category 3	Not applicable.	Narcotic effects
Heptane	Category 3	Not applicable.	Narcotic effects
Ethanol	Category 3	Not applicable.	Respiratory tract irritation
Butane	Category 2	Not determined	central nervous system (CNS)
Cumene	Category 3	Not applicable.	Respiratory tract irritation
Ethylbenzene	Category 3	Not applicable.	Respiratory tract irritation

Section 11. Toxicological information

n-hexane	Category 3	Not applicable.	Narcotic effects
Cyclohexane	Category 3	Not applicable.	Narcotic effects
1,2,4-trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 2	Inhalation	kidneys
benzene	Category 1	Inhalation	blood system
n-hexane	Category 2	Inhalation	peripheral nervous system

Aspiration hazard

Name	Result
Pentanes	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1
Hexanes, other isomers	ASPIRATION HAZARD - Category 1
Heptane	ASPIRATION HAZARD - Category 1
Benzene	ASPIRATION HAZARD - Category 1
Ethylbenzene	ASPIRATION HAZARD - Category 1
Cumene	ASPIRATION HAZARD - Category 1
n-Hexane	ASPIRATION HAZARD - Category 1
Cyclohexane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. Breathing high concentrations can cause irregular heartbeats which can be fatal.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Breathing high concentrations can cause irregular heartbeats which may be fatal. Repeated or prolonged overexposure to solvents can cause brain or other nervous system damage. The symptoms can include the loss of memory, the loss of intellectual capacity and the loss of coordination. Repeated or prolonged overexposure to certain chemicals in this product may exacerbate the hearing loss effects associated with noise exposure. Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 11. Toxicological information

- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Causes damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : May cause genetic defects.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : Suspected of damaging fertility.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Toluene	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
Xylene	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Acute EC50 90 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 8.5 ppm Marine water	Crustaceans - Palaemonetes pugio - Adult	48 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
Heptane	Acute LC50 15700 µg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Acute LC50 19000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 16940 µg/l Fresh water	Fish - Carassius auratus	96 hours
	Acute EC50 1.5 mg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 4 mg/l	Fish - Carassius auratus	24 hours

Section 12. Ecological information

Ethanol	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
	Acute LC50 4924 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
Benzene	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 100 µl/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Chronic NOEC 0.375 µl/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
	Acute EC50 29000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 1600000 µg/l Fresh water	Algae - Selenastrum sp.	96 hours
	Acute EC50 9230 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Ethylbenzene	Acute LC50 21 mg/l Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 5.28 µl/L Fresh water	Fish - Oncorhynchus gorbuscha - Fry	96 hours
	Chronic NOEC 98 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 1.5 to 5.4 µl/L Marine water	Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling)	4 weeks
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 6530 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 2930 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 2600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
Cumene	Acute EC50 7400 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 10600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2700 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute LC50 2500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
n-Hexane Cyclohexane 1,2,4-trimethylbenzene	Acute LC50 4530 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 17000 µg/l Marine water	Crustaceans - Cancer magister - Zoea	48 hours
	Acute LC50 4910 µg/l Marine water	Crustaceans - Elasmopus pecteniscus - Adult	48 hours
Naphthalene	Acute LC50 7720 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 22.4 mg/l Fresh water	Fish - Tilapia zillii	96 hours
	Acute EC50 1.6 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
	Chronic NOEC 0.5 mg/l Marine water	Crustaceans - Uca pugnax - Adult	3 weeks
	Chronic NOEC 1.5 mg/l Fresh water	Fish - Oreochromis mossambicus	60 days

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : **toluene**: Rapidly biodegradable in aerobic conditions.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Toluene	-	-	Readily
Benzene	-	-	Readily

Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Pentanes	3.45	171	low
Toluene	2.73	90	low
Xylene	3.12	8.1 to 25.9	low
Heptane	4.66	552	high
Ethanol	-0.35	-	low
Butane	2.89	-	low
Benzene	2.13	11	low
Ethylbenzene	3.6	-	low
Cumene	3.55	35.48	low
n-Hexane	4	501.187	high
Cyclohexane	3.44	167	low
1,2,4-trimethylbenzene	3.63	243	low
Naphthalene	3.4	36.5 to 168	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.






RCRA classification : D001, D018

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Xylene	1330-20-7	Listed	U239
Toluene; Benzene, methyl-	108-88-3	Listed	U220
Benzene (I,T)	71-43-2	Listed	U019
Cumene (I); Benzene, (1-methylethyl)- (I)	98-82-8	Listed	U055
Cyclohexane (I); Benzene, hexahydro- (I)	110-82-7	Listed	U056
Naphthalene	91-20-3	Listed	U165

Section 14. Transport information

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1203	UN 1203	UN1203
UN proper shipping name	UN 1203, Gasoline, 3 PG II.	UN 1203, Gasoline, 3 PG II.	UN 1203, Gasoline, 3 PG II.
Transport hazard class(es)	3  	3  	3 
Packing group	II	II	II
Environmental hazards	Yes.	Yes.	Yes.

Additional information

DOT Classification : **Packaging instruction**
Passenger aircraft
Quantity limitation: 5 L

Cargo aircraft
Quantity limitation: 60 L

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark).
The marine pollutant mark is not required when transported by road or rail.

ADR/RID : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Cargo Aircraft Only: 60 L. Limited Quantities - Passenger Aircraft: 5 L.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: toluene; benzene; ethylbenzene; naphthalene
Clean Water Act (CWA) 311: xylene; toluene; benzene; ethylbenzene; cyclohexane; naphthalene
This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.
Clean Air Act (CAA) 112 regulated flammable substances: pentane; Butane

SARA 302/304

Composition/information on ingredients

Section 15. Regulatory information

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 2
 SKIN IRRITATION - Category 2
 EYE IRRITATION - Category 2B
 GERM CELL MUTAGENICITY - Category 1
 CARCINOGENICITY - Category 1B
 TOXIC TO REPRODUCTION (Fertility) - Category 2
 TOXIC TO REPRODUCTION (Unborn child) - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (central nervous system (CNS)) - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, central nervous system (CNS), hearing organs) - Category 1
 ASPIRATION HAZARD - Category 1
 HNOC - Defatting irritant
 HNOC - Static-accumulating flammable liquid

Composition/information on ingredients

Name	%	Classification
Gasoline	Proprietary	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B GERM CELL MUTAGENICITY - Category 1 CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION (Fertility) - Category 2 TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (central nervous system (CNS)) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, central nervous system (CNS), hearing organs) - Category 1 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant HNOC - Static-accumulating flammable liquid
Pentanes	10 - 30	FLAMMABLE LIQUIDS - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
Toluene	10 - 30	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) (inhalation) - Category 2 ASPIRATION HAZARD - Category 1
Xylene	10 - 30	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4

Section 15. Regulatory information

Hexanes, other isomers	10 - 30	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 2 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 TOXIC TO REPRODUCTION (Fertility) (inhalation) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
Heptane	10 - 30	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
Ethanol	3 - 7	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Butane	3 - 7	FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas SIMPLE ASPHYXIANTS SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (central nervous system (CNS)) - Category 2
Benzene	3 - 7	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system) (inhalation) - Category 1
Ethylbenzene	1 - 5	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY (inhalation) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Cumene	1 - 5	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 3 EYE IRRITATION - Category 2A CARCINOGENICITY (inhalation) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
n-Hexane	1 - 5	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (peripheral nervous system) (inhalation) - Category 2
Cyclohexane	1 - 5	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)

Section 15. Regulatory information

1,2,4-trimethylbenzene	1 - 5	(Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)
Naphthalene	1 - 5	(Respiratory tract irritation) - Category 3 FLAMMABLE SOLIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 CARCINOGENICITY - Category 2

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Toluene	108-88-3	<20
	Xylenes, mixed isomers	1330-20-7	<20
	Benzene	71-43-2	<5
	Ethylbenzene	100-41-4	<4
	Cumene	98-82-8	<4
	n-Hexane	110-54-3	<3
	Cyclohexane	110-82-7	<3
	1,2,4-Trimethylbenzene	95-63-6	<2
Supplier notification	Naphthalene	91-20-3	<2
	Toluene	108-88-3	<20
	Xylenes, mixed isomers	1330-20-7	<20
	Benzene	71-43-2	<5
	Ethylbenzene	100-41-4	<4
	Cumene	98-82-8	<4
	n-Hexane	110-54-3	<3
	Cyclohexane	110-82-7	<3
1,2,4-Trimethylbenzene	95-63-6	<2	
Naphthalene	91-20-3	<2	

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts

: The following components are listed: HEPTANE; N-HEPTANE; xylene; toluene; Octanes, all isomers; PENTANE; ETHYL ALCOHOL; DENATURED ALCOHOL; BENZENE; Butane; cumene; ethylbenzene; trimethylbenzene; methylcyclohexane; n-hexane; ethyltoluene; cyclohexane; 2,2,4-trimethylpentane; PSEUDOCUMENE; Cyclopentane; NAPHTHALENE

New York

: The following components are listed: Xylene mixed; Toluene; Benzene; Cumene; Benzene, 1-methylethyl-; Ethylbenzene; Hexane; Cyclohexane; Benzene, hexahydro-; 2, 2,4-Trimethylpentane; Naphthalene

New Jersey

: The following components are listed: Gasoline

Pennsylvania

: The following components are listed: Gasoline

California Prop. 65 Clear and Reasonable Warnings (2018)

⚠ WARNING: This product can expose you to chemicals including Ethanol, Benzene, which are known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Ethylbenzene, Cumene, Naphthalene, which are known to the State of California to cause cancer, and Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Section 15. Regulatory information

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Gasoline engine exhaust (condensates / extracts)	100	Yes.	No.	No.	No.
Toluene	<20	No.	Yes.	No.	7000 µg/day (ingestion)
Ethanol	<10	Yes.	Yes.	No.	No.
Benzene	<5	Yes.	Yes.	6.4 µg/day (ingestion)	24 µg/day (ingestion)
				13 µg/day (inhalation)	49 µg/day (inhalation)
Ethylbenzene	<5	Yes.	No.	41 µg/day (ingestion)	No.
				54 µg/day (inhalation)	
Cumene	<5	Yes.	No.	No.	No.
Naphthalene	<2	Yes.	No.	Yes.	No.

International regulations

WHMIS (Canada) : Class B-2: Flammable liquid
 Class D-2A: Material causing other toxic effects (Very toxic).
 Class D-2B: Material causing other toxic effects (Toxic).

Inventory list

United States : All components are listed or exempted.
Australia : All components are listed or exempted.
Canada : All components are listed or exempted.
China : All components are listed or exempted.
Europe : All components are listed or exempted.
Japan : **Japan inventory (ENCS)**: All components are listed or exempted.
Japan inventory (ISHL): Not determined.
Malaysia : All components are listed or exempted.
New Zealand : All components are listed or exempted.
Philippines : All components are listed or exempted.
Republic of Korea : All components are listed or exempted.
Taiwan : All components are listed or exempted.
Thailand : Not determined.
Turkey : Not determined.
Viet Nam : Not determined.

Section 16. Other information

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 2	On basis of test data
SKIN IRRITATION - Category 2	Calculation method
EYE IRRITATION - Category 2B	Expert judgment
GERM CELL MUTAGENICITY - Category 1	Calculation method
CARCINOGENICITY - Category 1B	Expert judgment
TOXIC TO REPRODUCTION (Fertility) - Category 2	Expert judgment
TOXIC TO REPRODUCTION (Unborn child) - Category 2	Expert judgment
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (central nervous system (CNS)) - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Expert judgment
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, central nervous system (CNS), hearing organs) - Category 1	Calculation method
ASPIRATION HAZARD - Category 1	Expert judgment
AQUATIC HAZARD (ACUTE) - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 1	Calculation method

History

Date of printing : 3/19/2018

Date of issue/Date of revision : 3/19/2018

Date of previous issue : No previous validation

Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

References : Not available.

☑ Indicates information that has changed from previously issued version.

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

DuraMAX Dexron III®/Mercon® ATF

Product Use: Automatic Transmission Fluid

Product Number(s): 95039000300

Company Identification

RelaDyne, LLC

9395 Kenwood Rd, Suite 104

Blue Ash, OH 45242

888-830-3156

www.reladyne.com

Emergency Response

INFOTRAC 800-535-5053

email: sales@reladyne.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Acute aquatic toxicant: Category 3. Chronic aquatic toxicant: Category 3.

Environmental Hazards: Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

Prevention: Avoid release to the environment.

Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %wt/wt

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Unusual Fire Hazards: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds

will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed. Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m ³	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m ³	10 mg/m ³	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Red

Physical State: Liquid

Odor: Petroleum odor

Odor Threshold: No data available

pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)

Vapor Density (Air = 1): >1

Initial Boiling Point: 315°C (599°F)

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable

Density: 0.85 kg/l @ 15°C (59°F) (Typical)

Viscosity: 7 mm²/s @ 100°C (212°F) (Typical)

Decomposition temperature: No data available

Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 178 °C (352 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE ICAO TI OR IATA DGR

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:

Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO

4. Sudden Release of Pressure Hazard: NO
 5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

- 1-1 =IARC Group 1 03=EPCRA 313
 1-2 A=IARC Group 2A 04=CA Proposition 65
 01-2B=IARC Group 2B 05=MA RTK
 02=NTP Carcinogen 06=NJ RTK
 07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: EINECS (European Union).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Automatic transmission fluid)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1,4,5,7,8,12,15

Revision Date: APRIL 15, 2015

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code

API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

This Safety Data Sheet is prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012. The information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

DuraMAX Synthetic Blend Motor Oil 5W-20, 5W-30, 10W-30, 10W-40

Product Use: Automotive Engine Oil

Product Number(s): 950241030SB, 950241040SB, 950240520SB, 950240530SB

Company Identification

RelaDyne, LLC

9395 Kenwood Rd, Suite 104

Blue Ash, OH 45242

888-830-3156

www.reladyne.com

Emergency Response

INFOTRAC 800-535-5053

Product Information

email : sales@reladyne.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %wt/wt

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE SYMPTOMS AND HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Not classified.

Indication of any immediate medical attention and special treatment needed

Not applicable.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Keep out of the reach of children. Wash thoroughly after handling.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning,

sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Amber

Physical State: Liquid

Odor: Petroleum odor

Odor Threshold: No data available

pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)

Vapor Density (Air = 1): >1

Initial Boiling Point: 315°C (599°F)

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable

Specific Gravity: 1 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) (Approximate)

Density: 0.8599 kg/l @ 15°C (59°F) (Typical)

Viscosity: 9.6 mm²/s @ 100°C (212°F) (Min)

Evaporation Rate: No data available

Decomposition temperature: No Data Available

Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 200 °C (392 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: This material is not expected to react.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities

for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:

Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

1-1 =IARC Group 1	03=EPCRA 313
1-2 A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

One or more components does not comply with the following chemical inventory requirements: ENCS (Japan).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : ENGINE OIL 1 - ENG1

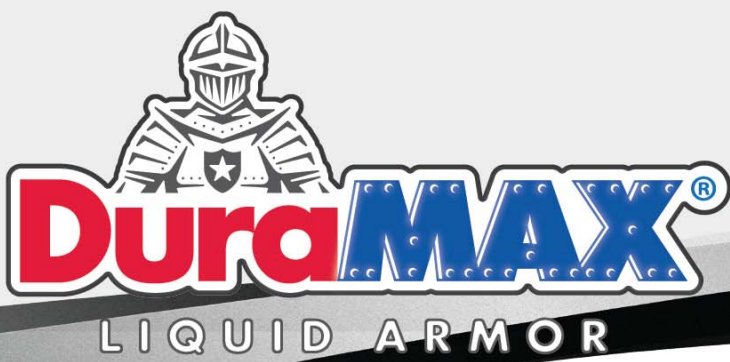
REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 8,16
Revision Date: JULY 07, 2014

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

This Safety Data Sheet is prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012. The information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.



Windshield Washer Concentrate

DuraMAX Windshield Washer Concentrate

DESCRIPTION Windshield Washer Concentrate is a concentrated cleaning solution and antifreeze for automotive windshield cleaning systems. This product is meant to be diluted with water at various dilution rates to achieve degrees of desired freeze protection.

It is a blue liquid blend of methanol and surfactants which improves cleaning and prevents rust and corrosion. It is particularly designed for winter weather, but is an excellent all season cleaning fluid.

BENEFITS

- Protects automotive windshield cleaning systems from freezing.
- Quickly dissolves road film, dirt, bugs, grime and salt providing safer driving vision.
- Fluid is safe for car finishes and rubber trim when used as directed.

recommended dilution rates	Percent Concentrate	Protects to
	10%	+20 F
	25%	0 F
	40%	- 20 F
	50%	- 30 F

CAUTION NOT MEANT TO BE USED FULL STRENGTH IN WINDSHIELD WASHER SYSTEMS.

03.05.14

Contact your RelaDyne Representative for more information.

www.reladyne.com
888.830.3156



Safety Data Sheet

according to OSHA Hazard Communication
29 CFR Part 1910.1200



SECTION 1. Identification

Product Name: DuraMAX Brake Cleaner
SDS #: 950769999BC

Supplied by: RelaDyne, LLC.
8280 Montgomery Road, Suite 101
Cincinnati, OH 45236
888-830-3156
www.reladyne.com

24 Hour Emergency:

INFOTRAC: 1-800-535-5053

NOTE: INFOTRAC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals

SECTION 2. Hazard(s) Identification

***** EMERGENCY OVERVIEW ***:** Extremely flammable liquid and vapor. May be fatal if inhaled. May be fatal if swallowed. Suspect cancer hazard.

GHS Classification

Carc. 2, Eye Irrit. 2, Flam. Liq. 2, STOT SE 3 NE, Skin Irrit. 2

Symbol(s) of Product



Signal Word

Danger

GHS HAZARD STATEMENTS

Flammable Liquid, category 2	H225	Highly flammable liquid and vapor.
Skin Irritation, category 2	H315	Causes skin irritation.
Eye Irritation, category 2	H319	Causes serious eye irritation.
STOT, single exposure, category 3, NE	H336	May cause drowsiness or dizziness.
Carcinogenicity, category 2	H351	Suspected of causing cancer.

GHS PRECAUTIONARY STATEMENTS

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water

P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER/doctor/physician if you feel unwell.
P321	Specific treatment (see first aid section on this label).
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use appropriate method to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3. Composition/Information on Ingredients

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Wt. %</u>	<u>GHS Symbols</u>	<u>GHS Statements</u>
2-propanone	67-64-1	50-75	GHS02-GHS07	H225-319-336
Naphtha (petroleum), hydrotreated light	64742-49-0	25-50	GHS02-GHS07	H225-315-336
Xylene	1330-20-7	2.5-10	GHS02-GHS07- GHS08	H226-315-319-332-335-351-373
Ethylbenzene	100-41-4	1.0-2.5	GHS02-GHS07- GHS08	H225-315-319-332-335-351-373

The text for GHS Hazard Statements shown above (if any) is given in the "Other information" Section.

SECTION 4. First-Aid Measures



FIRST AID - EYE CONTACT: Immediately flush eyes with water. Flush eyes with water for a minimum of 15 minutes, occasionally lifting and lowering upper lids. Get medical attention promptly. Remove contact lenses if worn.

FIRST AID - SKIN CONTACT: Immediately flush skin with plenty of water. Remove clothing. Get medical attention immediately. Wash clothing separately and clean shoes before reuse.

FIRST AID - INHALATION: Rescuers should put on appropriate protective gear. Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm. Get immediate medical attention. To prevent aspiration, keep head below knees.

FIRST AID - INGESTION: Do not induce vomiting. Do not give liquids. Obtain emergency medical attention.

SECTION 5. Fire-Fighting Measures

UNUSUAL FIRE AND EXPLOSION HAZARDS: Extremely flammable liquid and vapor. Vapors/dust may cause flash fire or explosion. Vapors can travel to a source of ignition and flash back. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. Also, do not reuse container without commercial cleaning or reconditioning. Closed container may explode under extreme heat.

SPECIAL FIREFIGHTING PROCEDURES: As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear. Evacuate all unnecessary personnel. Shut down motors, pumps, electrical service and eliminate all sources of ignition. Avoid use of solid water streams. Do not use water jet (frothing possible). Use water with caution. Material will float and may ignite on surface of water. Water may be ineffective in fighting the fire. Water spray to cool containers or protect personnel. Use with caution. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Small fire: dry chemicals, carbon dioxide, foam, water fog, or inert gas (nitrogen); Large fire: Foam, water fog, or water spray.

EXTINGUISHING MEDIA: Carbon Dioxide, Dry Chemical, Foam, Water Fog

SECTION 6. Accidental Release Measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear appropriate personal protective equipment. (See Exposure Controls / Personal Protection Section.) Eliminate all ignition sources. Evacuate unnecessary personnel. Prevent additional discharge of material if able to do so safely. Do not touch or walk through spilled material. Avoid runoff into storm sewers and ditches which lead to waterways. Ventilate spill area. Stay upwind of spill. A vapor suppressing foam may be used to reduce vapors. If leak or spill has not ignited, use water spray to disperse the vapors. Collect spilled materials for disposal. Use only non-combustible material for clean-up. Use clean, non-sparking tools to collect absorbed materials. Remove from surface by skimming or with suitable absorbents. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Recover by pumping (use an explosion proof or hand pump).

SECTION 7. Handling and Storage



HANDLING: Use only in a well ventilated area. Avoid breathing vapor, fumes or mist. Avoid contact with eyes, skin, and clothing. Take precautionary measures against static discharge. When transferring, follow proper grounding procedures. Use spark-resistant tools. Do not load into compartments adjacent to heated cargo. Use explosion proof equipment. Always open containers slowly to allow any excess pressure to vent. Follow all SDS/label precautions even after containers are emptied because they may retain product residues.

STORAGE: Keep away from heat, sparks, and flame. Containers can build up pressure if exposed to heat (fire). Store containers in a cool, well ventilated place. Keep container closed when not in use. Protect from direct sunlight. Static Discharge, materials can accumulate static charges which can cause an incendiary electrical discharge. Material is a static accumulator which has the potential of forming ignitable vapor-air mixtures in storage tanks.

SECTION 8. Exposure Controls/Personal Protection

Ingredients with Occupational Exposure Limits

<u>Chemical Name</u>	<u>ACGIH-TLV-TWA</u>	<u>ACGIH-TLV-STEL</u>	<u>OSHA PEL-TWA</u>	<u>OSHA PEL-CEILING</u>
2-propanone	500 ppm	750 ppm	1000 ppm	N.D.
Naphtha (petroleum), hydrotreated light	400 ppm	500 ppm	500 ppm	N.D.
Xylene	100 ppm	150 ppm	100 ppm	N.D.
Ethylbenzene	100ppm	125ppm	100ppm	N.D.

Personal Protection



RESPIRATORY PROTECTION: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.



SKIN PROTECTION: Wear impervious gloves to prevent contact with the skin. Wear long sleeves when contact is likely to occur. Wear protective gear as needed - apron, suit, boots.



EYE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield.



OTHER PROTECTIVE EQUIPMENT: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.



HYGIENIC PRACTICES: Do not eat, drink, or smoke in areas where this material is used. Avoid breathing vapors. Remove contaminated clothing and wash before reuse. Wash thoroughly after handling. Wash hands before eating.

SECTION 9. Physical and Chemical Properties

Appearance:	N.D.	Physical State:	Liquid
Odor:	Typical	Odor Threshold:	N.D.
Density, g/cm³:	0.767	pH:	N.D.
Freeze Point, °F:	N.D.	Viscosity:	N.D.
Solubility in Water:	N.D.	Explosive Limits, vol%:	1.0 - 12.8
Boiling Range, °F:	133 - 288	Flash Point, °F:	0
Evaporation Rate:	N.D.	Auto-ignition Temp., °F:	N.D.
Vapor Density:	N.D.	Vapor Pressure:	N.D.

(See "Other information" Section for abbreviation legend)

SECTION 10. Stability and Reactivity

STABILITY: No Information

CONDITIONS TO AVOID: Avoid impact, friction, heat, sparks, flame and source of ignition.

INCOMPATIBILITY: Keep separate from alkalis. Prevent contact with halogens. Prevent contact with strong oxidizing agents. Keep away from acids.

HAZARDOUS DECOMPOSITION PRODUCTS: Toxic gases/fumes are given off during burning or thermal decomposition. During combustion carbon monoxide may be formed. During combustion carbon dioxide may be formed. During combustion asphyxiants may be formed.

HAZARDOUS POLYMERIZATION: No Information

SECTION 11. Toxicological Information



Information on Toxicological Effects

EFFECTS OF OVEREXPOSURE - INHALATION: May be fatal if inhaled. Breathing in the material may irritate the mucous membranes of the nose, throat bronchi and lungs. Vapors can cause irritation of the respiratory tract. High concentrations can cause headache, nausea, weakness, lightheadedness, and stupor (CNS depression). May cause dizziness and drowsiness. High vapor concentrations may cause drowsiness.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Contact with skin may cause mild irritation. Causes skin irritation. Can be absorbed through skin and produce central nervous system effects. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash). Personnel with pre-existing skin disorders should avoid contact with this product.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Causes eye irritation. Contact with the eye may cause mild irritation. Symptoms may include stinging, tearing, redness and swelling.

EFFECTS OF OVEREXPOSURE - INGESTION: May be fatal if swallowed. Harmful or fatal if liquid is aspirated into lungs. Irritating to mouth, throat, and stomach. Ingestion may cause gastrointestinal tract irritation. Can be readily absorbed by the stomach and intestinal tract. Symptoms include burning sensation of the mouth and esophagus, nausea, vomiting, diarrhea, dizziness, staggering gait, drowsiness, loss of consciousness and delirium as well as additional central nervous system effects. May cause nausea and diarrhea. Ingestion may result in nausea, vomiting, diarrhea and restlessness. May cause dizziness and drowsiness and/or stupor.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: Suspect cancer hazard. Possible brain damage from overexposure. The International Agency for Research on Cancer has evaluated ethylbenzene and classified it as a possible human carcinogen (Group 2B) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. Overexposure may cause nervous system damage. May cause delayed lung damage. Chronic effects of ingestion and subsequent aspiration into the lungs may cause pneumatocele (lung cavity) formation and chronic lung dysfunction. Significant exposure to this chemical may adversely affect people with chronic disease of the respiratory system, central nervous system, kidney, liver, skin, and/or eyes.

Primary Route(s) of Entry: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

Acute Toxicity Values

The acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Name according to EEC</u>	<u>Oral LD50, mg/kg</u>	<u>Dermal LD50, mg/kg</u>	<u>Vapor LC50, mg/L</u>
67-64-1	2-propanone	5800.0	20000.0	76.0
64742-49-0	Naphtha (petroleum), hydrotreated light	>5000	>5000	>20.0
1330-20-7	Xylene	>3523	>4200	>20.0
100-41-4	Ethylbenzene	3500	15433	>20.0

SECTION 12. Ecological Information

ECOLOGICAL INFORMATION: No Information

SECTION 13. Disposal Considerations

For more guidance and information contact our Waste Services Division at (262) 658-4000.

Always dispose of any waste in accordance with all local, state, and federal regulations.

DISPOSAL METHOD: Dispose of waste in accordance with all local, state and federal regulations.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear appropriate personal protective equipment. (See Exposure Controls / Personal Protection Section.) Eliminate all ignition sources. Evacuate unnecessary personnel. Prevent additional discharge of material if able to do so safely. Do not touch or walk through spilled material. Avoid runoff into storm sewers and ditches which lead to waterways. Ventilate spill area. Stay upwind of spill. A vapor suppressing foam may be used to reduce vapors. If leak or spill has not ignited, use water spray to disperse the vapors. Collect spilled materials for disposal. Use only non-combustible material for clean-up. Use clean, non-sparking tools to collect absorbed materials. Remove from surface by skimming or with suitable absorbents. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Recover by pumping (use an explosion proof or hand pump).

SECTION 14. Transport Information

DOT Proper Shipping Name:	Flammable liquids, n.o.s. (acetone, heptane)	Packing Group:	II
DOT Hazard Class:	3	Hazard SubClass:	No Information
DOT UN/NA Number:	UN1993	Resp. Guide Page:	0

SECTION 15. Regulatory Information**U.S. Federal Regulations:****CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
Xylene	1330-20-7
Ethylbenzene	100-41-4
Toluene	108-88-3
Benzene	71-43-2

TOXIC SUBSTANCES CONTROL ACT:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA components exist in this product.

U.S. State Regulations:**NEW JERSEY RIGHT-TO-KNOW:**

The following materials are non-hazardous, but are among the top five components in this product.

No NJ Right-To-Know components exist in this product.

PENNSYLVANIA RIGHT-TO-KNOW

The following non-hazardous ingredients are present in the product are at or greater than 3%.

No PA Right-To-Know components exist in this product.

CALIFORNIA PROPOSITION 65 CARCINOGENS

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

<u>Chemical Name</u>	<u>CAS-No.</u>
Ethylbenzene	100-41-4
Benzene	71-43-2

CALIFORNIA PROPOSITION 65 REPRODUCTIVE TOXINS

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

<u>Chemical Name</u>	<u>CAS-No.</u>
Toluene	108-88-3
Benzene	71-43-2

International Regulations: As follows -**CANADIAN WHMIS:**

This SDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

WHMIS Class: No Information

SECTION 16. Other Information

Revision Date: 6/01/2018 Supersedes Date: New SDS

Datasheet produced by: EH&S - Regulatory Department

HMIS Ratings:

Health:	1	Flammability:	3	Reactivity:	0 - No Hazard	Personal Protection:	X
---------	---	---------------	---	-------------	---------------	----------------------	---

Volatile Organic Compounds, gr/ltr: 78

DISCLAIMER: THE VOLATILE ORGANIC COMPOUND (VOC) CONTENT REPORTED HEREIN, IF ANY, IS BASED ON A MATERIAL VOC CALCULATION. NOTE THAT SEVERAL METHODS ARE USED FOR CALCULATING VOC CONTENT AND THAT STANDARDS/ REQUIREMENTS REGARDING VOC CONTENT VARY BY LOCATION/JURISDICTION. ACCORDINGLY, EMCO MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, REGARDING THIS MATERIAL'S COMPLIANCE WITH VOC STANDARDS/ REQUIREMENTS APPLICABLE IN LOCATIONS/JURISDICTIONS WHERE THIS MATERIAL MAY BE SOLD OR USED.

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H225	Highly flammable liquid and vapor.
H226	Flammable liquid and vapor.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.

Icons for GHS Pictograms shown in Section 3 describing each ingredient:

- GHS02 
- GHS07 
- GHS08 

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined, N.I. - No Information

The information on this SDS was obtained from sources which we believe to be reliable. However, the information provided is without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information and recommendations are offered for the user's consideration and examination and should be used to make an independent determination of the methods to safeguard workers and the environment. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For these reasons we do not assume responsibility and expressly disclaim any liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS may not be applicable. It is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

DuraMAX DM462 Non-Chlorinated Brake Cleaner

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 05/29/2015

Revision date: 06/26/2018

Version: 1.0



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : DuraMAX DM462 Non-Chlorinated Brake Cleaner
Product code : 950769999DM, 95076NCBCLV

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Brake and Parts Cleaner

1.3. Details of the supplier of the safety data sheet

RelaDyne
8280 Montgomery Road, Suite 101
Cincinnati, OH 45236
www.reladyne.com

1.4. Emergency telephone number

Emergency number : INFOTRAC 800-535-5053

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable Aerosol 1
Gases Under Pressure - Compressed Gas
Skin irritation 2
Eye irritation 2A
Reproductive toxicity 2
Specific target organ toxicity - Single exposure 3
Specific target organ toxicity - Repeated exposure 2
Aspiration hazard 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Causes skin irritation. Causes serious eye irritation. Suspected of damaging fertility or the unborn child. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure. May be fatal if swallowed and enters airways.

Precautionary statements (GHS-US) :

Keep away from heat/sparks/open flames/hot surfaces. -No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Wash hands thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapors/spray. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If exposed or concerned: Get medical advice/attention. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

22 % of the mixture consists of ingredient(s) of unknown acute toxicity.

DuraMAX DM462 Non-chlorinated Brake Cleaner

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Acetone	(CAS No) 67-64-1	30 - 60	Flam. Liq. 2 Eye Irrit. 2A STOT SE 3
Heptane, branched, cyclic and linear	(CAS No) 426260-76-6	15 - 40	Flam. Liq. 2 Skin Irrit. 2 STOT SE 3 Asp. Tox. 1
n-Heptane	(CAS No) 142-82-5	10 - 30	Flam. Liq. 2 Skin Irrit. 2 STOT SE 3
Xylenes (o-, m-, p- isomers)	(CAS No) 1330-20-7	7 - 13	Flam. Liq. 3 Acute Tox. 4 (Dermal, Inhalation) Skin Irrit. 2
Carbon dioxide	(CAS No) 124-38-9	3 - 7	Compressed gas
Toluene	(CAS No) 108-88-3	1 - 5	Flam. Liq. 2 Acute Tox. 4 (Oral) Skin Irrit. 2 Repr. 2 STOT SE 3 STOT RE 2 Asp. Tox. 1

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Vapours may cause drowsiness and dizziness.
- Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
- Symptoms/injuries after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Treat for surrounding material.
- Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Extremely flammable aerosol. Products of combustion may include, and are not limited to: oxides of carbon.
- Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

5.3. Advice for firefighters

- Firefighting instructions : Cool closed containers exposed to fire with water.
- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Vapours may be heavier than air and may travel along the ground to a distant ignition source and flash back.

DuraMAX DM462 Non-chlorinated Brake Cleaner

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

For containment : Eliminate sources of ignition. Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from sources of ignition. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid contact with skin and eyes. Do not swallow. Do not breathe gas, fumes, vapour or spray. When using do not eat, drink or smoke. Use only outdoors or in a well-ventilated area.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep locked up and out of reach of children. Do not expose to temperatures exceeding 50°C/ 122°F. Store away from direct sunlight or other heat sources.

Storage area : Store in a well-ventilated place.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Acetone (67-64-1)		
USA ACGIH	ACGIH TWA (ppm)	500 ppm
USA ACGIH	ACGIH STEL (ppm)	750 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2400 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

n-Heptane (142-82-5)		
USA ACGIH	ACGIH TWA (ppm)	400 ppm
USA ACGIH	ACGIH STEL (ppm)	500 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2000 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	500 ppm

Xylenes (o-, m-, p- isomers) (1330-20-7)		
USA ACGIH	ACGIH TWA (ppm)	100 ppm
USA ACGIH	ACGIH STEL (ppm)	150 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	435 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	100 ppm

Carbon dioxide (124-38-9)		
USA ACGIH	ACGIH TWA (ppm)	5000 ppm
USA ACGIH	ACGIH STEL (ppm)	30000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	9000 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	5000 ppm

Toluene (108-88-3)		
USA ACGIH	ACGIH TWA (ppm)	20 ppm
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm
USA OSHA	OSHA PEL (STEL) (ppm)	150 ppm

DuraMAX DM462 Non-chlorinated Brake Cleaner

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Toluene (108-88-3)		
USA OSHA	OSHA PEL (Ceiling) (ppm)	300 ppm

8.2. Exposure controls

Appropriate engineering controls	: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Chemical-resistant gloves.
Eye protection	: Safety glasses or goggles are recommended when using product.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: A NIOSH approved respirator is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Environmental exposure controls	: Maintain levels below Community environmental protection thresholds.
Other information	: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas/Pressurized Liquid.
Appearance	: Clear.
Colour	: Colourless.
Odour	: Solvent.
Odour threshold	: No data available.
pH	: No data available.
Relative evaporation rate (butylacetate=1)	: No data available.
Melting point	: No data available.
Freezing point	: No data available.
Boiling point	: No data available.
Flash point	: No data available.
Self ignition temperature	: No data available.
Decomposition temperature	: No data available.
Flammability (solid, gas)	: Extremely flammable aerosol.
Vapour pressure	: No data available.
Relative vapour density at 20 °C	: No data available.
Relative density	: No data available.
Solubility	: No data available.
Log Pow	: No data available.
Log Kow	: No data available.
Viscosity, kinematic	: No data available.
Viscosity, dynamic	: No data available.
Explosive properties	: No data available.
Oxidising properties	: No data available.
Explosive limits	: No data available.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions. Extremely flammable aerosol. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Heat. Incompatible materials. Sources of ignition.

DuraMAX DM462 Non-chlorinated Brake Cleaner

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Based on available data, the classification criteria are not met.

DM462	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5 mg/l/4h

Acetone (67-64-1)	
LD50 oral rat	5800 mg/kg
LC50 inhalation rat (mg/l)	50100 mg/m ³ /8h

n-Heptane (142-82-5)	
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (mg/l)	103 g/m ³ /4h

Xylenes (o-, m-, p- isomers) (1330-20-7)	
LD50 oral rat	4300 mg/kg
LD50 dermal rabbit	> 1700 mg/kg
ATE (dust,mist)	1.5 mg/l/4h

Toluene (108-88-3)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	12124 mg/kg
LD50 dermal rabbit	8390 mg/kg
LC50 inhalation rat (mg/l)	28.1 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : Based on available data, the classification criteria are not met.
Germ cell mutagenicity : Based on available data, the classification criteria are not met.
Carcinogenicity : Based on available data, the classification criteria are not met.

Xylenes (o-, m-, p- isomers) (1330-20-7)	
IARC group	3

Toluene (108-88-3)	
IARC group	3

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure) : May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure) : May cause damage to organs through prolonged or repeated exposure
Aspiration hazard : May be fatal if swallowed and enters airways

Symptoms/injuries after inhalation : Vapours may cause drowsiness and dizziness.
Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
Symptoms/injuries after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

DM462	
Persistence and degradability	Not established.

DuraMAX DM462 Non-chlorinated Brake Cleaner

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

12.3. Bioaccumulative potential

DM462

Bioaccumulative potential: Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations: This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

Additional information: Flammable vapours may accumulate in the container. Do not incinerate closed containers.

SECTION 14: Transport information

In accordance with DOT:

14.1. UN number

UN-No. UN1950

14.2. UN proper shipping name

Proper Shipping Name: Aerosols, flammable, (each not exceeding 1 L capacity)

Hazard Classes: 2.1

Hazard labels:



14.3. Additional information

Other information: No supplementary information available.

Special transport precautions: Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

Acetone (67-64-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag: T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

Heptane, branched, cyclic and linear (426260-76-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Xylenes (o-, m-, p- isomers) (1330-20-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting: 1.0 %

n-Heptane (142-82-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag: T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

Toluene (108-88-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting: 1.0 %

Carbon dioxide (124-38-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. US State regulations

DM462()

State or local regulations: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

DuraMAX DM462 Non-chlorinated Brake Cleaner

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

IARC (I)	International Agency for Research on Cancer.
	1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans.
NTP (N)	National Toxicology Program.
	1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration.

SECTION 16: Other information

Indication of changes : None.
Other information : None.
NFPA health hazard : 2
NFPA fire hazard : 4
NFPA reactivity : 0



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



RelaDyne, LLC
8280 Montgomery Road, Suite 101
Cincinnati, OH 45236
888-830-3156 www.reladyne.com

SAFETY DATA SHEET

1. Identification

Product identifier: DuraMAX Low VOC Non-Chlorinated Brake Parts Cleaner BW4

Other means of identification

Product number: 95076NCBCLV

SDS Number: 014

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Emergency telephone number: For emergency assistance Involving chemicals

Call INFOTRAC 800-535-5053

2. Hazard(s) identification

Hazard classification

Physical hazards

Flammable liquids Category 2

Health hazards

Serious eye damage/eye irritation Category 2A

Carcinogenicity Category 2

Toxic to reproduction Category 2

Environmental hazards Acute Category 3
hazards to the aquatic environment

Label elements

Hazard symbol



Signal word

Danger

Hazard statement

Highly flammable liquid and vapor.
Causes serious eye irritation.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
Harmful to aquatic life.

Precautionary statement

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Response

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If exposed or concerned: Get medical advice/attention. In case of fire: Use ... to extinguish.

Storage

Store in well-ventilated place. Store locked up.

**Disposal**

Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Mixtures

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
Acetone		67-64-1	>=50 - <=60%
Naphtha (petroleum), hydrotreated light		64742-49-0	>=30 - <=40%
Heptane		142-82-5	>=30 - <=40%
Xylene		1330-20-7	>=5 - <=15%
Ethylbenzene		100-41-4	>=0 - <=5%
Toluene		108-88-3	>=0 - <=0.5%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion:

Do NOT induce vomiting. Never give liquid to an unconscious person. Get medical attention immediately.

Inhalation:

Move to fresh air. If breathing is difficult, give oxygen. Perform artificial respiration if breathing has stopped.

Skin contact:

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Eye contact:

If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

Most important symptoms/effects, acute and delayed**Symptoms:**

No data available.



Indication of immediate medical attention and special treatment needed

Treatment: No data available.

5. Fire-fighting measures

General fire hazards: No data available.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use: Foam. Carbon dioxide or dry powder.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: No data available.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: No data available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: No data available.

Methods and material for containment and cleaning up: All equipment used when handling the product must be grounded. Eliminate sources of ignition. Absorb spillage with non-combustible, absorbent material. Dike for later disposal.

7. Handling and storage

Precautions for safe handling: Flammable/combustible - Keep away from oxidizers, heat and flames. Avoid contact with skin and eyes. Avoid breathing mists or vapors. Use only with adequate ventilation.

Conditions for safe storage, including any incompatibilities: No data available.



8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
Acetone	TWA	750 ppm 1,800 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	1,000 ppm 2,400 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL	5,900 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	590 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL	2,500 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	250 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	Ceiling	3,000 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	TWA PEL	500 ppm 1,200 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	STEL	750 ppm 1,780 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	TWA	500 ppm	US. ACGIH Threshold Limit Values (03 2013)
	STEL	750 ppm	US. ACGIH Threshold Limit Values (03 2013)
	TWA	200 ppm	US. ACGIH Notice of Intended Changes (NIC) to Threshold Limit Values (03 2013)
	STEL	500 ppm	US. ACGIH Notice of Intended



				Changes (NIC) to Threshold Limit Values (03 2013)
	REL	250 ppm	590 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	1,000 ppm	2,400 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	750 ppm	1,800 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	1,000 ppm	2,400 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Heptane	TWA	400 ppm		US. ACGIH Threshold Limit Values (03 2013)
	STEL	500 ppm		US. ACGIH Threshold Limit Values (03 2013)
	REL	85 ppm	350 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	Ceil_Tim e	440 ppm	1,800 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	500 ppm	2,000 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	500 ppm	2,000 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	400 ppm	1,600 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	400 ppm	1,600 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	500 ppm	2,000 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL		2,750 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL		350 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL		670 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)



	AN ESL		85 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	TWA PEL	400 ppm	1,600 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	STEL	500 ppm	2,000 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
Xylene	STEL	150 ppm		US. ACGIH Threshold Limit Values (03 2013)
	TWA	100 ppm		US. ACGIH Threshold Limit Values (03 2013)
	REL	100 ppm	435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm	435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm	655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm	655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm	655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm	435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	100 ppm	435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	150 ppm	655 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm	435 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm	435 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	150 ppm	655 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	AN ESL		180 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)



	ST ESL		350 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL		80 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL		42 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	TWA PEL	100 ppm	435 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	Ceiling	300 ppm		US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	STEL	150 ppm	655 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
Ethylbenzene	TWA	20 ppm		US. ACGIH Threshold Limit Values (03 2013)
	STEL	125 ppm	545 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm	435 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	100 ppm	435 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	100 ppm	435 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	125 ppm	545 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm	435 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	125 ppm	545 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	AN ESL		570 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL		740	US. Texas. Effects Screening Levels



			µg/m3	(Texas Commission on Environmental Quality) (02 2013)
	ST ESL		170 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL		135 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	TWA PEL	100 ppm	435 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	STEL	125 ppm	545 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
Toluene	TWA	20 ppm		US. ACGIH Threshold Limit Values (03 2013)
	REL	100 ppm	375 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm	560 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA	100 ppm	375 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	150 ppm	560 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	Ceiling	300 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
	TWA	200 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
	MAX. CONC	500 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
	TWA	100 ppm	375 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	150 ppm	580 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	AN ESL		1,200 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL		3,470 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental



			Quality) (02 2013)
	ST ESL	920 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	330 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	Ceiling	500 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	TWA PEL	10 ppm 37 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	STEL	150 ppm 560 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)

Biological limit values

Chemical identity	Exposure Limit values	Source
Acetone (acetone: Sampling time: End of shift.)	50 mg/l (Urine)	ACGIH BEL (03 2013)
Xylene (Methylhippuric acids: Sampling time: End of shift.)	1.5 g/g (Creatinine in urine)	ACGIH BEL (03 2013)
Ethylbenzene (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift at end of work week.)	0.7 g/g (Creatinine in urine)	ACGIH BEL (03 2013)
Toluene (o-Cresol, with hydrolysis: Sampling time: End of shift.)	0.3 mg/g (Creatinine in urine)	ACGIH BEL (03 2013)
Toluene (toluene: Sampling time: Prior to last shift of work	0.02 mg/l (Blood)	ACGIH BEL (03 2013)



week.)		
Toluene (toluene: Sampling time: End of shift.)	0.03 mg/l (Urine)	ACGIH BEL (03 2013)

Appropriate engineering controls No data available.

Individual protection measures, such as personal protective equipment

General information: No data available.

Eye/face protection: No data available.

Skin protection

Hand protection: No data available.

Other: No data available.

Respiratory protection: No data available.

Hygiene measures: No data available.

9. Physical and chemical properties

Physical state: Liquid

Form: No data available.

Color: No data available.

Odor: No data available.

Odor threshold: No data available.

pH: No data available.

Melting point/freezing point: No data available.

Initial boiling point and boiling range: 56.5 °C

Flash Point: -20 °C

Evaporation rate: No data available.

Flammability (solid, gas): No data available.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%): No data available.

Flammability limit - lower (%): No data available.

Explosive limit - upper (%): No data available.

Explosive limit - lower (%): No data available.

Vapor pressure: No data available.

Vapor density: No data available.



Relative density:	No data available.
Solubility(ies)	
Solubility in water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical stability:	No data available.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	No data available.
Incompatible materials:	No data available.
Hazardous decomposition products:	No data available.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion:	No data available.
Inhalation:	No data available.
Skin contact:	No data available.
Eye contact:	No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix (): 20,337.837838 mg/kg

Dermal

Product: ATEmix (): 5,000 mg/kg

Inhalation

Product: No data available.

Specified substance(s):

Acetone LC 50 (Rat,) : 76 mg/l (, No) 2 (reliable with restrictions) LC 50 (Rat, 4 h): 76 mg/l



Specified substance(s):

Naphtha (petroleum),
hydrotreated light LC 50 (Rat,) : > 5,200 mg/m³ (, Yes) 1 (reliable without restriction) LC 50
(Rat,) : > 5,260 mg/m³ (, Yes) 1 (reliable without restriction) LC 50 (Rat,) : >
5,000 mg/m³ (, Yes) 2 (reliable with restrictions)

Specified substance(s):

Heptane LD 50 (Mouse, 2 h): 75 mg/l LC 50 (Rat,) : > 73.5 mg/l (, No) 2 (reliable with
restrictions)

Specified substance(s):

Xylene LC 50 (Mouse, 6 h): 3,907 mg/l

Specified substance(s):

Toluene LC 50 (Rat, 4 h): 8,000 mg/l

Repeated dose toxicity

Product: No data available.

Skin corrosion/irritation

Product: No data available.

Serious eye damage/eye irritation

Product: No data available.

Specified substance(s):

Acetone Exposure for 15 minutes to 1660 ppm causes irritation of eyes

Specified substance(s):

Ethylbenzene Exposure to 21.5 g/m³ (5000 ppm) ethylbenzene for a few seconds gives
intolerable irritation of nose, eyes, and throat
Exposure to a concentration of 5000 ppm causes intolerable irritation of the
eyes
Concentration of 200 ppm causes irritation of eyes

Respiratory or skin sensitization

Product: No data available.

Carcinogenicity

Product: No data available.



IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Ethylbenzene Overall evaluation: 2B. Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ cell mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific target organ toxicity - single exposure

Product: No data available.

Specific target organ toxicity - repeated exposure

Product: No data available.

Aspiration hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Acetone LC 50 (Fathead minnow (Pimephales promelas), 0.5 h): 7,830 - 9,337 mg/l
 Mortality LC 50 (Fathead minnow (Pimephales promelas), 2 h): 7,081 - 9,120 mg/l
 Mortality LC 50 (Zebra danio (Danio rerio), 2 h): > 100 mg/l
 Mortality LC 50 (Zebra danio (Danio rerio), 2 h): > 100 mg/l
 Mortality LC 50 (Fathead minnow (Pimephales promelas), 4 h): 9,821 - 11,014 mg/l
 Mortality

Toluene LC 50 (Rainbow trout, donaldson trout (Oncorhynchus mykiss), 24 h): 6.26 - 8.4 mg/l
 Mortality LC 50 (Pink salmon (Oncorhynchus gorbuscha), 24 h):



6.97 - 8.62 mg/l Mortality LC 50 (Pink salmon (*Oncorhynchus gorbuscha*), 24 h): 7.45 - 8.75 mg/l Mortality LC 50 (Medaka, high-eyes (*Oryzias latipes*), 24 h): 80 mg/l Mortality LC 50 (Zebra danio (*Danio rerio*), 24 h): > 100 mg/l Mortality

Aquatic invertebrates

Product: No data available.

Specified substance(s):

Acetone EC 50 (Water flea (*Daphnia magna*), 2 h): > 100 mg/l Intoxication EC 50 (Water flea (*Daphnia magna*), 4 h): > 100 mg/l Intoxication EC 50 (Water flea (*Daphnia magna*), 6 h): > 100 mg/l Intoxication EC 50 (Water flea (*Daphnia magna*), 24 h): 21.3 - 35.5 mg/l Intoxication EC 50 (Water flea (*Daphnia magna*), 24 h): > 100 mg/l Intoxication

Toluene LC 50 (Water flea (*Daphnia magna*), 24 h): 240 - 420 mg/l Mortality LC 50 (Brine shrimp (*Artemia salina*), 24 h): 33 mg/l Mortality LC 50 (Water flea (*Daphnia magna*), 24 h): 470 mg/l Mortality LC 50 (Brine shrimp (*Artemia* sp.), 24 h): 42.8 - 63.8 mg/l Mortality LC 50 (Rotifer (*Brachionus plicatilis*), 24 h): 519.5 - 585.7 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and degradability

Biodegradation

Product: No data available.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: No data available.

Specified substance(s):



Toluene Green algae (Chlorella fusca), Bioconcentration factor (BCF): 380 (Not reported)
 Green algae (Selenastrum capricornutum), Bioconcentration factor (BCF): 3,016 (Static)
 Green algae (Chlorella fusca vacuolata), Bioconcentration factor (BCF): 380 (Static)
 Shore crab (Hemigrapsus nudus), Bioconcentration factor (BCF): 31 (Flow through)
 Ide, silver or golden orfe (Leuciscus idus), Bioconcentration factor (BCF): 94 (Not reported)

Partition coefficient n-octanol / water (log Kow)

Product: No data available.

Specified substance(s):

Acetone Log Kow: -0.24

Heptane Log Kow: 4.66

Xylene Log Kow: 3.12 - 3.20

Ethylbenzene Log Kow: 3.15

Toluene Log Kow: 2.73

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Acetone No data available.

Naphtha (petroleum), hydrotreated light No data available.

Heptane No data available.

Xylene No data available.

Ethylbenzene No data available.

Toluene No data available.

Known or predicted distribution to environmental compartments

Naphtha (petroleum), hydrotreated light No data available.

13. Disposal considerations

Disposal instructions: No data available.

Contaminated packaging: No data available.



14. Transport information

DOT

UN number:	UN 1993
UN proper shipping name:	Flammable liquids, n.o.s.(Acetone, Heptane)
Transport hazard class(es)	
Class:	3
Label(s):	3
Packing group:	II
Marine Pollutant:	Not regulated.
Special precautions for user:	–

15. Regulatory information

US federal regulations US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Acetone	Reportable quantity: 5000 lbs.
Heptane	Reportable quantity: 100 lbs.
Xylene	Reportable quantity: 100 lbs.
Ethylbenzene	Reportable quantity: 1000 lbs.
Toluene	Reportable quantity: 1000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Not listed.



SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

<u>Chemical identity</u>	<u>RQ</u>
Acetone	5000 lbs.
Heptane	100 lbs.
Xylene	100 lbs.
Ethylbenzene	1000 lbs.
Toluene	1000 lbs.

SARA 311/312 Hazardous chemical

<u>Chemical identity</u>	<u>Threshold Planning Quantity</u>
Acetone	500 lbs
Heptane	500 lbs
Xylene	500 lbs
Ethylbenzene	500 lbs
Toluene	500 lbs

SARA 313 (TRI reporting)

<u>Chemical identity</u>	<u>Reporting threshold for other users</u>	<u>Reporting threshold for manufacturing and processing</u>
Xylene	10000 lbs	25000 lbs.
Ethylbenzene	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Xylene	Reportable quantity: 100 lbs.
Ethylbenzene	Reportable quantity: 1000 lbs.
Toluene	Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ethylbenzene	Carcinogenic.
Toluene	Developmental toxin.
Toluene	Female reproductive toxin.



US. New Jersey Worker and Community Right-to-Know Act

Acetone	Listed
Heptane	Listed
Xylene	Listed
Ethylbenzene	Listed US.

Massachusetts RTK - Substance List

Acetone	Listed
Heptane	Listed
Xylene	Listed
Ethylbenzene	Listed

US. Pennsylvania RTK - Hazardous Substances

Acetone	Listed
Heptane	Listed
Xylene	Listed
Ethylbenzene	Listed

US. Rhode Island RTK

Acetone	Listed
Xylene	Listed
Ethylbenzene	Listed



Inventory Status: Australia AICS:	Not in compliance with the inventory.
Canada DSL Inventory List:	Not in compliance with the inventory.
EU EINECS List:	Not in compliance with the inventory.
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	Not in compliance with the inventory.
EU No Longer Polymers List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	Not in compliance with the inventory.
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	Not in compliance with the inventory.
US TSCA Inventory:	Not in compliance with the inventory.
New Zealand Inventory of Chemicals:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

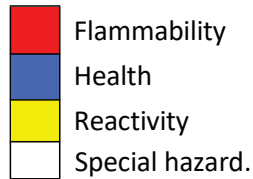
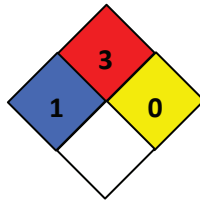
HMIS Hazard ID

Health	*	1
Flammability		3
Physical hazards		0
PERSONAL PROTECTION		K

K - Hood, Gloves, Protective Suit & Boots

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; *Chronic health effect

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date: 04/30/2015
Revision date: No data available.
Version #: 1.0
Further information: No data available.

This Safety Data Sheet is prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012. The information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS

Safety Data Sheet

FPS Emergency Fuel Treatment

SDS Number: 60407

Revision Date: 2/12/2015

Page 1 of 4

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: FPS Emergency Fuel Treatment
Revision Date: 2/12/2015
SDS Number: 60407
CAS Number: Blend
Product Code: 60407
Synonyms: Diesel Fuel Additive

Company Identification

Manufactured for:
Fuel Performance Solutions
P.O. Box 903
Chesterton, IN 46304 USA

1-888-577-3935 (For product information)
1-800-424-9300 (For emergencies)
1-800-424-9300 or 1-703-527-3887 (CHEMTREC)

2 HAZARDS IDENTIFICATION

GHS Signal Word:
WARNING

GHS Classifications:
Physical, Flammable Liquids, 4

GHS Phrases:
H227 - Combustible liquid

GHS Precautionary Statements:
P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Chemical Name	Percentage	CAS#
Dipropylene glycol methyl ether	10.0 - 30.0	34590-94-8

FPS Emergency Fuel Treatment

SDS Number: 60407

Revision Date: 2/12/2015

Page 2 of 4

4 FIRST AID MEASURES

- Inhalation:** If symptoms develop, move victim to fresh air.
If symptoms persist, obtain medical attention.
- Skin Contact:** Wash with soap and water.
Remove contaminated clothing and wash before reuse.
Get medical attention if needed.
- Eye Contact:** Flush with water for several minutes.
If effects occur, consult a physician.
- Ingestion:** Rinse mouth with water and drink 2-4 cups of water.
Get immediate medical attention.
- Note to Physician:
Activated charcoal may be administered.

5 FIRE FIGHTING MEASURES

- Flash Point:** 75.0 C (167.0 F)
Flash Point Method: TCC
LEL: 1.1
UEL: 14

Use dry powder, foam, or carbon dioxide fire extinguishers.
Water may be ineffective unless used by experienced fire fighters.

6 ACCIDENTAL RELEASE MEASURES

Eliminate sources of ignition - Heat, sparks, flame, and electricity
Contain spilled material.
Collect in suitable and properly labeled containers.
Pick up excess with inert absorbant material
Keep away from drains and ground water.

7 HANDLING AND STORAGE

- Handling Precautions:** Avoid contact with eyes, skin, or clothing.
Keep away from sources of ignition.
Do not pressurize, cut, weld, braze, solder, drill, or grind containers.
Handle with care and avoid spillage on the floor (slippage).
Ground and bond containers when transferring material
- Storage Requirements:** Keep away from sources of ignition.
Store in a tightly closed container

FPS Emergency Fuel Treatment

SDS Number: 60407

Revision Date: 2/12/2015

Page 3 of 4

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94).

Personal Protective Equip: Use of safety glasses and gloves are recommended.

EXPOSURE GUIDELINES:

FPS Emergency Fuel Treatment

OSHA PEL: 50 ppm, 240 mg/m³

OSHA TWA: 25 ppm, 120 mg/m³

ACGIH TWA: 20 ppm

Skin Designation: Yes

DIPROPYLENE GLYCOL METHYL ETHER

OSHA PEL: 100 ppm, 600 mg/m³

ACGIH TWA: 100 ppm

ACGIH STEL: 150 ppm

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear

Physical State: Liquid

Spec Grav./Density: 0.951 at 77 F

Viscosity: 3.7 mPa at 25 C

Boiling Point: 190 C

Vapor Pressure: 0.41 mm Hg @ 20 C

Solubility: Soluble in water

Freezing/Melting Pt.: -82.8 C

Vapor Density: 5.11

10 STABILITY AND REACTIVITY

Stability: Product is stable under normal conditions.

Conditions to Avoid: High temperatures above 50 C (122 F) and open flame.

Materials to Avoid: Avoid strong oxidizing agents.
May burn or react violently to flourine/oxygen mixtures.

11 TOXICOLOGICAL INFORMATION

Repeated skin contact with this product may cause dermatitis or acne.

No test data available on product.

No component is listed as a carcinogen, mutagen, or teratogen.

LD50 / LC50 - No data available

12 ECOLOGICAL INFORMATION

Avoid exposing to the environment, no specific aquatic data available

FPS Emergency Fuel Treatment

SDS Number: 60407

Revision Date: 2/12/2015

Page 4 of 4

13 DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations.
Do not flush to surface water or drains

14 TRANSPORT INFORMATION

UN #: UN 1993, Class: 3, Proper Shipping Name: Combustible liquids, n.o.s.

MISCELLANEOUS:

This material is not regulated for US DOT transportation in quantities less than 119 Gallons.

If shipping overseas, or via air, the proper shipping name is: Flammable liquid, n.o.s., (Contains dipropylene glycol methyl ether), 3, UN1993, PGIII.



15 REGULATORY INFORMATION

This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substances Control Act (TSCA).

REGULATORY DISCLOSURES:

Pennsylvania Right to Know List:

Dipropylene Glycol Monomethyl Ether, CAS# 34590-94-8, 10.0 - 30.0 %.

Canadian Disclosure List

DIPROPYLENE GLYCOL METHYL ETHER (34590-94-8)

16 OTHER INFORMATION

The information contained in this Safety Data Sheet relates only to the specific material designated. Fuel Performance Solutions assumes no legal responsibility for use or reliance upon this data. This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Fuel Performance Solutions.



SAFETY DATA SHEET

Chain and Cable (Aerosol)

Section 1. Identification

- GHS product identifier** : Chain and Cable (Aerosol)
- Other means of identification** : Not available.
- Product type** : Aerosol.
- Relevant identified uses of the substance or mixture and uses advised against**
- Product use** : Petroleum lubricating oil
- Area of application** : Industrial applications.
- Supplier/Manufacturer** : LUBRIPLATE® Lubricants Co.
129 Lockwood St.
Newark, NJ 07105
Telephone no.: 1-973-589-9150
- e-mail address of person responsible for this SDS** : SDS@lubriplate.com
- Emergency telephone number (with hours of operation)** : CHEM-TEL 1-800-255-3924 (24 hour)

Section 2. Hazards identification

- OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Classification of the substance or mixture** : **H222 FLAMMABLE AEROSOLS - Category 1**
H280 GASES UNDER PRESSURE - Compressed gas
H315 SKIN IRRITATION - Category 2
H319 EYE IRRITATION - Category 2A
H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H304 ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 41.6%

GHS label elements

Hazard pictograms



Signal word

: Danger

Section 2. Hazards identification

- Hazard statements** : P222 - Extremely flammable aerosol.
 H280 - Contains gas under pressure; may explode if heated.
 H319 - Causes serious eye irritation.
 H315 - Causes skin irritation.
 H304 - May be fatal if swallowed and enters airways.
 H335 - May cause respiratory irritation.
 H336 - May cause drowsiness and dizziness.
- Precautionary statements**
- Prevention** : P280 - Wear protective gloves. Wear eye or face protection.
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P211 - Do not spray on an open flame or other ignition source.
 P271 - Use only outdoors or in a well-ventilated area.
 P261 - Avoid breathing vapor.
 P264 - Wash hands thoroughly after handling.
 P251 - Pressurized container: Do not pierce or burn, even after use.
- Response** : P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
 P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
 P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.
 P332 + P313 - If skin irritation occurs: Get medical attention.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337 + P313 - If eye irritation persists: Get medical attention.
- Storage** : P405 - Store locked up.
 P410 - Protect from sunlight.
 P412 - Do not expose to temperatures exceeding 50 °C/122 °F.
 P403 - Store in a well-ventilated place.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Avoid contact with skin and clothing. Wash thoroughly after handling.
- Hazards not otherwise classified** : Defatting to the skin. Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

CAS number/other identifiers

- CAS number** : Not applicable.
- Product code** : Not available.

Section 3. Composition/information on ingredients

Ingredient name	Other names	%	CAS number
Distillates (petroleum), hydrotreated light Stoddard solvent	-	≥50 - <75	64742-47-8
Solvent naphtha (petroleum), medium aliph.	-	≥10 - <25	8052-41-3
Residual oils (petroleum), solvent-dewaxed	-	≥19 - <25	64742-88-7
Distillates (petroleum), hydrotreated heavy naphthenic	-	≥10 - <25	64742-62-7
Carbon dioxide	-	≥5 - <10	64742-52-5
2-butoxyethanol	-	≥1 - <3	124-38-9
	-	≥1.7 - <3	111-76-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Section 4. First aid measures

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
Foam or Use dry chemical or CO₂.

- Unsuitable extinguishing media** : Do not use water jet.

Specific hazards arising from the chemical

- Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Section 5. Fire-fighting measures

sulfur oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

: Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated light Stoddard solvent	<p>ACGIH TLV (United States, 4/2014). Absorbed through skin. TWA: 200 mg/m³, (as total hydrocarbon vapor) 8 hours.</p> <p>ACGIH TLV (United States, 4/2014). TWA: 100 ppm 8 hours. TWA: 525 mg/m³ 8 hours.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 100 ppm 8 hours. TWA: 525 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 350 mg/m³ 10 hours. CEIL: 1800 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 2/2013). TWA: 500 ppm 8 hours. TWA: 2900 mg/m³ 8 hours.</p>
Solvent naphtha (petroleum), medium aliph.	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 100 ppm 8 hours. TWA: 400 mg/m³ 8 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 100 ppm 8 hours. TWA: 400 mg/m³ 8 hours.</p> <p>ACGIH TLV (United States, 1/2008). TWA: 5 mg/m³ 8 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p> <p>ACGIH TLV (United States, 4/2014).</p>
Residual oils (petroleum), solvent-dewaxed	

Section 8. Exposure controls/personal protection

Distillates (petroleum), hydrotreated heavy naphthenic	<p>TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p> <p>OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours.</p> <p>ACGIH TLV (United States, 4/2014). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p>
2-butoxyethanol	<p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p> <p>OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours.</p> <p>OSHA PEL 1989 (United States, 3/1989). Absorbed through skin. TWA: 25 ppm 8 hours. TWA: 120 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). Absorbed through skin. TWA: 5 ppm 10 hours. TWA: 24 mg/m³ 10 hours.</p> <p>ACGIH TLV (United States, 4/2014). TWA: 20 ppm 8 hours.</p> <p>OSHA PEL (United States, 2/2013). Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 240 mg/m³ 8 hours.</p>
Carbon dioxide	<p>ACGIH TLV (United States, 4/2014). Oxygen Depletion [Asphyxiant]. TWA: 5000 ppm 8 hours. TWA: 9000 mg/m³ 8 hours. STEL: 30000 ppm 15 minutes. STEL: 54000 mg/m³ 15 minutes.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 10000 ppm 8 hours. TWA: 18000 mg/m³ 8 hours. STEL: 30000 ppm 15 minutes. STEL: 54000 mg/m³ 15 minutes.</p> <p>NIOSH REL (United States, 10/2013). TWA: 5000 ppm 10 hours. TWA: 9000 mg/m³ 10 hours. STEL: 30000 ppm 15 minutes. STEL: 54000 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 2/2013). TWA: 5000 ppm 8 hours. TWA: 9000 mg/m³ 8 hours.</p>

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Section 8. Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Aerosol./ oil]

Color : Off-white.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : Not applicable.

Flash point : Closed cup: 154°C (309.2°F) without propellant

Evaporation rate : > to butyl acetate

Flammability (solid, gas) : Not applicable.

Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits	: Lower: 0.9% Upper: 9.5%
Vapor pressure	: 4137 mm Hg at °C:54
Vapor density	: >1 [Air = 1]
Relative density	: 0.93 without propellant
Solubility	: Insoluble in the following materials: cold water and hot water.
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: 177°C (350.6°F) without propellant
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: 6 cSt at °C:100 without propellant
Aerosol product	
Type of aerosol	: Spray
Heat of combustion	: 30 kJ/g

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame).
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials, metals and alkalis.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Distillates (petroleum), hydrotreated heavy naphthenic 2-butoxyethanol	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapor	Rat	450 ppm	4 hours
	LD50 Oral	Rat	917 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Distillates (petroleum), hydrotreated heavy naphthenic 2-butoxyethanol	Skin - Severe irritant	Rabbit	-	500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
2-butoxyethanol	-	3	-

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Distillates (petroleum), hydrotreated light Stoddard solvent Solvent naphtha (petroleum), medium aliph.	Category 3	Not applicable.	Narcotic effects
	Category 3	Not applicable.	Narcotic effects
	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
2-butoxyethanol	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Name	Result
Distillates (petroleum), hydrotreated light Stoddard solvent Solvent naphtha (petroleum), medium aliph. Residual oils (petroleum), solvent-dewaxed Distillates (petroleum), hydrotreated heavy naphthenic	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Inhalation.

Section 11. Toxicological information

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Not available.

- General** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Section 11. Toxicological information

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	50341 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Distillates (petroleum), hydrotreated light 2-butoxyethanol	Acute LC50 2200 µg/l Fresh water	Fish - Lepomis macrochirus	4 days
	Acute EC50 >1000 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 800000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 1250000 µg/l Marine water	Fish - Menidia beryllina	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Residual oils (petroleum), solvent-dewaxed 2-butoxyethanol	OECD 301B Ready Biodegradability - CO ₂ Evolution Test	6 % - 28 days	-	-
	301E Ready Biodegradability - Modified OECD Screening Test	95 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Residual oils (petroleum), solvent-dewaxed 2-butoxyethanol	-	-	Not readily
	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Stoddard solvent 2-butoxyethanol	3.16 to 7.06 0.81	- <100	high low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.


Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1950	UN1950	UN1950
UN proper shipping name	Aerosols (Limited quantity)	AEROSOLS (Limited quantity)	Aerosols, flammable (Limited quantity)
Transport hazard class(es)	2.1 This product meets the Limited Quantity exemption.	2.1 This product meets the Limited Quantity exemption.	2.1 This product meets the Limited Quantity exemption. 
Packing group	-	-	-
Environmental hazards	Yes.	Yes.	No.
Additional information	<p>This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.</p> <p>Packaging instruction Passenger aircraft Quantity limitation: 75 kg</p> <p>Cargo aircraft Quantity limitation: 150 kg</p> <p>Special provisions N82</p> <p>Remarks Packaging: Limited quantity</p>	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p>Emergency schedules (EmS) F-D, S-U</p> <p>Special provisions 63, 190, 277, 327, 344, 959</p> <p>Remarks Packaging: Limited quantity</p>	<p>The environmentally hazardous substance mark may appear if required by other transportation regulations.</p> <p>Passenger and Cargo Aircraft Quantity limitation: 75 kg Packaging instructions: 203</p> <p>Cargo Aircraft Only Quantity limitation: 150 kg Packaging instructions: 203</p> <p>Limited Quantities - Passenger Aircraft Quantity limitation: 30 kg Packaging instructions: Y203</p> <p>Special provisions A145, A167, A802</p> <p>Remarks Packaging: Limited quantity</p>

Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: zinc neodecanoate; Naphthenic acids, zinc salts

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Sudden release of pressure
Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
<input checked="" type="checkbox"/> Distillates (petroleum), hydrotreated light	≥50 - <75	Yes.	No.	No.	Yes.	No.
Stoddard solvent	≥10 - <25	Yes.	No.	No.	Yes.	No.
Solvent naphtha (petroleum), medium aliph.	≥19 - <25	Yes.	No.	No.	Yes.	No.
Residual oils (petroleum), solvent-dewaxed	≥10 - <25	No.	No.	No.	Yes.	No.
Distillates (petroleum), hydrotreated heavy naphthenic	≥5 - <10	No.	No.	No.	Yes.	No.
2-butoxyethanol	≥1.7 - <3	Yes.	No.	No.	Yes.	No.

SARA 313

Section 15. Regulatory information

	Product name	CAS number	%
Form R - Reporting requirements	2-butoxyethanol	111-76-2	≥1.7 - <3
Supplier notification	2-butoxyethanol	111-76-2	≥1.7 - <3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: 2-BUTOXYETHANOL; STODDARD SOLVENT; CARBON DIOXIDE
- New York** : None of the components are listed.
- New Jersey** : The following components are listed: MINERAL OIL (HIGHLY REFINED); OIL MIST, MINERAL; MINERAL OIL (HIGHLY REFINED); OIL MIST, MINERAL; 2-BUTOXY ETHANOL; BUTYL CELLOSOLVE; STODDARD SOLVENT; CARBON DIOXIDE; CARBONIC ACID GAS
- Pennsylvania** : The following components are listed: ETHANOL, 2-BUTOXY-; STODDARD SOLVENT; CARBON DIOXIDE

California Prop. 65

None of the components are listed.

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		4
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Section 16. Other information



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Flam. Aerosol 1, H222 Press. Gas Comp. Gas, H280 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 STOT SE 3, H336 Asp. Tox. 1, H304	On basis of test data Expert judgment Calculation method Calculation method Calculation method Calculation method Expert judgment

History

Date of issue/Date of revision : 06/11/2015

Date of previous issue : 03/02/2015

Version : 2

Prepared by : IHS

Key to abbreviations : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

References : HCS (U.S.A.)- Hazard Communication Standard
 International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



SAFETY DATA SHEET

Gear Shield Extra Heavy (Aerosol)

Section 1. Identification

GHS product identifier : Gear Shield Extra Heavy (Aerosol)
Other means of identification : Not available.
Product type : Aerosol.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Petroleum lubricating grease
Area of application : Industrial applications.

Supplier/Manufacturer : LUBRIPLATE® Lubricants Co.
129 Lockwood St.
Newark, NJ 07105
Telephone no.: 1-973-589-9150

e-mail address of person responsible for this SDS : SDS@lubriplate.com

Emergency telephone number (with hours of operation) : CHEM-TEL 1-800-255-3924 (24 hour)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : **H222** FLAMMABLE AEROSOLS - Category 1
H280 GASES UNDER PRESSURE - Compressed gas
H315 SKIN IRRITATION - Category 2
H351 CARCINOGENICITY - Category 2
H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H304 ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 24.9%

GHS label elements

Hazard pictograms :



Signal word : **Danger**

Date of issue/Date of revision : 06/22/2015 **Date of previous issue** : 03/02/2015 **Version** : 2 1/16

Section 2. Hazards identification

- Hazard statements** : **F**222 - Extremely flammable aerosol.
H280 - Contains gas under pressure; may explode if heated.
H315 - Causes skin irritation.
H351 - Suspected of causing cancer.
H304 - May be fatal if swallowed and enters airways.
H336 - May cause drowsiness and dizziness.
- Precautionary statements**
- Prevention** : **P**201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 - Do not spray on an open flame or other ignition source.
P271 - Use only outdoors or in a well-ventilated area.
P261 - Avoid breathing gas.
P264 - Wash hands thoroughly after handling.
P251 - Pressurized container: Do not pierce or burn, even after use.
- Response** : **P**308 + P313 - IF exposed or concerned: Get medical attention.
P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.
P332 + P313 - If skin irritation occurs: Get medical attention.
- Storage** : **P**405 - Store locked up.
P410 - Protect from sunlight.
P412 - Do not expose to temperatures exceeding 50 °C/122 °F.
P403 - Store in a well-ventilated place.
- Disposal** : **P**501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Avoid contact with skin and clothing. Wash thoroughly after handling.
- Hazards not otherwise classified** : Defatting to the skin. Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.
- CAS number/other identifiers**
- CAS number** : Not applicable.
- Product code** : Not available.

Section 3. Composition/information on ingredients

Ingredient name	Other names	%	CAS number
Distillates (petroleum), hydrotreated light	-	≥25 - <50	64742-47-8
Petroleum gases, liquefied, sweetened	-	≥10 - <25	68476-86-8
Asphalt	-	≥5 - <10	8052-42-4
Residual oils (petroleum), solvent-dewaxed	-	≥5 - <10	64742-62-7
Residues (petroleum), atm. tower	-	≥5 - <10	64741-45-3
Distillates (petroleum), hydrotreated heavy naphthenic	-	≥5 - <10	64742-52-5
zinc oxide	-	≥1 - <3	1314-13-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Section 4. First aid measures

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : Do not use water jet.

Specific hazards arising from the chemical

- Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Avoid breathing gas. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting

Section 7. Handling and storage

and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene

- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

- : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated light	ACGIH TLV (United States, 4/2014). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapor) 8 hours.
Petroleum gases, liquefied, sweetened	ACGIH TLV (United States, 1/2008). TWA: 1000 ppm 8 hours.
Asphalt	NIOSH REL (United States, 10/2013). CEIL: 5 mg/m ³ 15 minutes. Form: Fume
Residual oils (petroleum), solvent-dewaxed	ACGIH TLV (United States, 4/2014). TWA: 0.5 mg/m ³ , (as benzene soluble aerosol) 8 hours. Form: Inhalable fraction ACGIH TLV (United States, 4/2014). TWA: 5 mg/m ³ 8 hours. Form: Inhalable fraction NIOSH REL (United States, 10/2013). TWA: 5 mg/m ³ 10 hours. Form: Mist STEL: 10 mg/m ³ 15 minutes. Form: Mist OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours.
Distillates (petroleum), hydrotreated heavy naphthenic	ACGIH TLV (United States, 4/2014). TWA: 5 mg/m ³ 8 hours. Form: Inhalable fraction NIOSH REL (United States, 10/2013). TWA: 5 mg/m ³ 10 hours. Form: Mist STEL: 10 mg/m ³ 15 minutes. Form: Mist OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours.
zinc oxide	NIOSH REL (United States, 10/2013). CEIL: 15 mg/m ³ Form: Dust TWA: 5 mg/m ³ 10 hours. Form: Dust and fumes STEL: 10 mg/m ³ 15 minutes. Form: Fume OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Fume STEL: 10 mg/m ³ 15 minutes. Form: Fume

Section 8. Exposure controls/personal protection

TWA: 5 mg/m³ 8 hours. Form: Respirable fraction
 TWA: 10 mg/m³ 8 hours. Form: Total dust
OSHA PEL (United States, 2/2013).
 TWA: 5 mg/m³ 8 hours. Form: Fume
 TWA: 5 mg/m³ 8 hours. Form: Respirable fraction
 TWA: 15 mg/m³ 8 hours. Form: Total dust
ACGIH TLV (United States, 4/2014).
 TWA: 2 mg/m³ 8 hours. Form: Respirable fraction
 STEL: 10 mg/m³ 15 minutes. Form: Respirable fraction

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Gas. [Aerosol.]
- Color** : Black. / Gray.
- Odor** : Solvent.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: <-18°C (<-0.4°F) Propellant
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : 792.8 kPa (5946.7 mm Hg) [54°C] (115 psig)
- Vapor density** : >1 [Air = 1]
- Relative density** : 0.98 [Water = 1]
- Solubility** : Insoluble in the following materials: cold water and hot water.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not available.
- Physical/chemical properties comments** : Kinematic viscosity (100 °C (212 °F)): 0.31 cm²/s (31 cSt)
- Aerosol product**
- Type of aerosol** : Spray

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 10. Stability and reactivity

Conditions to avoid : Avoid all possible sources of ignition (spark or flame).

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Asphalt	LD50 Oral	Rat	>5000 mg/kg	-
Residues (petroleum), atm. tower	LD50 Oral	Rat	>5000 mg/kg	-
Distillates (petroleum), hydrotreated heavy naphthenic	LD50 Oral	Rat	>5000 mg/kg	-

Conclusion/Summary : Adverse symptoms may include the following: Aspiration hazard if swallowed. Can enter lungs and cause damage.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Distillates (petroleum), hydrotreated heavy naphthenic zinc oxide	Skin - Severe irritant	Rabbit	-	500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : The mineral oils in the product contain < 3% DMSO extract (IP 346).

Classification

Product/ingredient name	OSHA	IARC	NTP
Asphalt	-	2B	-

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
<input checked="" type="checkbox"/> Distillates (petroleum), hydrotreated light	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Name	Result
Distillates (petroleum), hydrotreated light	ASPIRATION HAZARD - Category 1
Residual oils (petroleum), solvent-dewaxed	ASPIRATION HAZARD - Category 1
Distillates (petroleum), hydrotreated heavy naphthenic	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Section 11. Toxicological information

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Distillates (petroleum), hydrotreated light zinc oxide	Acute LC50 2200 µg/l Fresh water	Fish - Lepomis macrochirus	4 days
	Acute IC50 1.85 mg/l Marine water	Algae - Skeletonema costatum	96 hours
	Acute IC50 46 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute LC50 98 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1.1 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Residual oils (petroleum), solvent-dewaxed	OECD 301B Ready Biodegradability - CO ₂ Evolution Test	6 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Residual oils (petroleum), solvent-dewaxed	-	-	Not readily

Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Petroleum gases, liquefied, sweetened	1.09	-	low
Residues (petroleum), atm. tower	2.7 to 6	-	high
zinc oxide	-	60960	high

Mobility in soil


Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1950	UN1950	UN1950
UN proper shipping name	Aerosols (Limited quantity)	AEROSOLS (Limited quantity)	Aerosols, flammable (Limited quantity)
Transport hazard class(es)	2.1 This product meets the Limited Quantity exemption.	2.1 This product meets the Limited Quantity exemption.	2.1 This product meets the Limited Quantity exemption. 
Packing group	-	-	-
Environmental hazards	No.	Yes.	No.

Section 14. Transport information

<p>Additional information</p>	<p>Packaging instruction Passenger aircraft Quantity limitation: 75 kg</p> <p>Cargo aircraft Quantity limitation: 150 kg</p> <p>Special provisions N82</p> <p>Remarks Packaging: Limited quantity</p>	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p>Emergency schedules (EmS) F-D, S-U</p> <p>Special provisions 63, 190, 277, 327, 344, 959</p> <p>Remarks Packaging: Limited quantity</p>	<p>The environmentally hazardous substance mark may appear if required by other transportation regulations.</p> <p>Passenger and Cargo Aircraft Quantity limitation: 75 kg Packaging instructions: 203</p> <p>Cargo Aircraft OnlyQuantity limitation: 150 kg Packaging instructions: 203</p> <p>Limited Quantities - Passenger AircraftQuantity limitation: 30 kg Packaging instructions: Y203</p> <p>Special provisions A145, A167, A802</p> <p>Remarks Packaging: Limited quantity</p>
--------------------------------------	---	---	---

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: zinc oxide
 Clean Water Act (CWA) 311: hydrogen sulfide

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304
[Composition/information on ingredients](#)

Section 15. Regulatory information

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Hydrogen sulfide	<0.1	Yes.	500	-	100	-

SARA 304 RQ : 1157407.4 lbs / 525463 kg

SARA 311/312

Classification : Fire hazard
Sudden release of pressure
Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Distillates (petroleum), hydrotreated light	≥25 - <50	Yes.	No.	No.	Yes.	No.
Petroleum gases, liquefied, sweetened	≥10 - <25	Yes.	Yes.	No.	Yes.	No.
Asphalt	≥5 - <10	No.	No.	No.	No.	Yes.
Residual oils (petroleum), solvent-dewaxed	≥5 - <10	No.	No.	No.	Yes.	No.
Residues (petroleum), atm. tower	≥5 - <10	Yes.	No.	No.	Yes.	No.
Distillates (petroleum), hydrotreated heavy naphthenic	≥5 - <10	No.	No.	No.	Yes.	No.
zinc oxide	≥1 - <3	No.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Zinc oxide	1314-13-2	≥1 - <3
Supplier notification	Zinc oxide	1314-13-2	≥1 - <3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: ASPHALT FUMES; ZINC OXIDE FUME; CARBON BLACK

New York : None of the components are listed.

New Jersey : The following components are listed: ASPHALT; ASPHALT (TYPICAL); MINERAL OIL (HIGHLY REFINED); OIL MIST, MINERAL; MINERAL OIL (HIGHLY REFINED); OIL MIST, MINERAL; ZINC OXIDE; CARBON BLACK

Pennsylvania : The following components are listed: ASPHALT; ZINC OXIDE (ZNO); CARBON BLACK

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
carbon black non-respirable	Yes.	No.	No.	No.

Section 15. Regulatory information

[Chemical Weapon Convention List Schedules I, II & III Chemicals](#)

Not listed.

[Montreal Protocol \(Annexes A, B, C, E\)](#)

Not listed.

[Stockholm Convention on Persistent Organic Pollutants](#)

Not listed.

[Rotterdam Convention on Prior Inform Consent \(PIC\)](#)

Not listed.

[UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

Section 16. Other information

[Hazardous Material Information System \(U.S.A.\)](#)

Health	*	2
Flammability		4
Physical hazards		2

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

[National Fire Protection Association \(U.S.A.\)](#)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

[Procedure used to derive the classification](#)

Section 16. Other information

Classification	Justification
Flam. Aerosol 1, H222 Press. Gas Comp. Gas, H280 Skin Irrit. 2, H315 Carc. 2, H351 STOT SE 3, H336 Asp. Tox. 1, H304	On basis of test data On basis of test data Calculation method Calculation method Calculation method Expert judgment

History

Date of issue/Date of revision : 06/22/2015

Date of previous issue : 03/02/2015

Version : 2

Prepared by : IHS

Key to abbreviations

: ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

References

: HCS (U.S.A.)- Hazard Communication Standard
 International transport regulations

☑ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



SAFETY DATA SHEET

No. 176 Open Gear Lubricant

Section 1. Identification

GHS product identifier : No. 176 Open Gear Lubricant
Other means of identification : Not available.
Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Petroleum lubricating grease
Area of application : Industrial applications.

Supplier/Manufacturer : LUBRIPLATE® Lubricants Co.
129 Lockwood St.
Newark, NJ 07105
Telephone no.: 1-973-589-9150

e-mail address of person responsible for this SDS : SDS@lubriplate.com

Emergency telephone number (with hours of operation) : CHEM-TEL 1-800-255-3924 (24 hour)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 16.4%

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention : Do not breathe dust.

Response : Get medical attention if you feel unwell.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Avoid contact with skin and clothing. Wash thoroughly after handling.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Date of issue/Date of revision : 03/10/2015 **Date of previous issue** : No previous validation **Version** : 1 1/12

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.
Product code : Not available.

Ingredient name	Other names	%	CAS number
Residual oils (petroleum), solvent-dewaxed	Residual oils (petroleum), solvent-dewaxed	30-60	64742-62-7
Distillates (petroleum), hydrotreated heavy naphthenic	Distillates (petroleum), hydrotreated heavy naphthenic	10-30	64742-52-5
Distillates (petroleum), hydrotreated light naphthenic	Distillates (petroleum), hydrotreated light naphthenic	5-10	64742-53-6
Natural graphite	Graphite	5-10	7782-42-5
antimony tris[O,O-dipropyl] tris (dithiophosphate)	antimony tris[O,O-dipropyl] tris(dithiophosphate)	1-5	15874-48-3
crystalline silica respirable	Quartz (SiO ₂)	0.1-1	14808-60-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Section 4. First aid measures

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
dryness
cracking
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : Do not use water jet.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
phosphorus oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Residual oils (petroleum), solvent-dewaxed	ACGIH TLV (United States, 4/2014). TWA: 5 mg/m ³ 8 hours. Form: Inhalable fraction NIOSH REL (United States, 10/2013). TWA: 5 mg/m ³ 10 hours. Form: Mist STEL: 10 mg/m ³ 15 minutes. Form: Mist OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours.

Section 8. Exposure controls/personal protection

<p>Distillates (petroleum), hydrotreated heavy naphthenic</p>	<p>ACGIH TLV (United States, 4/2014). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours.</p>
<p>Distillates (petroleum), hydrotreated light naphthenic</p>	<p>ACGIH TLV (United States, 4/2014). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours.</p>
<p>Natural graphite</p>	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 2.5 mg/m³ 8 hours. Form: Respirable dust ACGIH TLV (United States, 4/2014). TWA: 2 mg/m³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 10/2013). TWA: 2.5 mg/m³ 10 hours. Form: Respirable fraction OSHA PEL Z3 (United States, 2/2013). TWA: 15 mppcf 8 hours.</p>
<p>antimony tris[O,O-dipropyl] tris(dithiophosphate)</p>	<p>ACGIH TLV (United States, 4/2014). TWA: 0.5 mg/m³, (as Sb) 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 0.5 mg/m³, (as Sb) 8 hours. OSHA PEL (United States, 2/2013). TWA: 0.5 mg/m³, (as Sb) 8 hours. NIOSH REL (United States, 10/2013). TWA: 0.5 mg/m³, (as Sb) 10 hours.</p>
<p>crystalline silica respirable</p>	<p>OSHA PEL Z3 (United States, 2/2013). TWA: 250 MPPCF / (%SiO₂+5) 8 hours. Form: Respirable TWA: 10 MG/M3 / (%SiO₂+2) 8 hours. Form: Respirable OSHA PEL 1989 (United States, 3/1989). TWA: 0.1 mg/m³, (as quartz) 8 hours. Form: Respirable dust ACGIH TLV (United States, 4/2014). TWA: 0.025 mg/m³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 10/2013). TWA: 0.05 mg/m³ 10 hours. Form: respirable dust</p>

Appropriate engineering controls

: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Solid. [grease, Smooth.]
- Color** : Black.
- Odor** : Mineral oil.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Pour point: -15°C (5°F)
- Boiling point** : >288°C (>550.4°F)
- Flash point** : Open cup: 202°C (395.6°F) [Cleveland.]
- Evaporation rate** : <0.01 (butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 0.9%
Upper: 7%
- Vapor pressure** : <0.01
- Vapor density** : >5 [Air = 1]
- Relative density** : 0.98 [Water = 1]
- Solubility** : Insoluble in the following materials: cold water and hot water.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- SADT** : Not available.

Section 9. Physical and chemical properties

- Viscosity** : Kinematic (40°C (104°F)): 3.13 cm²/s (313 cSt)
- Physical/chemical properties comments** : Kinematic viscosity (100°C (212°F)): 0.24 cm²/s (24 cSt)

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : Keep away from heat, sparks and flame. Keep away from all sources of ignition.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials.
Chlorine
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Distillates (petroleum), hydrotreated heavy naphthenic	LD50 Oral	Rat	>5000 mg/kg	-
Distillates (petroleum), hydrotreated light naphthenic	LD50 Oral	Rat	>5000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Distillates (petroleum), hydrotreated heavy naphthenic	Skin - Severe irritant	Rabbit	-	500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Conclusion/Summary : The mineral oils in the product contain < 3% DMSO extract (IP 346).

Classification

Product/ingredient name	OSHA	IARC	NTP
crystalline silica respirable	-	1	Known to be a human carcinogen.

Reproductive toxicity

Not available.

Section 11. Toxicological information

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Natural graphite	Category 3	Not applicable.	Respiratory tract irritation
antimony tris[O,O-dipropyl] tris(dithiophosphate)	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Natural graphite	Category 2	Not determined	lungs
antimony tris[O,O-dipropyl] tris(dithiophosphate)	Category 2	Not determined	cardiovascular system
crystalline silica respirable	Category 1	Inhalation	lungs

Aspiration hazard

Name	Result
Residual oils (petroleum), solvent-dewaxed	ASPIRATION HAZARD - Category 1
Distillates (petroleum), hydrotreated heavy naphthenic	ASPIRATION HAZARD - Category 1
Distillates (petroleum), hydrotreated light naphthenic	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation.
- Ingestion** : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
dryness
cracking
- Ingestion** : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Section 11. Toxicological information

Not available.

- General** : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	17737.9 mg/kg
Inhalation (dusts and mists)	53.21 mg/l

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Residual oils (petroleum), solvent-dewaxed	OECD 301B Ready Biodegradability - CO ₂ Evolution Test	6 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Residual oils (petroleum), solvent-dewaxed	-	-	Not readily

Bioaccumulative potential

Not available.

Mobility in soil

- Soil/water partition coefficient (K_{oc})** : Not available.

- Other adverse effects** : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: antimony tris[O,O-dipropyl] tris(dithiophosphate)

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

Section 15. Regulatory information

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Residual oils (petroleum), solvent-dewaxed	30-60	No.	No.	No.	Yes.	No.
Distillates (petroleum), hydrotreated heavy naphthenic	10-30	No.	No.	No.	Yes.	No.
Distillates (petroleum), hydrotreated light naphthenic	5-10	No.	No.	No.	Yes.	No.
Natural graphite	5-10	No.	No.	No.	Yes.	Yes.
antimony tris[O,O-dipropyl] tris (dithiophosphate)	1-5	No.	No.	No.	Yes.	Yes.
crystalline silica respirable	0.1-1	No.	No.	No.	No.	Yes.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	antimony tris[O,O-dipropyl] tris(dithiophosphate)	15874-48-3	1-5
Supplier notification	antimony tris[O,O-dipropyl] tris(dithiophosphate)	15874-48-3	1-5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts

: The following components are listed: MINERAL OIL, PETROLEUM DISTILLATES, HYDROTREATED LIGHT NAPHTHENIC; GRAPHITE (NATURAL)DUST; CARBON BLACK

New York

: None of the components are listed.

New Jersey

: The following components are listed: MINERAL OIL (HIGHLY REFINED); OIL MIST, MINERAL; MINERAL OIL (HIGHLY REFINED); OIL MIST, MINERAL; MINERAL OIL (HIGHLY REFINED); OIL MIST, MINERAL; ANTIMONY compounds; GRAPHITE (NATURAL); GRAPHITE; SILICA, QUARTZ; QUARTZ (SiO₂); CARBON BLACK

Pennsylvania

: The following components are listed: ANTIMONY COMPOUNDS; GRAPHITE; QUARTZ (SiO₂); CARBON BLACK

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
crystalline silica respirable	Yes.	No.	No.	No.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		1
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 03/10/2015

Date of previous issue : No previous validation

Version : 1

Prepared by : IHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : HCS (U.S.A.)- Hazard Communication Standard
International transport regulations

▣ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



SAFETY DATA SHEET

Power Hammer & Chisel Grease

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification

Product identifier

Product name Power Hammer & Chisel Grease

Product number L0190-035, L0190-039, L0190-098

Recommended use of the chemical and restrictions on use

Application Lubricating grease.

Uses advised against No specific uses advised against are identified.

Details of the supplier of the safety data sheet

Manufacturer Lubriplate Lubricants Co.
Corporate Headquarters
129 Lockwood Street
Newark, NJ 07105

Midwest Office & Plant
1500 Oakdale Ave.
Toledo, OH 43605
419-691-2491
419-693-3806

Emergency telephone number

Emergency telephone Chem-Tel: 1-800-255-3924 (US & Canada only)
01-813-248-0585 (Outside US & Canada)

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Not Classified

Health hazards Skin Sens. 1 - H317

Environmental hazards Aquatic Acute 2 - H401 Aquatic Chronic 2 - H411

Label elements

Pictogram



Signal word Warning

Hazard statements H317 May cause an allergic skin reaction.
H411 Toxic to aquatic life with long lasting effects.

Power Hammer & Chisel Grease

Precautionary statements	P261 Avoid breathing dust.
	P272 Contaminated work clothing must not be allowed out of the workplace.
	P273 Avoid release to the environment.
	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
	P302+P352 If on skin: Wash with plenty of water.
	P321 Specific treatment (see medical advice on this label).
	P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
	P362+P364 Take off contaminated clothing and wash it before reuse.
	P391 Collect spillage.
P501 Dispose of contents/ container in accordance with national regulations.	

Contains Zinc bis(dibutyldithiocarbamate)

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

Distillates (petroleum), hydrotreated heavy naphthenic CAS number: 64742-52-5	60-100%
Classification Not Classified	
White mineral oil (petroleum) CAS number: 8042-47-5	5-10%
Classification Not Classified	
Antimony dialkyldithiocarbamate CAS number: 15890-25-2	1-5%
Classification Skin Irrit. 2 - H315 Eye Irrit. 2A - H319	
Copper CAS number: 7440-50-8 M factor (Acute) = 1	1-5%
Classification Acute Tox. 4 - H302 Aquatic Acute 1 - H400 Aquatic Chronic 2 - H411	

Power Hammer & Chisel Grease

Carbon graphite CAS number: 7782-42-5	1-5%
Classification Not Classified	
Zinc bis(dibutyldithiocarbamate) CAS number: 136-23-2 M factor (Acute) = 1 M factor (Chronic) = 10	<1%
Classification Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 Skin Sens. 1 - H317 STOT SE 3 - H335 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	
Crystalline silica CAS number: 14808-60-7	<1%
Classification Carc. 1B - H350 STOT RE 1 - H372	

The full text for all hazard statements is displayed in Section 16.

Composition comments * The exact percentage withheld as a trade secret in accordance with 29 CFR 1910.1200.

4. First-aid measures

Description of first aid measures

General information	Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.
Inhalation	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Ingestion	Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
Skin Contact	Rinse with water.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

Power Hammer & Chisel Grease

Most important symptoms and effects, both acute and delayed

General information	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	No specific symptoms known.
Ingestion	May cause discomfort if swallowed. May cause stomach pain or vomiting.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	No specific symptoms known. May be slightly irritating to eyes.

Indication of immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
-----------------------------	------------------------

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Specific hazards	None known.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

Advice for firefighters

Protective actions during firefighting	Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material.
-----------------------------	---

Environmental precautions

Environmental precautions	Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).
----------------------------------	--

Methods and material for containment and cleaning up

Power Hammer & Chisel Grease

Methods for cleaning up	Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Approach the spillage from upwind. Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
Reference to other sections	For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Keep container tightly sealed when not in use. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

Conditions for safe storage, including any incompatibilities

Storage precautions Store away from incompatible materials (see Section 10). Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Utilize retaining walls to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

Storage class Miscellaneous hazardous material storage.

Specific end uses(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.

8. Exposure controls/Personal protection

Control parameters

Occupational exposure limits

Distillates (petroleum), hydrotreated heavy naphthenic

Mineral oil, excluding metal working fluids (pure, highly and severely refined)
ACGIH

White mineral oil (petroleum)

Mineral oil, excluding metal working fluids (pure, highly and severely refined)
Long-term exposure limit (8-hour TWA): ACGIH 5 mg/m³ inhalable fraction

Copper

Power Hammer & Chisel Grease

Long-term exposure limit (8-hour TWA): ACGIH 0.2 mg/m³ fume as Cu

Long-term exposure limit (8-hour TWA): OSHA 1 mg/m³ dusts and mists as Cu

Long-term exposure limit (8-hour TWA): ACGIH 1 mg/m³ dusts and mists as Cu

Long-term exposure limit (8-hour TWA): OSHA 0.1 mg/m³ fume as Cu

Carbon graphite

Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m³ respirable fraction

Long-term exposure limit (8-hour TWA): OSHA 15 particles/cc respirable dust

Crystalline silica

Long-term exposure limit (8-hour TWA): OSHA 0.05 mg/m³ respirable dust

Long-term exposure limit (8-hour TWA): ACGIH 0.025 mg/m³ respirable fraction A2

ACGIH = American Conference of Governmental Industrial Hygienists.

OSHA = Occupational Safety and Health Administration.

A2 = Suspected Human Carcinogen.

Copper (CAS: 7440-50-8)

Immediate danger to life and health 100 mg/m³

Carbon graphite (CAS: 7782-42-5)

Immediate danger to life and health 1250 mg/m³

Crystalline silica (CAS: 14808-60-7)

Immediate danger to life and health 25 mg/m³ 50 mg/m³

Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimize worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimize exposure.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with OSHA 1910.133. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Power Hammer & Chisel Grease

Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
Other skin and body protection	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
Hygiene measures	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.
Environmental exposure controls	Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Solid.
Color	Grey.
Odor	Mild.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Initial boiling point and range	>288°C (>550.4°F)
Flash point	> 216°C/421°F Cleveland open cup.
Evaporation rate	< 0.01 (butyl acetate = 1)
Upper/lower flammability or explosive limits	Not available.
Vapor pressure	<0.0013 kPa @ 25°C
Vapor density	> 5
Relative density	0.93
Solubility(ies)	Insoluble in water.

Power Hammer & Chisel Grease

Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not applicable.
Oxidizing properties	Not available.
Other information	None.

10. Stability and reactivity

Reactivity	See the other subsections of this section for further details.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.
Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.
Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

ATE oral (mg/kg) 25,000.0

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitization

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

Skin sensitization Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Power Hammer & Chisel Grease

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

IARC carcinogenicity Contains a substance/a group of substances which may cause cancer. IARC Group 1
Carcinogenic to humans.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Not relevant. Solid.

General information The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation No specific symptoms known.

Ingestion May cause discomfort if swallowed. May cause stomach pain or vomiting.

Skin Contact Prolonged contact may cause dryness of the skin.

Eye contact No specific symptoms known.

Route of exposure Ingestion Inhalation Skin and/or eye contact

Target Organs No specific target organs known.

12. Ecological information

Toxicity Aquatic Chronic 3 - H412 Harmful to aquatic life with long lasting effects.

Persistence and degradability

Persistence and degradability The degradability of the product is not known.

Bioaccumulative potential

Bio-Accumulative Potential No data available on bioaccumulation.

Partition coefficient Not available.

Mobility in soil

Mobility No data available.

Other adverse effects

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

Power Hammer & Chisel Grease

General information	The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.
Disposal methods	Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information

DOT transport notes This product is not regulated for road transportation in accordance with 49 CFR Exceptions.

UN Number

UN No. (TDG)	3077
UN No. (IMDG)	3077
UN No. (ICAO)	3077
UN No. (DOT)	UN3077

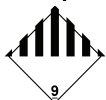
UN proper shipping name

Proper shipping name (TDG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS Copper , Zinc bis(dibutyldithiocarbamate))
Proper shipping name (IMDG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS Copper , Zinc bis(dibutyldithiocarbamate))
Proper shipping name (ICAO)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS Copper , Zinc bis(dibutyldithiocarbamate))
Proper shipping name (DOT)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS Copper , Zinc bis(dibutyldithiocarbamate))

Transport hazard class(es)

DOT hazard class	9
DOT hazard label	9
TDG class	9
TDG label(s)	9
IMDG Class	9
ICAO class/division	9

Transport labels



Power Hammer & Chisel Grease

DOT transport labels



Packing group

TDG Packing Group	III
IMDG packing group	III
ICAO packing group	III
DOT packing group	III

Environmental hazards

Environmentally Hazardous Substance



Special precautions for user

EmS	F-A, S-F
DOT reportable quantity	RQ: Copper (250000 lbs)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

The following ingredients are listed or exempt:

Copper

Final CERCLA RQ: 5000(2270) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed or exempt.

SARA 313 Emission Reporting

The following ingredients are listed or exempt:

Antimony dialkyldithiocarbamate

1.0 %

Zinc bis(dibutyldithiocarbamate)

1.0 %

Copper

1.0 %

CAA Accidental Release Prevention

None of the ingredients are listed or exempt.

Power Hammer & Chisel Grease

FDA - Essential Chemical

None of the ingredients are listed or exempt.

FDA - Precursor Chemical

None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories

None of the ingredients are listed or exempt.

OSHA Highly Hazardous Chemicals

None of the ingredients are listed or exempt.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-I)

The following ingredients are listed or exempt:

Copper

California Air Toxics "Hot Spots" (A-II)

None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances

The following ingredients are listed or exempt:

Copper

Carbon graphite

Massachusetts "Right To Know" List

The following ingredients are listed or exempt:

Copper

Molybdenum disulfide

Carbon graphite

Crystalline silica

Rhode Island "Right To Know" List

The following ingredients are listed or exempt:

Copper

Carbon graphite

Crystalline silica

Minnesota "Right To Know" List

The following ingredients are listed or exempt:

Copper

Carbon graphite

Crystalline silica

New Jersey "Right To Know" List

The following ingredients are listed or exempt:

Copper

Carbon graphite

Power Hammer & Chisel Grease

Crystalline silica

Pennsylvania "Right To Know" List

The following ingredients are listed or exempt:

Copper

Carbon graphite

Crystalline silica

Inventories

US - TSCA

All the ingredients are listed or exempt.

US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

16. Other information

Classification abbreviations and acronyms	Aquatic Chronic = Hazardous to the aquatic environment (chronic)
Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Revision comments	Rereleased through new GHS Software.
Revision date	5/7/2019
Revision	1
Supersedes date	8/23/2017
SDS No.	4993
Hazard statements in full	H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H350 May cause cancer. H372 Causes damage to organs through prolonged or repeated exposure. H400 Very toxic to aquatic life. H401 Toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.

End of SDS

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



130 W. GRAND LAKE BLVD. • WEST CHICAGO, IL. 60185
630-293-7727 Office • 630-293-7765 FAX

FOR CHEMICAL EMERGENCY, SPILL, LEAK, EXPOSURE, ACCIDENT, CALL CHEMTREC, 1-800-424-9300

Revised 7-23-18

SAFETY DATA SHEET

1. IDENTIFICATION

1.1. Product identifier

Product name *MM 3600D*

Other means of identification

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Anti-foaming agent (defoamer)
Uses advised against Consumer use

1.3. Emergency telephone number

Emergency telephone number CHEMTREC (24 hrs - for spill, leak or transportation incidents):
US: 1-800-424-9300

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

OSHA Regulatory Status

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

2.2. Label Elements

The product contains no substances which at their given concentration, are considered to be hazardous to health

2.3. Other hazards

Hazards not otherwise classified (HNOC) Not applicable

Unknown acute toxicity 36.87% of the mixture consists of ingredient(s) of unknown toxicity

Other Information May be harmful in contact with skin.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Chemical nature of the product Petroleum oil-based mixture

Component	CAS No	% [weight]
Aluminum, hydroxybis(octadecanoato-O)-	300-92-5	1 - 5
Petroleum distillates, hydrotreated middle	64742-46-7	1 - 5
Petroleum distillates, solvent dewaxed light paraffinic	64742-56-9	10 - 30
Petroleum distillates, solvent dewaxed heavy paraffinic	64742-65-0	30 - 60

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact Wash off immediately with soap and plenty of water.

Inhalation Move victim to fresh air.

Ingestion IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. Call a physician or poison control center immediately.

4.2. Most important symptoms and effects, both acute and delayed

Most important symptoms and effects No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray. Carbon dioxide (CO₂). Dry chemical. Alcohol resistant foam.

Unsuitable Extinguishing Media Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Hazardous Combustion Products Thermal decomposition can lead to release of irritating gases and vapors.

Explosion Data

Sensitivity to mechanical impact Not applicable.
Sensitivity to static discharge No.

5.3. Advice for firefighters

Advice for fire-fighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protection equipment. Avoid contact with skin, eyes or clothing.
Protective precautions Ensure adequate ventilation. Avoid exceeding of the given occupational exposure limits (see section 8).
Emergency procedures Evacuate personnel to safe areas. Remove all sources of ignition. Keep people away from and upwind of spill/leak.

6.2. Environmental precautions

Environmental Precautions Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for Containment Local authorities should be advised if significant spillages cannot be contained. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Methods for Clean-Up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labelled containers.

6.4. Reference to other sections

Reference to other sections See Sections 5 & 7 for additional information.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a cool, well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Aluminum,	TWA: 10 mg/m ³ (stearates)	TWA: 5 mg/m ³ Respirable	-

hydroxybis(octadecanoato-O)-300-92-5	TWA: 3 mg/m ³ Respirable fraction (PNOC) TWA: 10 mg/m ³ Inhalable fraction (PNOC)	fraction (PNOR) TWA: 15 mg/m ³ Total dust (PNOR)	
Petroleum distillates, hydrotreated middle 64742-46-7	TWA: 5 mg/m ³ , oil mist STEL: 10 mg/m ³	5 mg/m ³ , oil mist	-
Petroleum distillates, solvent dewaxed light paraffinic 64742-56-9	TWA: 5 mg/m ³ , oil mist STEL: 10 mg/m ³ , oil mist	5 mg/m ³ , oil mist	-
Petroleum distillates, solvent dewaxed heavy paraffinic 64742-65-0	TWA: 5 mg/m ³ , oil mist STEL: 10 mg/m ³	5 mg/m ³ , oil mist	-

8.2. Exposure controls

Engineering Controls Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Safety glasses with side-shields. If splashes are likely to occur, wear: Goggles.

Skin protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn. PVC. Neoprene. PVA.

Respiratory protection If exposure limits are likely to be exceeded or if irritation or other symptoms are experienced, NIOSH/MSHA or EN 136 approved respiratory protection should be worn.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Take off contaminated clothing and wash before reuse. Do not get in eyes, on skin, or on clothing. Slippery, can cause falls if walked on.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Liquid
Appearance Opaque Amber
Odor Slight
Odor threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks/ Method</u>
pH	No information available	No information available
Melting point/freezing point	No information available	No information available
Boiling point	No information available	No information available
Flash Point	> 149 °C / > 300 °F	No information available
Evaporation rate	No information available	No information available
Flammability (solid, gas)	No information available	No information available
Flammability Limit in Air		
Upper flammability limit	No information available	
Lower flammability limit	No information available	
Vapor Pressure	No information available	No information available
Vapor density	No information available	No information available
Specific Gravity	0.88	No information available
Water Solubility	Emulsifiable	No information available
Solubility in other solvents	No information available	No information available
Partition coefficient: n-octanol/water	No information available	No information available
Autoignition temperature	343 °C / 650 °F	No information available
Decomposition temperature	No information available.	No information available
Viscosity	1000 cps @25C	No information available

Explosive properties	No information available
Oxidizing properties	No information available

9.2. Other information

VOC content (%)	<5
------------------------	----

10. STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity	Stable under normal conditions.
-------------------	---------------------------------

10.2. Chemical stability

Chemical Stability	Stable under normal conditions.
---------------------------	---------------------------------

10.3. Possibility of hazardous reactions

Possibility of Hazardous Reactions None under normal processing.

Hazardous Polymerization	Hazardous polymerization does not occur.
---------------------------------	--

10.4. Conditions to avoid

Conditions to Avoid	Heat, flames and sparks.
----------------------------	--------------------------

10.5. Incompatible materials

Incompatible Materials	Strong oxidizing agents.
-------------------------------	--------------------------

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition can lead to release of irritating and toxic gases and vapors. Carbon oxides.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information	Information given is based on data on the components and the toxicology of similar products.
Eyes	Contact with eyes may cause irritation. Avoid contact with eyes.
Skin	May be harmful in contact with skin. Avoid contact with skin.
Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Ingestion	May be harmful if swallowed. Due to the viscosity, this product does not present an aspiration hazard.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	116,581.00 mg/kg
ATEmix (dermal)	4,622.00 mg/kg
ATEmix (inhalation-dust/mist)	82.96 mg/L

Component	Oral LD50	Dermal LD50	Inhalation LC50
Petroleum distillates, hydrotreated middle	= 7400 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 4.6 mg/L (Rat) 4 h
Petroleum distillates, solvent dewaxed heavy paraffinic	5000 mg/kg (Rat)	2000 mg/kg (Rabbit)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Mutagenic effects	No information available.
Reproductive Effects	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration Hazard	No information available.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity	Discharge into the environment must be avoided.
Unknown Aquatic Toxicity	18.29393% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Component	Algae	Fish	Daphnia magna
Petroleum distillates, hydrotreated middle	-	LL50 (96hr): >10000 mg/L (Fathead minnow)	EL0 (21 day): 5mg//L (Daphnia magna)
Petroleum distillates, solvent dewaxed light paraffinic	-	5000: 96 h Oncorhynchus mykiss mg/L LC50	1000: 48 h Daphnia magna mg/L EC50
Petroleum distillates, solvent dewaxed heavy paraffinic	-	5000: 96 h Oncorhynchus mykiss mg/L LC50	1000: 48 h Daphnia magna mg/L EC50

12.2. Persistence and degradability

Persistence and degradability . Not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation/Accumulation . Not likely to bioaccumulate.

12.4. Mobility in soil

Mobility in Environmental Media No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment . Not applicable.

12.6. Other adverse effects

Other adverse effects .

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Disposal Methods	Should not be released into the environment. Contain and dispose of waste according to local regulations. Can be incinerated, when in compliance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal. Do not burn, or use a cutting torch on, the empty drum.
US EPA Waste Number	Product, as sold, is not a US EPA RCRA Waste. Waste must be classified and labelled prior to recycling or disposal.

14. TRANSPORT INFORMATION

<u>DOT</u>	Not regulated
<u>ICAO/IATA</u>	Not regulated
<u>IMDG/IMO</u>	Not regulated

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

US TSCA	Complies
Australia (AICS)	Complies
Canada (DSL)	Complies
China (IECSC)	Complies
Europe (EINECS/ELINCS/NLP)	Complies
Japan (METI)	Complies
South Korea (KECL)	Complies
Philippines (PICCS)	Complies
New Zealand	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (40 CFR 61)

This product does not contain any HAPs.

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects, at levels which would require a warning under the statute.

U.S. State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Petroleum distillates, solvent dewaxed light paraffinic	X				

International Regulations

Mexico

Mexico - Grade Slight risk, Grade 1

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

Non-controlled

Canada Disclosure Lists

Components not listed are non-hazardous.

Component	% [weight]	Ingredient Disclosure List (IDL)	National Pollutant Release Inventory (NPRI)	Hazardous Materials Information Review Commission (Registration number)
Petroleum distillates, hydrotreated middle	1 - 5	1%	-	-

Petroleum distillates, solvent dewaxed heavy paraffinic	30 - 60	1%	-	-
---	---------	----	---	---

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

	NFPA		HMIS III	
Health		1	Health	1
Flammability		1	Flammability	1
Instability		0	Physical Hazard	0

Issue Date: 2009-01-16
Revision Date: 2015-05-14
Reason for revision Update to Format, SDS sections updated, 15, 2.

For industrial use only. Refer to the safety data sheet and/or instructions for use.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet



130 W. GRAND LAKE BLVD. • WEST CHICAGO, IL. 60185
630-293-7727 • 630-293-7765 FAX
revised 8-9-17

MATERIAL SAFETY DATA SHEET

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, EXPOSURE,
ACCIDENT, CALL CHEMTREC, 1-800-424-9300**
SAFETY DATA SHEET

SECTION 1. PRODUCT IDENTIFICATION

PRODUCT NAME: MM-6800 SOLN
ANIONIC WATER-SOLUBLE POLYMER - NOT CONSIDERED HAZARDOUS
UNDER FEDERAL REGULATION 29 CFR 1910-1200

SECTION 2. HAZARDS IDENTIFICATION

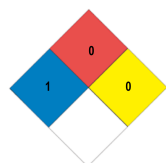
SIGNAL WORD: CAUTION



EMERGENCY OVERVIEW:
AQUEOUS SOLUTIONS OR POWDERS THAT BECOME WET RENDER
SURFACES EXTREMELY SLIPPERY.

Appearance & Odor:
Form: Granular Solid
Color: White
Odor: None

<u>HMS AND NFPA RATINGS</u>	<u>HMS</u>	<u>NFPA</u>
HEALTH	1	1
FLAMMABILITY	0	0
REACTIVITY	0	0
PERSONAL PROTECTION / SPECIAL B		



SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Identifications: Anionic Water Soluble Polymer
Regulated Components: None

SECTION 4. FIRST AID MEASURES

INHALATION: No Hazards which require special first aid measures
SKIN CONTACT: WASH WITH WATER AND SOAP AS A PRECAUTION.
IN CASE OF SKIN IRRITATION, CONSULT A PHYSICIAN.
EYE CONTACT: RINSE THOROUGHLY WITH PLENTY OF
WATER, ALSO UNDER THE EYE LIDS. IN CASE OF PERSISTENT EYE
IRRITATION, CONSULT A PHYSICIAN.
INGESTION: THIS PRODUCT IS NOT CONSIDERED TOXIC BASED ON
STUDIES ON LAB ANIMALS.

SECTION 5. FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: WATER, WATER
SPRAY, FOAM, CARBON DIOXIDE (CO₂), DRY POWDER
SPECIAL FIRE FIGHTING PRECAUTIONS: AQUEOUS SOLUTIONS OR
POWDERS THAT BECOME WET, RENDER SURFACES EXTREMELY
SLIPPERY.
PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: NO SPECIAL
PROTECTIVE EQUIPMENT IS REQUIRED.
FLASH POINT: N/A
Autoignition Temperature: (°C) N/A

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: NO SPECIAL PRECAUTIONS
REQUIRED.

ENVIRONMENTAL PRECAUTIONS: DO NOT
CONTAMINATE WATER.

METHODS FOR CLEAN UP:
DO NOT FLUSH WITH WATER. CLEAN UP PROMPTLY BY SCOOP OR
VACUUM. KEEP IN SUITABLE AND CLOSED CONTAINERS
FOR DISPOSAL. AFTER CLEAN UP, FLUSH TRACES WITH WATER.

SECTION 7. HANDLING AND STORAGE

HANDLING: AVOID CONTACT WITH SKIN AND EYES. AVOID
DUST FORMATION. DO NOT
BREATH DUST. WASH HANDS BEFORE BREAKS AND AT THE END OF
THE DAY.
STORAGE: KEEP IN A DRY COOL PLACE (0-35°C)

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: USE LOCAL EXHAUST IN DUSTING
OCCURS. NATURAL VENTILATION IS ADEQUATE IN ABSENCE OF
DUSTS.

PERSONAL PROTECTION EQUIPMENT:

- **RESPIRATORY PROTECTION:** DUST SAFETY MASKS ARE
RECOMMENDED WHERE CONCENTRATION OF
TOTAL DUST IS MORE THAN 10 MG/M³
- **HAND PROTECTION:** RUBBER GLOVES
- **EYE PROTECTION:** SAFETY GLASSES WITH SIDE SHIELDS. DO
NOT WEAR CONTACT LENSES
- **SKIN AND BODY PROTECTION:** CHEMICAL RESISTANT APRON OR
PROTECTIVE SUIT IF SPLASHING OR REPEATED CONTACT WITH
SOLUTION IS LIKELY.
HYGIENE MEASURES: WASH HANDS BEFORE BREAKS
AND AT THE END OF THE WORK DAY. HANDLE IN ACCORDANCE
WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICE.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

FORM: GRANULAR SOLID
COLOR: WHITE
ODOR: NONE
pH: 4 - 9 @ 5 g/l for product series.
MELTING POINT(OC): N/A
FLASH POINT (OC): N/A
AUTO IGNITION TEMP(OC): N/A
VAPOR PRESSURE (MM HG)N/A
BULK DENSITY: SEE TECHNICAL BULLETIN
WATER SOLUBILITY: SEE TECHNICAL BULLETIN
VISCOSITY (MPA S) SEE TECHNICAL BULLETIN

SECTION 10. STABILITY AND REACTIVITY

STABILITY: PRODUCT IS STABLE. NO HAZARDOUS
POLYMERIZATION WILL OCCUR.
MATERIALS TO AVOID: OXIDIZING AGENTS MAY CAUSE
EXOTHERMIC REACTIONS.
HAZARDOUS DECOMPOSITION
PRODUCTS: THERMAL DECOMPOSITION MAY PRODUCE
NITROGEN OXIDES (NO_x) CARBON OXIDES.

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
- **ORAL:** LD50/ ORAL/ RAT= 500 MG/ KG
- **DERMAL:** THE RESULTS OF TESTING ON RABBITS SHOWED THIS
MATERIAL TO BE
NON TOXIC EVEN AT HIGH DOSE LEVELS.
- **INHALATION:** THE PRODUCT IS NOT EXPECTED TO BE
TOXIC BY INHALATION.
IRRITATION
- **SKIN:**
- THE RESULTS OF TESTING ON RABBITS SHOWED THIS
MATERIAL TO BE NON IRRITATING TO THE SKIN.
- **EYES:** TESTING CONDUCTED ACCORDING TO THE DRAIZE
TECHNIQUE SHOWED
THIS MATERIAL TO PRODUCE NO CORNEAL OR IRIDIAL EFFECTS AND
ONLY SLIGHT TRANSITORY CONJUNCTIVAE EFFECTS, SIMILAR TO
THOSE
WHICH ALL GRANULAR MATERIALS HAVE NO CONJUNCTIVAE.
SENSITIZATION: THE RESULTS OF TESTING ON GUINEA
PIGS SHOWED THIS MATERIAL TO BE NON SENSITIZING.
CHRONIC TOXICITY: A 2 YEAR FEEDING STUDY ON RATS DID NOT
REVEAL ADVERSE

HEALTH EFFECTS. A ONE YEAR FEEDING STUDY ON DOGS DID NOT REVEAL ADVERSE HEALTH EFFECTS.

SECTION 12. ECOLOGICAL INFORMATION

-FLASH LC50/FAT HEAD MINNOWS/ 96 HOURS > 1000 MG/L
-ALGAE EC50/ SELENASTRUM CAPRICORNUTUM/ 96 HOURS > 500 MG/L
BIOACCUMULATION: THE PRODUCT IS NOT EXPECTED TO BIOACCUMULATE.
PERSISTENCE/ DEGRADABILITY: NOT READILY BIODEGRADABLE.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE FROM RESIDUES/UNUSED: IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

CONTAMINATED PACKAGING: RINSE EMPTY CONTAINERS WITH WATER AND USE THE RINSE WATER TO PREPARE THE WORKING SOLUTION. CAN BE LAND FILLED OR INCINERATED WHEN IN COMPLIANCE WITH LOCAL REGULATIONS

SECTION 14. TRANSPORT INFORMATION

NOT REGULATED BY D.O.T.
IMDG/IMO: Not classified as dangerous in the meaning of IMDG/IMO Regulations
ICAO/IATA: Not classified as dangerous in the meaning of ICAO/IATA regulations

SECTION 15. REGULATORY INFORMATION

RCRA STATUS: NOT A HAZARDOUS WASTE
HAZARDOUS WASTE #: N/A
REPORTABLE QTY (40 CFR 302): N/A
THRESHOLD PLANNING QTY (40 CFR 335) N/A

SARA (section 311/312) hazard Class: Not Concerned.

CALIFORNIA PROPOSITION 665 INFORMATION: THE FOLLOWING IS MADE IN ORDER TO COMPLY WITH THE CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986. THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER: ACRYLAMIDE

International Inventories:

USA(TSCA) All components of this product are either listed on the inventory or are exempt from listing.
CANADA (DSL): All components of this product are either listed on the inventory or are exempt from listing
EUROPEAN UNION (REACH): All components of this product are registered or pre-registered with the European Chemicals Agency or are either listed on the inventory or are exempt from listing
AUSTRALIA(AICS): All components of this product are either listed on the inventory or are exempt from listing
JAPAN(ENCS): All components of this product are either listed on the inventory or are exempt from listing
KOREA(ECL): All components of this product are either listed on the inventory or are exempt from listing
PHILLIPINES)PICCS): All components of this product are either listed on the inventory or are exempt from listing

SECTION 16. OTHER INFORMATION

THE INFORMATION PROVIDED IN THIS SAFETY DATA SHEET IS CORRECT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF AT THE DATE OF ITS PUBLICATION. THE INFORMATION GIVEN IS DESIGNED ONLY AS A GUIDANCE FOR SAFE HANDLING, USE, PROCESSING, STORAGE, TRANSPORTATION, DISPOSAL AND RELEASE, AND IS NOT TO BE CONSIDERED A WARRANTY OR QUALITY SPECIFICATION. THE INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS UNLESS SPECIFIED IN THE TEXT.

ISO 9001:2008 CERTIFIED



130 W. GRAND LAKE BLVD • WEST CHICAGO, IL.
60185 630-293-7727 Office • 630-293-7765 FAX

**FOR CHEMICAL EMERGENCY, SPILL, LEAK,
EXPOSURE, OR ACCIDENT, CALL CHEMTREC,
1-800-424-9300**

REVISED 7-7-16

SAFETY DATA SHEET

SECTION 1. PRODUCT IDENTIFICATION

PRODUCT NAME: **MM-PAL 400**

PROPER SHIPPING NAME: NONE
D.O.T. HAZARD NAME: NON
D.O.T. ID#: NONE
D.O.T. HAZARD CLASS: NONE
RCRA HAZARD CLASS: NONE
E.P.A. PRIORITY CLASS: NONE
NFPA = NATIONAL FIRE PROTECTION ASSN.-704
HEALTH (NFPA)=0 FLAMMABILITY (NFPA)=1
REACTIVITY (NFPA) = 0
CAS NO: PROPRIETARY BLEND
GENERIC DESCRIPTION ; FORMULATED SILICONE
EMULSION ANTIFOAM

COMPOSITION		
MATERIAL	%	
DIMETHYLPOLYSILOXANE	9-11	
CAS NUMBER:	61348-62-0	
LD ₅₀ #	N/A	
LC ₅₀	N/A	
EMULSIFIERS	3-10	NA
WATER	80-90	
	7732-18-5	

SECTION 2. HAZARD INGREDIENTS

AS DEFINED IN 29 CFR 1910-1200

SIGNAL WORD: WARNING



NON HAZARDOUS MATERIAL: PER 29CFR 1910-1200

NOT LISTED AS A HAZARDOUS MATERIAL AS DEFINED
IN THE OSHA STANDARD.

IF LARGE QUANTITY IS SWALLOWED CONTACT A
PHYSICIAN. SPILLS CAN CAUSE SLIPPING HAZARD.

ADDITIONAL SARA REGULATORY COMPLIANCE
INFORMATION

SECTION 312 HAZARD CLASS: NONE

SECTION 313 NOTIFICATION: NOT APPLICABLE -EITHER
NONE PRESENT OR NONE IN REGULATED QUANTITIES

POTENTIAL HEALTH EFFECTS

SKIN CONTACT: NO SIGNIFICANT ADVERSE HEALTH
EFFECTS ARE EXPECTED FROM EXPOSURE.
INHALATION: NO SIGNIFICANT ADVERSE HEALTH
EFFECTS ARE EXPECTED FROM EXPOSURE.
INGESTION: SMALL AMOUNTS TRANSFERRED TO THE
MOUTH BY THE FINGERS DURING USE, ETC., SHOULD
NOT INJURE.

CONDITIONS AGGRAVATED BY EXPOSURE: NONE
KNOWN

CARCINOGENIC POTENTIAL: THIS PRODUCT CONTAINS
NO COMPONENT >0.1% WHICH IS CONSIDERED
CARCINOGENIC BY OSHA, IARC OR NTP.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

PAL 400 – PROPRIETARY INFORMATION

SECTION 4. FIRST AID MEASURES

EYES: CHECK FOR AND REMOVE CONTACT LENSES.
FLUSH EYES WITH COOL, CLEAN WATER WHILE
OCCASIONALLY LIFTING AND LOWERING THE EYELIDS.
SEEK MEDICAL ATTENTION IF EXCESSIVE TEARING,
REDNESS OR PAIN PERSISTS.

SKIN: NO FIRST AID SHOULD BE NEEDED

INHALATION: NO FIRST AID SHOULD BE NEEDED

ORAL: NO FIRST AID SHOULD BE NEEDED

SECTION 5. FIRE AND EXPLOSION DATA

NFPA FLAMMABILITY CLASSIFICATION : NA

FLASH POINT: N/A

AUTO IGNITION: NOT DETERMINED

FLAMMABILITY LIMITS IN AIR: LOWER: N/A
UPPER: N/A

EXTINGUISHING MEDIA: ALL STANDARD
FIREFIGHTING TECHNIQUES SUITABLE FOR LIQUIDS
MAY BE USED.

PROTECTION OF FIREFIGHTERS: NIOSH APPROVED
POSITIVE PRESSURE SELF-CONTAINED BREATHING
APPARATUS AND FULL BUNKER GEAR.

UNUSUAL FIRE & EXPLOSION HAZARDS: NONE

COMMENTS: NONE

SECTION 6 ACCIDENTAL RELEASE MEASURES

CONTAIN SPILLS AND PICK UP WITH ABSORBENT AND
DISPOSE OF IN LANDFILL. WASH DOWN AFFECTED
SURFACES TO AVOID SLIPPING HAZARD.

SECTION 7. HANDLING AND STORAGE

KEEP CONTAINERS CLOSED WHEN NOT IN USE. KEEP
FROM FREEZING. AVOID STORAGE TEMPERATURES
ABOVE 110 F.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION



PROTECTIVE EQUIPMENT

EYES: SAFETY GLASSES WITH SIDE SHIELD

BODY PROTECTION: NOT REQUIRED
HAND PROTECTION : NOT REQUIRED

INHALATION: NO RESPIRATORY PROTECTIONS SHOULD BE REQUIRED

MECHANICAL (GENERAL) RECOMMENDED

VENTILATION - LOCAL EXHAUST: NONE SHOULD BE REQUIRED.

SUITABLE RESPIRATORY: NONE SHOULD BE NEEDED UNDER NORMAL OPERATING CONDITIONS
GENERAL COMMENTS: WASH HANDS WITH SOAP AND WATER BEFORE EATING

THE ABOVE PRECAUTIONS ARE FOR ROOM TEMPERATURE HANDLING, USE AT ELEVATED TEMPERATURES OR AEROSOL/SPRAY APPLICATIONS, MAY REQUIRE ADDED PRECAUTIONS

ACGIH(USA): NA
OSHA(USA) NA

SECTION 9. PHYSICAL & CHEMICAL PROPERTIES

BOILING POINT :	100 C (212F)
SPECIFIC GRAVITY (AT 25C) ;	0.90-1.0
VAPOR PRESSURE: (mmHg.):	N/A
VAPOR DENSITY (AIR=1 @ 25C)	N/A

EVAPORATION RATE (BUTYL ACETATE =1): ND
SOLUBILITY IN WATER (%): EMULSIFIES

COLOR, APPEARANCE & ODOR:

OPAQUE WHITE LIQUID, MILD ODOR

SECTION 10 STABILITY & REACTIVITY

STABILITY: STABLE
HAZARDOUS DECOMPOSITION PRODUCTS:
FORMALDEHYDE, SILICON DIOXIDE
HAZARDOUS POLYMERIZATION:
NOT EXPECTED TO OCCUR

MATERIALS INCOMPATIBILITY: STRONG OXIDIZERS

CONDITIONS TO AVOID: KEEP AWAY FROM HEAT, SPARKS, OPEN FLAME AND STRONG OXIDIZING CONDITIONS

SECTION 11 TOXICOLOGICAL INFORMATION

NO KNOWN APPLICABLE INFORMATION.

SECTION 12 ECOLOGICAL INFORMATION

ANALYSIS OF ECOLOGICAL IMPACT HAS NOT BEEN DONE ON THIS PRODUCT.

SECTION 13 DISPOSAL CONSIDERATIONS

HAZARD CHARACTERISTICS AND REGULATORY WASTE STREAM CLASSIFICATION CAN CHANGE WITH PRODUCT USE. ACCORDINGLY, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE PROPER STORAGE, TRANSPORTATION, TREATMENT AND/OFF DISPOSAL METHODOLOGIES FOR SPENT MATERIALS AND RESIDUES AT THE TIME OF DISPOSITION. CONDITIONS OF USE MAY CAUSE THIS MATERIAL TO BECOME A "HAZARDOUS WASTE" AS DEFINED BY FEDERAL AND STATE REGULATIONS. IT IS THE USER'S RESPONSIBILITY TO DETERMINE IF THE MATERIAL IS A RCRA "HAZARDOUS WASTE" AT THE TIME OF DISPOSAL. TRANSPORTATION, TREATMENT, STORAGE AND LOCAL REGULATIONS MAY BE MORE RESTRICTIVE. CONTACT THE RCRA/SUPERFUND

HOTLINE AT (800) 424-9346 OR YOUR REGIONAL EPA OFFICE FOR GUIDANCE CONCERNING SPECIFIC DISPOSAL ISSUES.

SECTION 14 TRANSPORTATION INFORMATION

DOT STATUS: NOT REGULATED
PACKING GROUPS: NOT APPLICABLE
PROPER SHIPPING NAME: NOT REGULATED
UNNA ID: NOT APPLICABLE
HAZARD CLASS: NOT REGULATED
EMERGENCY RESPONSE GUIDE NO. N/A
REPORTABLE QUANTITY NOT ESTABLISHED
HAZMAT STTC NO.: NOT ASSIGNED
PRACARDS(USA) NONE REQUIRED
MARPOL III: NOT A DOT "MARINE POLLUTANT" PER 49CFR 171.8

SECTION 15 REGULATORY INFORMATION

TSCA INVENTORY: ALL COMPONENTS ARE LISTED ON THE TSCA INVENTORY CERCLA: NO COMPONENT IDENTIFIED
SARA 302/304 : NO COMPONENT IDENTIFIED
CWA: NO COMPONENT IDENTIFIED
SARA 311/312 : NO HAZARD IDENTIFIED
CALIFORNIA PROPOSITION 65: NO COMPONENT IDENTIFIED
SARA 313: NO COMPONENT IDENTIFIED
NEW JERSEY RIGHT TO KNOW N: NA

SECTION 16. OTHER INFORMATION

DISCLAIMER OF LIABILITY

THE INFORMATION IN THIS MSDS WAS OBTAINED FROM SOURCES, WHICH WE BELIEVE TO BE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THE MSDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS MSDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR THE PRODUCT FOR THEIR PARTICULAR PURPOSE. THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USES AND DISPOSAL ARE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT.



PENRAY AIR BRAKE ANTIFREEZE

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 03/20/2014

Revision date: 03/20/2014

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Substance name : PENRAY AIR BRAKE ANTIFREEZE
Product code : 5632

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Air Brake Antifreeze

1.3. Details of the supplier of the safety data sheet

The Penray Companies, Inc.
440 Denniston Ct.
60090 Wheeling, IL
T (800) 373-6729
rotto@penray.com

1.4. Emergency telephone number

Emergency number : (800) 373-6729
CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable Liquid 2
Acute toxicity 3 (Oral)
Acute toxicity 3 (Dermal)
Acute toxicity 3 (Inhalation)
Eye irritation 2B
Specific target organ toxicity - Single exposure 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : Highly flammable liquid and vapor. Toxic if swallowed, in contact with skin or if inhaled. Causes eye irritation. Causes damage to eyes.

Precautionary statements (GHS-US) : Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Keep container tightly closed. Ground/Bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapors/spray. If exposed: Call a poison center/doctor. If swallowed: Immediately call a poison center/doctor. Rinse mouth. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a poison center/doctor if you feel unwell. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No additional information available

PENRAY AIR BRAKE ANTIFREEZE

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 3: Composition/information on ingredients

3.1. Substance

Name	Product identifier	%	GHS-US classification
Methanol	(CAS No) 67-56-1	100	Flam. Liq. 2 Acute Tox. 3 (Oral, Dermal, Inhalation) Eye Irrit. 2B STOT SE 1

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical advice/attention.
First-aid measures after skin contact	: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if irritation persists.
First-aid measures after eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.
First-aid measures after ingestion	: If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Rinse mouth. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: Toxic if inhaled. May cause respiratory tract irritation. Vapors may cause narcosis with headache, difficulty breathing, lightheadedness, drowsiness, unconsciousness and possibly death.
Symptoms/injuries after skin contact	: Toxic in contact with skin. May cause skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Other symptoms are similar to those experienced through inhalation and ingestion.
Symptoms/injuries after eye contact	: Causes eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/injuries after ingestion	: Toxic if swallowed. May be fatal or cause blindness if swallowed. May cause stomach distress, nausea or vomiting. Ingestion may cause headache, dizziness, drowsiness, metabolic acidosis, coma, seizures.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Powder, water spray, foam, carbon dioxide.
Unsuitable extinguishing media	: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Products of combustion may include, and are not limited to: oxides of carbon, formaldehyde.
-------------	---

5.3. Advice for firefighters

Firefighting instructions	: Cool closed containers exposed to fire with water. Burns with a colorless invisible flame. In case of fire and/or explosion do not breathe fumes.
Protection during firefighting	: Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Vapors may be heavier than air and may travel along the ground to a distant ignition source and flash back.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition.
------------------	---

6.2. Methods and material for containment and cleaning up

For containment	: Dike and contain spill. Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
Methods for cleaning up	: Scoop up material and place in a disposal container. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

PENRAY AIR BRAKE ANTIFREEZE

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Do not get in eyes, on skin, or on clothing. Do not breathe gas, fumes, vapor or spray. Do not swallow. Handle and open container with care. Use only non-sparking tools. When using do not eat, drink or smoke. Use only outdoors or in a well-ventilated area.
- Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment.
- Storage conditions : Keep out of the reach of children. Keep container tightly closed. Keep cool. Store in a well-ventilated place.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Methyl alcohol (67-56-1)		
USA ACGIH	ACGIH TWA (ppm)	200 ppm
USA ACGIH	ACGIH STEL (ppm)	250 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	260 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm

8.2. Exposure controls

- Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
- Hand protection : Neoprene or nitrile rubber gloves.
- Eye protection : Wear approved eye (properly fitted dust- or splash-proof chemical safety goggles) / face (face shield) protection.
- Skin and body protection : Wear suitable protective clothing.
- Respiratory protection : A NIOSH approved respirator is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Environmental exposure controls : Maintain levels below Community environmental protection thresholds.
- Other information : Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Clear.
- Color : Colorless.
- Odor : Characteristic.
- Odor threshold : 100 ppm
- pH : No data available.
- Relative evaporation rate (butylacetate=1) : > 1
- Melting point : No data available.
- Freezing point : ~ -97.8 °C (~ -144.0 °F)
- Boiling point : 64 - 65 °C (147 - 149 °F) @ 101.32 kPa
- Flash point : 11 - 12 °C (52 - 54 °F)
- Critical temperature : ~ 240 °C (~ 464.0 °F)
- Self ignition temperature : 385 - 464 °C (725 - 867 °F)
- Decomposition temperature : No data available.
- Flammability (solid, gas) : Flammable
- Vapor pressure : 12.3 - 12.8 kPa @ 20 °C (68 °F)
- Relative vapor density at 20 °C : ~ 1.11
- Relative density : ~ 0.79
- Solubility : Soluble.
- Log Pow : No data available.

PENRAY AIR BRAKE ANTIFREEZE

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Log Kow	: No data available.
Viscosity, kinematic	: No data available.
Viscosity, dynamic	: No data available.
Explosive properties	: No data available.
Oxidising properties	: No data available.
Explosive limits	: 6 - 36 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Heat. Incompatible materials.

10.5. Incompatible materials

Strong oxidizing agents. Acids. Bases. Metals.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon, formaldehyde.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Toxic if swallowed, in contact with skin or if inhaled.

5632	
LD50 oral rat	>50 but ≤300 mg/kg (Calculated using ATE values)
LD50 dermal rabbit	>200 but ≤1000 mg/kg (Calculated using ATE values)
LC50 inhalation rat (mg/l)	>2.0 but ≤10.0 mg/l/4h (Calculated using ATE values)

Methyl alcohol (67-56-1)	
LD50 oral rat	5628 mg/kg
LD50 dermal rabbit	15800 mg/kg
LC50 inhalation rat (mg/l)	83.2 mg/l/4h

Skin corrosion/irritation	: Based on available data, the classification criteria are not met.
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitisation	: Based on available data, the classification criteria are not met.
Germ cell mutagenicity	: Based on available data, the classification criteria are not met.
Carcinogenicity	: Based on available data, the classification criteria are not met.
Reproductive toxicity	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	: Causes damage to eyes. Inhalation, ingestion or skin absorption of methanol can cause significant disturbances in vision, including blindness.
Specific target organ toxicity (repeated exposure)	: Based on available data, the classification criteria are not met.
Aspiration hazard	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: Toxic if inhaled. May cause respiratory tract irritation. Vapors may cause narcosis with headache, difficulty breathing, lightheadedness, drowsiness, unconsciousness and possibly death.
Symptoms/injuries after skin contact	: Toxic in contact with skin. May cause skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Other symptoms are similar to those experienced through inhalation and ingestion.
Symptoms/injuries after eye contact	: Causes eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/injuries after ingestion	: Toxic if swallowed. May be fatal or cause blindness if swallowed. May cause stomach distress, nausea or vomiting. Ingestion may cause headache, dizziness, drowsiness, metabolic acidosis, coma, seizures.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

PENRAY AIR BRAKE ANTIFREEZE

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

12.2. Persistence and degradability

5632

Persistence and degradability : Product is biodegradable.

12.3. Bioaccumulative potential

5632

Bioaccumulative potential : Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

Additional information : Handle empty containers with care because residual vapors are flammable.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

UN-No. : 1230

14.2. UN proper shipping name

Proper Shipping Name : Methanol

Department of Transportation Hazard Classes : 3 (6.1)

Hazard labels :



Packing group : II

14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

Methyl alcohol (67-56-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting : 1.0 %

15.2. US State regulations

5632()

State or local regulations : This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

IARC	International Agency for Research on Cancer.
	1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans.
NTP	National Toxicology Program.
	1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration.

PENRAY AIR BRAKE ANTIFREEZE

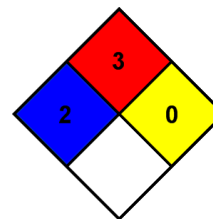
Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 16: Other information

Indication of changes : None.
Date of issue : 03/20/2014
Other information : None.

NFPA health hazard : 2
NFPA fire hazard : 3
NFPA reactivity : 0



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : PENRAY NON-CHLORINATED BRAKE CLEANER
Product code : 4620

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Brake and Parts Cleaner

1.3. Details of the supplier of the safety data sheet

The Penray Companies, Inc.
440 Denniston Ct.
60090 Wheeling
T (800) 373-6729
rotto@penray.com

1.4. Emergency telephone number

Emergency number : (800) 373-6729
CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable Aerosol 1
Gases Under Pressure - Compressed Gas
Skin irritation 2
Eye irritation 2A
Reproductive toxicity 2
Specific target organ toxicity - Single exposure 3
Specific target organ toxicity - Repeated exposure 2
Aspiration hazard 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Causes skin irritation. Causes serious eye irritation. Suspected of damaging fertility or the unborn child. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure. May be fatal if swallowed and enters airways.

Precautionary statements (GHS-US) :

Keep away from heat/sparks/open flames/hot surfaces. -No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Wash hands thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapors/spray. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If exposed or concerned: Get medical advice/attention. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

22 % of the mixture consists of ingredient(s) of unknown acute toxicity.

PENRAY NON-CHLORINATED BRAKE CLEANER

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Acetone	(CAS No) 67-64-1	30 - 60	Flam. Liq. 2 Eye Irrit. 2A STOT SE 3
Heptane, branched, cyclic and linear	(CAS No) 426260-76-6	15 - 40	Flam. Liq. 2 Skin Irrit. 2 STOT SE 3 Asp. Tox. 1
n-Heptane	(CAS No) 142-82-5	10 - 30	Flam. Liq. 2 Skin Irrit. 2 STOT SE 3
Xylenes (o-, m-, p- isomers)	(CAS No) 1330-20-7	7 - 13	Flam. Liq. 3 Acute Tox. 4 (Dermal, Inhalation) Skin Irrit. 2
Carbon dioxide	(CAS No) 124-38-9	3 - 7	Compressed gas
Toluene	(CAS No) 108-88-3	1 - 5	Flam. Liq. 2 Acute Tox. 4 (Oral) Skin Irrit. 2 Repr. 2 STOT SE 3 STOT RE 2 Asp. Tox. 1

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Vapours may cause drowsiness and dizziness.
- Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
- Symptoms/injuries after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Treat for surrounding material.
- Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Extremely flammable aerosol. Products of combustion may include, and are not limited to: oxides of carbon.
- Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

5.3. Advice for firefighters

- Firefighting instructions : Cool closed containers exposed to fire with water.
- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Vapours may be heavier than air and may travel along the ground to a distant ignition source and flash back.

PENRAY NON-CHLORINATED BRAKE CLEANER

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

For containment : Eliminate sources of ignition. Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from sources of ignition. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid contact with skin and eyes. Do not swallow. Do not breathe gas, fumes, vapour or spray. When using do not eat, drink or smoke. Use only outdoors or in a well-ventilated area.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep locked up and out of reach of children. Do not expose to temperatures exceeding 50°C/ 122°F. Store away from direct sunlight or other heat sources.

Storage area : Store in a well-ventilated place.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Acetone (67-64-1)		
USA ACGIH	ACGIH TWA (ppm)	500 ppm
USA ACGIH	ACGIH STEL (ppm)	750 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2400 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

n-Heptane (142-82-5)		
USA ACGIH	ACGIH TWA (ppm)	400 ppm
USA ACGIH	ACGIH STEL (ppm)	500 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2000 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	500 ppm

Xylenes (o-, m-, p- isomers) (1330-20-7)		
USA ACGIH	ACGIH TWA (ppm)	100 ppm
USA ACGIH	ACGIH STEL (ppm)	150 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	435 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	100 ppm

Carbon dioxide (124-38-9)		
USA ACGIH	ACGIH TWA (ppm)	5000 ppm
USA ACGIH	ACGIH STEL (ppm)	30000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	9000 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	5000 ppm

Toluene (108-88-3)		
USA ACGIH	ACGIH TWA (ppm)	20 ppm
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm
USA OSHA	OSHA PEL (STEL) (ppm)	150 ppm

PENRAY NON-CHLORINATED BRAKE CLEANER

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Toluene (108-88-3)		
USA OSHA	OSHA PEL (Ceiling) (ppm)	300 ppm

8.2. Exposure controls

Appropriate engineering controls	: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Chemical-resistant gloves.
Eye protection	: Safety glasses or goggles are recommended when using product.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: A NIOSH approved respirator is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Environmental exposure controls	: Maintain levels below Community environmental protection thresholds.
Other information	: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas/Pressurized Liquid.
Appearance	: Clear.
Colour	: Colourless.
Odour	: Solvent.
Odour threshold	: No data available.
pH	: No data available.
Relative evaporation rate (butylacetate=1)	: No data available.
Melting point	: No data available.
Freezing point	: No data available.
Boiling point	: No data available.
Flash point	: No data available.
Self ignition temperature	: No data available.
Decomposition temperature	: No data available.
Flammability (solid, gas)	: Extremely flammable aerosol.
Vapour pressure	: No data available.
Relative vapour density at 20 °C	: No data available.
Relative density	: No data available.
Solubility	: No data available.
Log Pow	: No data available.
Log Kow	: No data available.
Viscosity, kinematic	: No data available.
Viscosity, dynamic	: No data available.
Explosive properties	: No data available.
Oxidising properties	: No data available.
Explosive limits	: No data available.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions. Extremely flammable aerosol. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Heat. Incompatible materials. Sources of ignition.

10.5. Incompatible materials

Strong oxidizing agents.

PENRAY NON-CHLORINATED BRAKE CLEANER

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Based on available data, the classification criteria are not met.

4620	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5 mg/l/4h

Acetone (67-64-1)	
LD50 oral rat	5800 mg/kg
LC50 inhalation rat (mg/l)	50100 mg/m ³ /8h

n-Heptane (142-82-5)	
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (mg/l)	103 g/m ³ /4h

Xylenes (o-, m-, p- isomers) (1330-20-7)	
LD50 oral rat	4300 mg/kg
LD50 dermal rabbit	> 1700 mg/kg
ATE (dust,mist)	1.5 mg/l/4h

Toluene (108-88-3)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	12124 mg/kg
LD50 dermal rabbit	8390 mg/kg
LC50 inhalation rat (mg/l)	28.1 mg/l/4h

: Causes skin irritation.

Skin corrosion/irritation

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : Based on available data, the classification criteria are not met.

Germ cell mutagenicity : Based on available data, the classification criteria are not met.

Carcinogenicity : Based on available data, the classification criteria are not met.

Xylenes (o-, m-, p- isomers) (1330-20-7)	
IARC group	3

Toluene (108-88-3)	
IARC group	3

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

Specific target organ toxicity (single exposure) : May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure) : May cause damage to organs through prolonged or repeated exposure

Aspiration hazard : May be fatal if swallowed and enters airways

Symptoms/injuries after inhalation : Vapours may cause drowsiness and dizziness.

Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.

Symptoms/injuries after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

4620	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

4620	
Bioaccumulative potential	Not established.

PENRAY NON-CHLORINATED BRAKE CLEANER

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

Additional information : Flammable vapours may accumulate in the container. Do not incinerate closed containers.

SECTION 14: Transport information

In accordance with DOT:

14.1. UN number

UN-No. UN1950

14.2. UN proper shipping name

Proper Shipping Name : Aerosols, flammable, (each not exceeding 1 L capacity)

Hazard Classes 2.1

Hazard labels :



14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

Acetone (67-64-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

Heptane, branched, cyclic and linear (426260-76-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Xylenes (o-, m-, p- isomers) (1330-20-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting 1.0 %

n-Heptane (142-82-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

Toluene (108-88-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting 1.0 %

Carbon dioxide (124-38-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. US State regulations

4620()

State or local regulations This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

IARC (I)	International Agency for Research on Cancer.
	1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans.

PENRAY NON-CHLORINATED BRAKE CLEANER

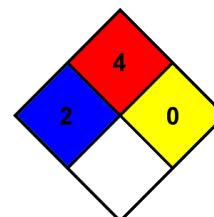
Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

IARC (I)	International Agency for Research on Cancer.
NTP (N)	National Toxicology Program.
	1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration.

SECTION 16: Other information

Indication of changes	:	None.
Other information	:	None.
NFPA health hazard	:	2
NFPA fire hazard	:	4
NFPA reactivity	:	0



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



PENRAY PR-3 WRENCH-EZE AND LUBRICANT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 06/25/2014

Revision date: 06/25/2014

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : PENRAY PR-3 WRENCH-EZE AND LUBRICANT
Product code : 4516

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Penetrant.

1.3. Details of the supplier of the safety data sheet

The Penray Companies, Inc.
440 Denniston Ct.
Wheeling, IL 60090
T (800) 373-6729
rotto@penray.com

1.4. Emergency telephone number

Emergency number : (800) 373-6729
CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable Aerosol 1
Gases Under Pressure - Liquefied Gas
Aspiration hazard 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways.
Precautionary statements (GHS-US) : Keep away from heat/sparks/open flames/hot surfaces. -No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

5 percent of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Petroleum distillates, hydrotreated light	(CAS No) 64742-47-8	15 - 40	Flam. Liq. 3 Asp. Tox. 1
Naphtha, petroleum, heavy alkylate	(CAS No) 64741-65-7	15 - 40	Flam. Liq. 3 Asp. Tox. 1

PENRAY PR-3 WRENCH-EZE AND LUBRICANT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Name	Product identifier	%	GHS-US classification
Propane	(CAS No) 74-98-6	7 - 13	Flam. Gas 1 Liquefied gas
Butane	(CAS No) 106-97-8	5 - 10	Flam. Gas 1 Liquefied gas
Distillates, petroleum, hydrotreated heavy naphthenic	(CAS No) 64742-52-5	5 - 10	Asp. Tox. 1
Nonane	(CAS No) 111-84-2	1 - 5	Flam. Liq. 3 Acute Tox. 4 (Inhalation) Skin Irrit. 2 STOT SE 3 Asp. Tox. 1

* The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water. Remove contact lenses, if worn. If irritation persists, get medical attention.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory tract irritation. Vapours may cause drowsiness or dizziness. Intentional misuse of product by inhalation can result in asphyxiation or death.
- Symptoms/injuries after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.
- Symptoms/injuries after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
- Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Powder, water spray, foam, carbon dioxide.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Extremely flammable aerosol. Products of combustion may include, and are not limited to: oxides of carbon.
- Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

5.3. Advice for firefighters

- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Vapors may be heavier than air and may travel along the ground to a distant ignition source and flash back. Use water spray to keep fire-exposed containers cool.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition.

6.2. Methods and material for containment and cleaning up

- For containment : Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
- Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

PENRAY PR-3 WRENCH-EZE AND LUBRICANT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from sources of ignition. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid contact with skin and eyes. Avoid breathing gas/mist/vapors/spray. Do not swallow. When using do not eat, drink or smoke. Use only outdoors or in a well-ventilated area.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep locked up and out of reach of children. Do not expose at temperatures exceeding 50°C/ 122°F. Store away from direct sunlight or other heat sources. Store in a well-ventilated place.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Petroleum distillates, hydrotreated light (64742-47-8)		
USA ACGIH	ACGIH TWA (mg/m ³)	200 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	100 ppm

Naphtha, petroleum, heavy alkylate (64741-65-7)		
USA ACGIH	ACGIH TWA (ppm)	100 ppm
USA OSHA	OSHA PEL (TWA) (ppm)	100 ppm

Propane (74-98-6)		
USA ACGIH	ACGIH TWA (ppm)	1000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1800 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

Butane (106-97-8)		
USA ACGIH	ACGIH STEL (ppm)	1000 ppm

Distillates, petroleum, hydrotreated heavy naphthenic (64742-52-5)		
USA ACGIH	ACGIH TWA (ppm)	5 mg/m ³ (mist)
USA OSHA	OSHA PEL (TWA) (ppm)	5 mg/m ³ (mist)

Nonane (111-84-2)		
USA ACGIH	ACGIH TWA (ppm)	200 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1050 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm

8.2. Exposure controls

Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear chemically resistant protective gloves.

Eye protection : Safety glasses or goggles are recommended when using product.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : A NIOSH approved respirator is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls : Maintain levels below Community environmental protection thresholds.

PENRAY PR-3 WRENCH-EZE AND LUBRICANT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Other information : Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas/Pressurized Liquid.
Appearance : Clear.
Colour : Colourless.
Odour : Solvent
Odour threshold : No data available.
pH : No data available.
Relative evaporation rate (butylacetate=1) : No data available.
Melting point : No data available.
Freezing point : No data available.
Boiling point : No data available.
Flash point : No data available.
Self ignition temperature : No data available.
Decomposition temperature : No data available.
Flammability (solid, gas) : Flammable.
Vapour pressure : No data available.
Relative vapour density at 20 °C : No data available.
Relative density : 0.854 - 0.861
Solubility : No data available.
Log Pow : No data available.
Log Kow : No data available.
Viscosity, kinematic : No data available.
Viscosity, dynamic : No data available.
Explosive properties : No data available.
Oxidising properties : No data available.
Explosive limits : No data available.

9.2. Other information

No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions. Extremely flammable aerosol. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Heat. Incompatible materials. Sources of ignition.

10.5. Incompatible materials

Strong oxidizing agents. Acids. Bases.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

4516

LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

PENRAY PR-3 WRENCH-EZE AND LUBRICANT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

4516	
LC50 inhalation rat (mg/l)	> 5 mg/l/4h
Petroleum distillates, hydrotreated light (64742-47-8)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5.2 mg/l/4h
Naphtha, petroleum, heavy alkylate (64741-65-7)	
LD50 oral rat	> 7000 mg/kg
LD50 dermal rat	> 3000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5.04 mg/l/4h
Propane (74-98-6)	
LC50 inhalation rat (mg/l)	658 mg/l/4h
Butane (106-97-8)	
LC50 inhalation rat (mg/l)	658 mg/l/4h
Distillates, petroleum, hydrotreated heavy naphthenic (64742-52-5)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg
LC50 inhalation rat (mg/l)	> 5.0 mg/l/4h
Nonane (111-84-2)	
LC50 inhalation rat (ppm)	3200 ppm/4h

Skin corrosion/irritation	: Based on available data, the classification criteria are not met.
Serious eye damage/irritation	: Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	: Based on available data, the classification criteria are not met.
Germ cell mutagenicity	: Based on available data, the classification criteria are not met.
Carcinogenicity	: Based on available data, the classification criteria are not met.
Reproductive toxicity	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (repeated exposure)	: Based on available data, the classification criteria are not met.
Aspiration hazard	: May be fatal if swallowed and enters airways.
Symptoms/injuries after inhalation	: May cause respiratory tract irritation. Vapours may cause drowsiness or dizziness. Intentional misuse of product by inhalation can result in asphyxiation or death.
Symptoms/injuries after skin contact	: May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.
Symptoms/injuries after eye contact	: May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/injuries after ingestion	: May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

4516	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

4516	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available.

PENRAY PR-3 WRENCH-EZE AND LUBRICANT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

12.5. Other adverse effects

Effect on ozone layer : No additional information available.
Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.
Additional information : Flammable vapours may accumulate in the container. Do not incinerate closed containers.

SECTION 14: Transport information

In accordance with DOT:

14.1. UN number

UN-No. UN1950

14.2. UN proper shipping name

Proper Shipping Name : Aerosols, flammable
Hazard Classes : 2.1
Hazard labels :



14.3. Additional information

Other information : No supplementary information available.
Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

Nonane (111-84-2)

EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
--------------------------	--

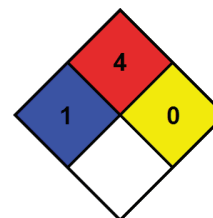
15.2. US State regulations

4516

State or local regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.
----------------------------	--

SECTION 16: Other information

Indication of changes : None.
Date of issue : 06/25/2014
Other information : None.
NFPA health hazard : 1
NFPA fire hazard : 4.
NFPA reactivity : 0



Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.



PENRAY STARTING FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 05/28/2014

Revision date: 05/28/2014

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : PENRAY STARTING FLUID
Product code : 5301

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Starting Fluid.

1.3. Details of the supplier of the safety data sheet

The Penray Companies, Inc.
440 Denniston Ct.
Wheeling, IL 60090
T (800) 373-6729
rotto@penray.com

1.4. Emergency telephone number

Emergency number : (800) 373-6729
CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable Aerosol 1
Gases Under Pressure - Compressed Gas
Skin irritation 2
Carcinogenicity 2
Specific target organ toxicity - Single exposure 3
Aspiration hazard 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Causes skin irritation. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways.

Precautionary statements (GHS-US) :

Keep away from heat/sparks/open flames/hot surfaces. -No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Wash hands thoroughly after handling. Wear protective gloves. Avoid breathing gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

77 % of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Heptane, branched, cyclic and linear	(CAS No) 426260-76-6	60 - 100	Flam. Liq. 2 Skin Irrit. 2 STOT SE 3 Asp. Tox. 1

PENRAY STARTING FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Name	Product identifier	%	GHS-US classification
Ethyl ether	(CAS No) 60-29-7	10 - 30	Flam. Liq. 1 Acute Tox. 4 (Oral) STOT SE 3
Carbon dioxide	(CAS No) 124-38-9	3 - 7	Compressed gas
n-Heptane	(CAS No) 142-82-5	1 - 5	Flam. Liq. 2 Skin Irrit. 2 STOT SE 3
Ethyl alcohol	(CAS No) 64-17-5	0.5 - 1.5	Flam. Liq. 2 Eye Irrit. 2A
Ethyl chloride	(CAS No) 75-00-3	0.1 - 1	Flam. Gas 1 Liquefied gas Carc. 2
Toluene	(CAS No) 108-88-3	< 0.1	Flam. Liq. 2 Acute Tox. 4 (Oral) Skin Irrit. 2 Repr. 2 STOT SE 3 STOT RE 2 Asp. Tox. 1

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water. Remove contact lenses, if worn. If irritation persists, get medical attention.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause drowsiness, dizziness and central nervous system depression. May cause respiratory tract irritation.
- Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
- Symptoms/injuries after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
- Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Powder, water spray, foam, carbon dioxide.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Extremely flammable aerosol. Products of combustion may include, and are not limited to: oxides of carbon.
- Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

5.3. Advice for firefighters

- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Vapors may be heavier than air and may travel along the ground to a distant ignition source and flash back. Use water spray to keep fire-exposed containers cool.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition.

6.2. Methods and material for containment and cleaning up

- For containment : Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

PENRAY STARTING FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from sources of ignition. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid contact with skin and eyes. Do not swallow. Avoid breathing gas/mist/vapors/spray. When using do not eat, drink or smoke. Use only outdoors or in a well-ventilated area.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep locked up and out of reach of children. Do not expose to temperatures exceeding 50°C/ 122°F. Store away from direct sunlight or other heat sources. Store in a well-ventilated place.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Heptane, branched, cyclic and linear (426260-76-6)		
USA ACGIH	ACGIH TWA	Not applicable.
USA OSHA	OSHA PEL (TWA)	Not applicable.

Ethyl ether (60-29-7)		
USA ACGIH	ACGIH TWA (ppm)	400 ppm
USA ACGIH	ACGIH STEL (ppm)	500 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1200 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	400 ppm

Carbon dioxide (124-38-9)		
USA ACGIH	ACGIH TWA (ppm)	5000 ppm
USA ACGIH	ACGIH STEL (ppm)	30000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	9000 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	5000 ppm

n-Heptane (142-82-5)		
USA ACGIH	ACGIH TWA (ppm)	400 ppm
USA ACGIH	ACGIH STEL (ppm)	500 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2000 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	500 ppm

Ethyl alcohol (64-17-5)		
USA ACGIH	ACGIH STEL (ppm)	1000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1900 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

Ethyl chloride (75-00-3)		
USA ACGIH	ACGIH TWA (ppm)	100 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2600 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

Toluene (108-88-3)		
USA ACGIH	ACGIH TWA (ppm)	20 ppm
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm
USA OSHA	OSHA PEL (Ceiling) (ppm)	300 ppm

PENRAY STARTING FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

8.2. Exposure controls

Appropriate engineering controls	: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear chemically resistant protective gloves.
Eye protection	: Safety glasses or goggles are recommended when using product.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: A NIOSH approved respirator is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Environmental exposure controls	: Maintain levels below Community environmental protection thresholds.
Other information	: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas/Pressurized Liquid.
Appearance	: Clear.
Colour	: Colourless.
Odour	: Solvent.
Odour threshold	: No data available.
pH	: No data available.
Relative evaporation rate (butylacetate=1)	: No data available.
Melting point	: No data available.
Freezing point	: No data available.
Boiling point	: No data available.
Flash point	: No data available.
Self ignition temperature	: No data available.
Decomposition temperature	: No data available.
Flammability (solid, gas)	: Flammable.
Vapour pressure	: No data available.
Relative vapour density at 20 °C	: No data available.
Relative density	: No data available.
Solubility	: No data available.
Log Pow	: No data available.
Log Kow	: No data available.
Viscosity, kinematic	: No data available.
Viscosity, dynamic	: No data available.
Explosive properties	: No data available.
Oxidising properties	: No data available.
Explosive limits	: No data available.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions. Extremely flammable aerosol. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Heat. Incompatible materials. Sources of ignition. Air contact. Direct sunlight. Moisture.

10.5. Incompatible materials

Acids. Chlorine. Oxidizers. Reducing agents

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

PENRAY STARTING FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

5301	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5 mg/l/4h

Ethyl ether (60-29-7)	
LD50 oral rat	1215 mg/kg
LD50 dermal rabbit	>20 mL/kg

n-Heptane (142-82-5)	
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (mg/l)	103 g/m ³ /4h

Ethyl alcohol (64-17-5)	
LD50 oral rat	7060 mg/kg
LC50 inhalation rat (mg/l)	124.7 mg/l/4h

Ethyl chloride (75-00-3)	
LC50 inhalation rat (mg/l)	152 g/m ³ /2h

Toluene (108-88-3)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	12124 mg/kg
LD50 dermal rabbit	8390 mg/kg
LC50 inhalation rat (mg/l)	28.1 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation : Based on available data, the classification criteria are not met.
Germ cell mutagenicity : Based on available data, the classification criteria are not met.
Carcinogenicity : Suspected of causing cancer.

Ethyl alcohol (64-17-5)	
IARC group	1 (in alcoholic beverages)

Ethyl chloride (75-00-3)	
IARC group	3
National Toxicity Program (NTP) Status	1

Toluene (108-88-3)	
IARC group	3

Reproductive toxicity : Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure) : May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure) : Based on available data, the classification criteria are not met.
Aspiration hazard : May be fatal if swallowed and enters airways.
Symptoms/injuries after inhalation : May cause drowsiness, dizziness and central nervous system depression. May cause respiratory tract irritation.
Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
Symptoms/injuries after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

5301	
Persistence and degradability	Not established.

PENRAY STARTING FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

12.3. Bioaccumulative potential

5301

Bioaccumulative potential : Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

Additional information : Flammable vapours may accumulate in the container. Do not incinerate closed containers.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

UN-No. : UN1950

14.2. UN proper shipping name

Proper Shipping Name : Aerosols flammable

Department of Transportation Hazard Classes : 2.1

Hazard labels :



14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

Heptane, branched, cyclic and linear (426260-76-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Ethyl ether (60-29-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag : T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

Carbon dioxide (124-38-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

n-Heptane (142-82-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag : T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

Ethyl alcohol (64-17-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Ethyl chloride (75-00-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

EPA TSCA Regulatory Flag : T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

SARA Section 313 - Emission Reporting : 1.0 %

Toluene (108-88-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting : 1.0 %

15.2. US State regulations

5301

State or local regulations : This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

PENRAY STARTING FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

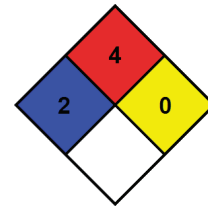
SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

IARC	International Agency for Research on Cancer.
	1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans.
NTP	National Toxicology Program.
	1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration.

SECTION 16: Other information

Indication of changes : None.
Date of issue : 05/28/2014
Other information : None.

NFPA health hazard : 2
NFPA fire hazard : 4
NFPA reactivity : 0



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



PENRAY STARTING FLUID-HIGH ETHER CONTENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 05/28/2014

Revision date: 05/28/2014

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : PENRAY STARTING FLUID-HIGH ETHER CONTENT
Product code : 5315

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Starting Fluid.

1.3. Details of the supplier of the safety data sheet

The Penray Companies, Inc.
440 Denniston Ct.
Wheeling, IL 60090
T (800) 373-6729
rotto@penray.com

1.4. Emergency telephone number

Emergency number : (800) 373-6729
CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable Aerosol 1
Gases Under Pressure - Compressed Gas
Skin irritation 2
Carcinogenicity 2
Reproductive toxicity 2 (developmental)
Specific target organ toxicity - Single exposure 3
Aspiration hazard 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Causes skin irritation. Suspected of damaging the unborn child. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways.

Precautionary statements (GHS-US) :

Keep away from heat/sparks/open flames/hot surfaces. -No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Wash hands thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. If exposed or concerned: Get medical advice/attention. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

51 % of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

PENRAY STARTING FLUID-HIGH ETHER CONTENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Heptane, branched, cyclic and linear	(CAS No) 426260-76-6	40 - 70	Flam. Liq. 2 Skin Irrit. 2 STOT SE 3 Asp. Tox. 1
Ethyl ether	(CAS No) 60-29-7	30 - 60	Flam. Liq. 1 Acute Tox. 4 (Oral) STOT SE 3
Carbon dioxide	(CAS No) 124-38-9	3 - 7	Compressed gas
Ethyl alcohol	(CAS No) 64-17-5	1 - 5	Flam. Liq. 2 Eye Irrit. 2A
n-Heptane	(CAS No) 142-82-5	0.5 - 2.5	Flam. Liq. 2 Skin Irrit. 2 STOT SE 3
Ethyl chloride	(CAS No) 75-00-3	0.1 - 1	Flam. Gas 1 Liquefied gas Carc. 2
Toluene	(CAS No) 108-88-3	0.1 - 1	Flam. Liq. 2 Acute Tox. 4 (Oral) Skin Irrit. 2 Repr. 2 STOT SE 3 STOT RE 2 Asp. Tox. 1

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water. Remove contact lenses, if worn. If irritation persists, get medical attention.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause drowsiness, dizziness and central nervous system depression. May cause respiratory tract irritation.
- Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
- Symptoms/injuries after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
- Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Powder, water spray, foam, carbon dioxide.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Extremely flammable aerosol. Products of combustion may include, and are not limited to: oxides of carbon.
- Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

5.3. Advice for firefighters

- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Vapors may be heavier than air and may travel along the ground to a distant ignition source and flash back. Use water spray to keep fire-exposed containers cool.

PENRAY STARTING FLUID-HIGH ETHER CONTENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition.

6.2. Methods and material for containment and cleaning up

For containment : Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from sources of ignition. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid contact with skin and eyes. Do not swallow. Avoid breathing gas/mist/vapors/spray. When using do not eat, drink or smoke. Use only outdoors or in a well-ventilated area.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep locked up and out of reach of children. Do not expose to temperatures exceeding 50°C/122°F. Store away from direct sunlight or other heat sources. Store in a well-ventilated place.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Heptane, branched, cyclic and linear (426260-76-6)		
USA ACGIH	ACGIH TWA	Not applicable.
USA OSHA	OSHA PEL (TWA)	Not applicable.

Ethyl ether (60-29-7)		
USA ACGIH	ACGIH TWA (ppm)	400 ppm
USA ACGIH	ACGIH STEL (ppm)	500 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1200 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	400 ppm

Carbon dioxide (124-38-9)		
USA ACGIH	ACGIH TWA (ppm)	5000 ppm
USA ACGIH	ACGIH STEL (ppm)	30000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	9000 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	5000 ppm

Ethyl alcohol (64-17-5)		
USA ACGIH	ACGIH STEL (ppm)	1000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1900 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

n-Heptane (142-82-5)		
USA ACGIH	ACGIH TWA (ppm)	400 ppm
USA ACGIH	ACGIH STEL (ppm)	500 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2000 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	500 ppm

Ethyl chloride (75-00-3)		
USA ACGIH	ACGIH TWA (ppm)	100 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2600 mg/m ³

PENRAY STARTING FLUID-HIGH ETHER CONTENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Ethyl chloride (75-00-3)		
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

Toluene (108-88-3)		
USA ACGIH	ACGIH TWA (ppm)	20 ppm
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm
USA OSHA	OSHA PEL (Ceiling) (ppm)	300 ppm

8.2. Exposure controls

Appropriate engineering controls	:	Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Personal protective equipment	:	Avoid all unnecessary exposure.
Hand protection	:	Wear chemically resistant protective gloves.
Eye protection	:	Safety glasses or goggles are recommended when using product.
Skin and body protection	:	Wear suitable protective clothing.
Respiratory protection	:	A NIOSH approved respirator is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Environmental exposure controls	:	Maintain levels below Community environmental protection thresholds.
Other information	:	Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Gas/Pressurized Liquid.
Appearance	:	Clear.
Colour	:	Colourless.
Odour	:	Solvent.
Odour threshold	:	No data available.
pH	:	No data available.
Relative evaporation rate (butylacetate=1)	:	No data available.
Melting point	:	No data available.
Freezing point	:	No data available.
Boiling point	:	No data available.
Flash point	:	No data available.
Self ignition temperature	:	No data available.
Decomposition temperature	:	No data available.
Flammability (solid, gas)	:	Flammable.
Vapour pressure	:	No data available.
Relative vapour density at 20 °C	:	No data available.
Relative density	:	No data available.
Solubility	:	No data available.
Log Pow	:	No data available.
Log Kow	:	No data available.
Viscosity, kinematic	:	No data available.
Viscosity, dynamic	:	No data available.
Explosive properties	:	No data available.
Oxidising properties	:	No data available.
Explosive limits	:	No data available.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions. Extremely flammable aerosol. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn.

PENRAY STARTING FLUID-HIGH ETHER CONTENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Heat. Incompatible materials. Sources of ignition. Air contact. Direct sunlight. Moisture.

10.5. Incompatible materials

Acids. Chlorine. Oxidizers. Reducing agents.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

5315	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5 mg/l/4h

Ethyl ether (60-29-7)	
LD50 oral rat	1215 mg/kg
LD50 dermal rabbit	>20 mL/kg

Ethyl alcohol (64-17-5)	
LD50 oral rat	7060 mg/kg
LC50 inhalation rat (mg/l)	124.7 mg/l/4h

n-Heptane (142-82-5)	
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (mg/l)	103 g/m ³ /4h

Ethyl chloride (75-00-3)	
LC50 inhalation rat (mg/l)	152 g/m ³ /2h

Toluene (108-88-3)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	12124 mg/kg
LD50 dermal rabbit	8390 mg/kg
LC50 inhalation rat (mg/l)	28.1 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation : Based on available data, the classification criteria are not met.
Germ cell mutagenicity : Based on available data, the classification criteria are not met.
Carcinogenicity : Suspected of causing cancer.

Ethyl alcohol (64-17-5)	
IARC group	1 (in alcoholic beverages)

Ethyl chloride (75-00-3)	
IARC group	3
National Toxicity Program (NTP) Status	1

Toluene (108-88-3)	
IARC group	3

Reproductive toxicity : Suspected of damaging the unborn child.
Specific target organ toxicity (single exposure) : May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure) : Based on available data, the classification criteria are not met.
Aspiration hazard : May be fatal if swallowed and enters airways.
Symptoms/injuries after inhalation : May cause drowsiness, dizziness and central nervous system depression. May cause respiratory tract irritation.
Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
Symptoms/injuries after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

PENRAY STARTING FLUID-HIGH ETHER CONTENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

5315

Persistence and degradability	Not established.
-------------------------------	------------------

12.3. Bioaccumulative potential

5315

Bioaccumulative potential	Not established.
---------------------------	------------------

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

Additional information : Flammable vapours may accumulate in the container. Do not incinerate closed containers.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

UN-No. : UN1950

14.2. UN proper shipping name

Proper Shipping Name : Aerosols flammable

Department of Transportation Hazard Classes : 2.1

Hazard labels :



14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

Heptane, branched, cyclic and linear (426260-76-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Ethyl ether (60-29-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
--------------------------	--

Carbon dioxide (124-38-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Ethyl alcohol (64-17-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

n-Heptane (142-82-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
--------------------------	--

Ethyl chloride (75-00-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

PENRAY STARTING FLUID-HIGH ETHER CONTENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Ethyl chloride (75-00-3)	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
SARA Section 313 - Emission Reporting	1.0 %

Toluene (108-88-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %

15.2. US State regulations

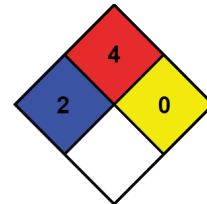
5315()	
State or local regulations	This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

IARC	International Agency for Research on Cancer.
	1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans.
NTP	National Toxicology Program.
	1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration.

SECTION 16: Other information

Indication of changes	:	None.
Date of issue	:	05/28/2014
Other information	:	None.
NFPA health hazard	:	2
NFPA fire hazard	:	4
NFPA reactivity	:	0



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



PENRAY SUPER HEAVY DUTY DOT 3 BRAKE FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 05/28/2014

Revision date: 05/28/2014

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : PENRAY SUPER HEAVY DUTY DOT 3 BRAKE FLUID
Product code : 6032

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : DOT 3 brake fluid.

1.3. Details of the supplier of the safety data sheet

The Penray Companies, Inc.
440 Denniston Ct.
Wheeling, IL 60090
T (800) 373-6729
rotto@penray.com

1.4. Emergency telephone number

Emergency number : (800) 373-6729
CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Serious Eye Damage/Eye Irritation 1
Acute Oral Toxicity 4

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : DANGER

Hazard statements (GHS-US) : Causes serious eye damage. Harmful if swallowed

Precautionary statements (GHS-US) : Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection/face protection.

IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Dispose of contents/container to an approved waste disposal plant

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

27 % of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Diethylene glycol	(CAS No) 111-46-6	15-25	Acute Tox. 4 (Oral)
Triethylene glycol monobutyl ether	(CAS No) 143-22-6	15-30	Eye Dam. 1
Diethylene glycol monobutyl ether	(CAS No) 112-34-5	10-20	
Ethanol, 2-(2-propoxyethoxy)-	(CAS No) 6881-94-3	5-10	

PENRAY SUPER HEAVY DUTY DOT 3 BRAKE FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Name	Product identifier	%	GHS-US classification
The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.			

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.
- Symptoms/injuries after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Symptoms/injuries after ingestion : May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Powder, water spray, foam, carbon dioxide.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.3. Advice for firefighters

- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Use water spray to keep fire-exposed containers cool.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

- For containment : Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
- Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid contact with skin and eyes. Do not swallow. Avoid breathing gas/fumes/vapor/spray. Handle and open container with care. When using do not eat, drink or smoke.
- Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in a well-ventilated place

7.3. Specific end use(s)

Not available.

PENRAY SUPER HEAVY DUTY DOT 3 BRAKE FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Diethylene glycol (111-46-6)		
USA ACGIH	ACGIH TWA	Not applicable.
USA OSHA	OSHA PEL	Not applicable.

Triethylene glycol monobutyl ether (143-22-6)		
USA ACGIH	ACGIH TWA	Not applicable.
USA OSHA	OSHA PEL	Not applicable.

3,6,9,12-Tetraoxahexadecan-1-ol (1559-34-8)		
USA ACGIH	ACGIH TWA	Not applicable.
USA OSHA	OSHA PEL	Not applicable.

8.2. Exposure controls

Appropriate engineering controls	:	Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Personal protective equipment	:	Avoid all unnecessary exposure.
Hand protection	:	Wear suitable gloves.
Eye protection	:	Safety glasses or goggles are recommended when using product.
Skin and body protection	:	Wear suitable protective clothing.
Respiratory protection	:	In case of insufficient ventilation, wear suitable respiratory equipment.
Environmental exposure controls	:	Maintain levels below Community environmental protection thresholds.
Other information	:	Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid.
Appearance	:	No data available.
Colour	:	Amber.
Odour	:	Mild.
Odour threshold	:	No data available.
pH	:	8.6
Relative evaporation rate (butylacetate=1)	:	No data available.
Melting point	:	No data available.
Freezing point	:	< -50 °C (< -58 °F)
Boiling point	:	> 232 °C (> 560 °F) @ 760 mm Hg
Flash point	:	> 121 °C (> 250 °F)
Self ignition temperature	:	310 °C (590 °F)
Decomposition temperature	:	No data available.
Flammability (solid, gas)	:	Not flammable.
Vapour pressure	:	No data available.
Relative vapour density at 20 °C	:	No data available.
Relative density	:	1.06
Solubility	:	Soluble in water.
Log Pow	:	No data available.
Log Kow	:	No data available.
Viscosity, kinematic	:	No data available.
Viscosity, dynamic	:	No data available.
Explosive properties	:	No data available.
Oxidising properties	:	No data available.
Explosive limits	:	No data available.

9.2. Other information

No additional information available

PENRAY SUPER HEAVY DUTY DOT 3 BRAKE FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Incompatible materials. Sources of ignition.

10.5. Incompatible materials

Oxidizers.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

6032	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	No data available.

Diethylene glycol (111-46-6)	
LD50 oral rat	12565 mg/kg
LD50 dermal rabbit	11890 mg/kg

Triethylene glycol monobutyl ether (143-22-6)	
LD50 oral rat	5300 mg/kg
LD50 dermal rabbit	3480 mg/kg

3,6,9,12-Tetraoxahexadecan-1-ol (1559-34-8)	
LD50 oral rat	5175 mg/kg
LD50 dermal rat	> 4000 mg/kg

Skin corrosion/irritation	: Based on available data, the classification criteria are not met.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Based on available data, the classification criteria are not met.
Germ cell mutagenicity	: Based on available data, the classification criteria are not met.
Carcinogenicity	: Based on available data, the classification criteria are not met.
Reproductive toxicity	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (repeated exposure)	: Based on available data, the classification criteria are not met.
Aspiration hazard	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after skin contact	: May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.
Symptoms/injuries after eye contact	: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/injuries after ingestion	: May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

6032	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

6032	
Bioaccumulative potential	Not established.

PENRAY SUPER HEAVY DUTY DOT 3 BRAKE FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

Diethylene glycol (111-46-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag

Y2 - Y2 - indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

Triethylene glycol monobutyl ether (143-22-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag

T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

3,6,9,12-Tetraoxahexadecan-1-ol (1559-34-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. US State regulations

6032

State or local regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

IARC	International Agency for Research on Cancer.
	1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans.
NTP	National Toxicology Program.
	1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration.

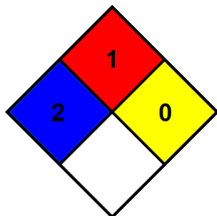
PENRAY SUPER HEAVY DUTY DOT 3 BRAKE FLUID

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 16: Other information

Indication of changes : None.
Date of issue : 05/28/2014
Other information : None.



NFPA health hazard : 2
NFPA fire hazard : 1
NFPA reactivity : 0

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

POWER SERVICE PRODUCTS, INC.
SAFETY DATA SHEET



SECTION 1 - IDENTIFICATION

PRODUCT NAME: DIESEL 9•1•1

Unless otherwise noted, all sections of this MSDS apply to each of the following products and part numbers.

PART NUMBERS:

8016-09, 8025-09, 8025-12, 8080-06, 8050-02, 8055-01, 8260-01 18016-09, 18025-12, 18080-06

COMPANY IDENTIFICATION:

Power Service Products, Inc.
P.O. Box 1089
Weatherford, TX 76086
Email: psp@powerservice.com
Phone: 800/643-9089 or 817-599-9486
Fax: 817-599-4893

Emergency Phone Number: Within USA 1-800-424-9300. Outside USA 001-703-527-3887 (Call Collect).

RECOMMENDED USES: Diesel fuel additive

SECTION 2 - HAZARD(S) IDENTIFICATION

CLASSIFICATION UNDER 29 CFR 1910.1200(d)

(NC=product does not meet classification criteria)

Health Hazard Criteria	Category
Acute Toxicity, Oral:	NC
Acute Toxicity, Dermal:	NC
Acute Toxicity, Inhalation, Vapors:	NC
Skin Corrosion/Irritation:	2
Serious Eye Damage/Eye Irritation:	2
Respiratory Sensitization:	NC
Skin Sensitization:	NC
Germ Cell Mutagenicity:	NC

Health Hazard Criteria	Category
Carcinogenicity:	NC
Reproductive Toxicity:	NC
Specific Target Organ Toxicity, Single Exposure:	3
Specific Target Organ Toxicity, Repeated or Prolonged Exposure:	NC
Aspiration Hazard:	1

Physical Properties Criteria	Category
Explosives:	NC
Flammable Gases:	NC
Flammable Aerosols:	NC
Oxidizing Gases:	NC
Gases Under Pressure:	NC
Flammable Liquids:	3
Flammable Solids:	NC
Self-Reactive Chemicals:	NC
Pyrophoric Liquids:	NC
Pyrophoric Solids:	NC
Self-Heating Chemicals:	NC
Chemicals Which, in Contact with Water, Emit Flammable Gases:	NC
Oxidizing Liquids:	NC
Oxidizing Solids:	NC
Organic Peroxides:	NC
Corrosive to Metals:	NC

LABEL SIGNAL WORD, HAZARD STATEMENTS, SYMBOLS AND PRECAUTIONARY STATEMENTS UNDER 29 CFR 1910.1200(f):

Please see the Note regarding product labeling in Section 16.

Signal Word(s): **Danger**

Hazard Statement(s): Flammable liquid and vapor. May be fatal if swallowed and enters airways. Causes skin and serious eye irritation. May cause respiratory irritation.

Symbols:



Precautionary Statement(s): Keep away from sparks and open flames. No smoking. Keep container tightly closed. Use only non-sparking tools. Ground/Bond container and receiving equipment. Use explosion-proof pumps when pumping. Take precautionary measures against static discharge. Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Wash

hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves and eye protection. Store locked up and in cool, well ventilated place. KEEP OUT OF REACH OF CHILDREN.

Hazards Not Otherwise Classified: None

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

The specific chemical identity and exact concentration percentage has been withheld as a Trade Secret. Specific chemical information will be made available to health professionals in accordance with 29 CFR 1910.1200.

INGREDIENTS CLASSIFIED AS HEALTH HAZARDS

Chemical Name	Common Name/Synonyms	CAS Number	Concentration (%)
Aliphatic hydroxy hydrocarbons	Trade secret	Trade secret	40 - 90
Petroleum Distillates	Trade secret	Trade secret	10 - 30

SECTION 4 - FIRST AID MEASURES

As a precaution, exposure to liquids, vapors, mists and fumes should be minimized.

EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice.

SKIN CONTACT: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs get medical advice/attention.

INHALATION: Remove person to fresh air and keep comfortable for breathing. Call a doctor.

INGESTION: If swallowed, IMMEDIATELY call a doctor. Do NOT induce vomiting.

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA: Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

SPECIFIC HAZARDS: Vapors are heavier than air and may travel along the ground to a distant ignition source and flash back. See Section 10 for Stability and Reactivity. **NOTE:** EMPTY CONTAINERS CONTAIN COMBUSTIBLE VAPORS THAT CAN CAUSE FLASH FIRES OR EXPLOSIONS. CONTAINERS ARE SINGLE-TRIP CONTAINERS AND SHOULD NOT BE USED FOR ANY REASON AFTER BEING EMPTIED. DO NOT USE CUTTING TORCH

EQUIPMENT OR ANY OTHER FLAME OR OTHER SOURCES OF IGNITION ON ANY EMPTY CONTAINER.

PROTECTIVE EQUIPMENT AND PRECAUTIONS: Use standard protective equipment including self-contained breathing apparatus (SCBA).

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES: Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas. Eliminate all sources of ignition in the vicinity of the spill or released vapor. See Section 2 for Hazards Identification. See Section 4 for First Aid Measures. See Section 5 for Fire Fighting Information. See Section 8 for Personal Protective Equipment.

SPILL CONTAINMENT AND CLEAN-UP: Eliminate potential sources of ignition. Stop leak if it can be done without risk. Dike and contain spill. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. A vapor suppressing foam may be used to reduce vapors. Local, state and federal laws and/or regulations may apply to releases and disposal of this material, as well as those materials and items employed in the clean-up releases. The user/responder will need to determine which local, state and federal laws and/or regulations are applicable. The National Response Center can be reached at 1-800-424-8802.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Avoid contact with eyes and skin. Use only with adequate ventilation. Use proper bonding and/or grounding procedures. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Keep away from ignition sources such as heat, sparks, and flames. No smoking.

CONDITIONS FOR SAFE STORAGE: DO NOT USE OR STORE near heat, sparks, or flame. USE AND STORE ONLY IN A WELL-VENTILATED AREA. Handle containers with care. Keep container closed when not in use. Store locked up.

STORAGE TEMPERATURE: -40°F to 100°F (-40°C to 38°C)

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN FLAMMABLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

	CAS #	OSHA	ACGIH		NIOSH			Note
		PEL	TLV	STEL	REL	STEL	IDLH	
Ethylbenzene	100-41-4	100 ppm	20 ppm	not est.	100 ppm	125 ppm	800 ppm (LEL)	n/a
Cumene	98-82-8	50 ppm	50 ppm	not est.	50 ppm	not est.	900 ppm (LEL)	Skin
Petroleum Distillates	n/a	500 ppm	not est.	not est.	not est.	not est.	not est.	n/a
2-Butanol	78-92-2	150 ppm	100 ppm	not est.	100 ppm	150 ppm	2,000 ppm	n/a
N-Butanol	71-36-3	100 ppm	20 ppm	not est.	not est.	not est.	1,400 ppm (LEL)	Skin

ENGINEERING CONTROLS: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Local exhaust ventilation is recommended to control exposure.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Eyes and Face: Eye protection such as safety glasses or chemical goggles is recommended if contact is likely.

Skin: If prolonged or repeated skin contact is likely, chemical/oil resistant clothing and gloves are recommended. Wear additional protective clothing as appropriate.

Respiratory: Wear a NIOSH/MSHA approved respirator as necessary.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Practice good housekeeping.

NOTE: These precautions are for room temperature handling.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid, straw yellow
Odor	Strong solvent
Odor Threshold	Not available
pH	Not applicable
Melting point/Freezing point	Not available
Initial Boiling Point and Boiling Range	187.7°F (86.5°C)
Flash Point	74°F (TCC) 23°C
Evaporation Rate	Not available
Flammability	Not available
Upper / lower Flammability or Explosive Limits	Not available

Vapor Pressure	Not available
Vapor Density	Not available
Relative Density/Specific Gravity (at 60°F)	0.8400
Solubility	Not available
Partition Coefficient; n-octanol / water	Not available
Auto-ignition Temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Pour Point	<-159°F (-106°C)

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY: see Incompatible Materials below

CHEMICAL STABILITY: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

CONDITIONS TO AVOID: Flames, high energy ignition sources, and elevated temperatures.

INCOMPATIBLE MATERIALS: May react with oxygen, oxidizing agents, such as; chlorates, nitrates, peroxides, etc., amines, caustics, alkanolamines halogens, chlorine.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides, products of incomplete combustion.

HAZARDOUS POLYMERIZATION:
Hazardous polymerization will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE

INGESTION	INHALATION	SKIN CONTACT	EYE CONTACT	SKIN ABSORPTION
	X	X	X	X

SYMPTOMS RELATED TO PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS: Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. The vapor or fumes from this material may cause respiratory irritation. Breathing this material at elevated concentrations causes central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors, or convulsions, loss of consciousness, coma or death.

DELAYED AND IMMEDIATE EFFECTS AND CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE: Repeated skin exposure to a component of this product may cause irritation, even a burn; may cause a more severe response on covered skin, such as under clothing or gloves. Inhalation exposure to a component of this product has caused fetotoxicity in the presence of maternal toxicity in animals.

NUMERICAL MEASURES OF TOXICITY

Note: the information provided below are estimates; testing of the product is not available.

Acute Oral Toxicity (ATE _{mix} estimate)	Acute Dermal Toxicity (ATE _{mix} estimate)	Acute Inhalation (ATE _{mix} estimate)
Does not meet criteria	Does not meet criteria	Does not meet criteria

SENSITIZATION: No information available.

MUTAGENICITY: No information available.

CARCINOGENICITY LISTINGS – the following chemicals are listed as indicated:

Chemical	List
Cumene	IARC, NTP
Ethylbenzene	IARC

REPRODUCTIVE TOXICITY: No information available.

TERATOGENICITY/EMBRYOTOXICITY: This product contains a component of a complex mixture (Xylenes (1330-20-7)) that has been shown to cause teratogenicity and/or embryotoxicity.

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE): Respiratory tract irritation.

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): No information available

ASPIRATION HAZARD: Aspiration hazard identified.

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY:

This material is expected to be toxic to aquatic organisms.

PERSISTENCE AND DEGRADABILITY: No information available.

BIOACCUMULATIVE POTENTIAL: No information available.

MOBILITY IN SOIL: No information available.

OTHER ADVERSE EFFECTS: No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

RCRA Information: Disposal of unused product may be subject to RCRA hazardous waste regulations (40 CFR Part 261). Disposal of the used product may also be regulated as hazardous waste due to resulting mixture characteristics, mixture components or product use. Such changes to the product may result in different and/or additional hazardous waste codes. Potential RCRA waste code based on the product as shipped: D001 IGNITABILITY.

State or local laws may impose additional regulatory requirements regarding disposal. *Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.*

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN FLAMMABLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA.

SECTION 14 - TRANSPORTATION INFORMATION

The following part numbers are classified as Limited Quantities:

8016-09, 8025-09, 8025-12, 8080-06, 18016-09, 18025-12, 18080-06

The following part numbers are regulated by DOT:

8050-02, 8055-01, 8260-01

PROPER SHIPPING NAME: Flammable Liquid, N.O.S., (Aliphatic Hydroxy Hydrocarbons)

HAZARD CLASS: 3

I.D. NUMBER: UN 1993

PACKING GROUP: III

PLACARDING: Flammable Liquid

Air shipment is not recommended.

SECTION 15 - REGULATORY INFORMATION

§14(a) Consumer Product Safety Act General Certificate of Conformity

Power Service Products, Inc. certifies that this product meets the statutory and regulatory requirements of the US Consumer Products Safety Act, the Federal Hazardous Substances Act, and the Poison Prevention Packaging Act of 1970, as applicable. The Power Service products are manufactured in the United States in Weatherford, Texas, unless otherwise indicated on the product label. The product manufacture lot code is stamped on the product container. This Certification is based upon a reasonable testing program conducted by Power Service Products, Inc. which includes a quality control program incorporating, as necessary, confirmation of

Revised: January 12, 2017

Supersedes: September 28, 2015

POWER SERVICE DIESEL 9•1•1

compliance by component suppliers. Third-party testing is not required to certify compliance. Further details may be obtained by contacting the Power Service Products, Inc. EHS Manager at 1-800-643-9089.

Contents of this SDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200

TSCA STATUS:

All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

EPA SARA TITLE III CHEMICAL LISTINGS:

Section 302 Extremely Hazardous Substances: None

Sections 311/ 312 Hazard Class:

Acute Health Effects: Yes Sudden Release of Pressure Hazard: No
Chronic Health Effects: Yes Reactivity Hazard: No
Fire Hazard: Yes

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION) RATING:

HEALTH: **2**
FIRE: **3**
REACTIVITY: **0**

Section 313:

Specific chemical information is being withheld as a Trade Secret. The following chemicals subject to the reporting requirements of EPCRA Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR Part 372) may be present in this product at a concentration that does not exceed the specified upper weight percentage.

CAS Number	Chemical Name	Max %
100-41-4	Ethylbenzene	10.0
78-92-2	sec Butyl alcohol	25.0
71-36-3	n-Butyl alcohol	25.0

State or local laws may impose additional regulatory requirements for components of this material. It is the responsibility solely of the Employer to maintain compliance with State and Local reporting.

CA Proposition 65

 **WARNING:** Cancer and Reproductive Harm – www.P65Warnings.ca.gov.

SECTION 16 – OTHER INFORMATION

DATE OF PREPARATION / REVISION: January 12, 2017

Revised: January 12, 2017
Supersedes: September 28, 2015
POWER SERVICE DIESEL 9•1•1

NOTE regarding product labeling: The OSHA Hazard Communication Standard applies to hazardous chemicals known to be present in the workplace. However, the labeling and Safety Data Sheet requirements do not apply to consumer products when they are used in the workplace for the purposes intended by the manufacturer and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the intended purpose. Power Service Products intends for product packaged in 1 gallon or smaller containers to be used by consumers and has labeled those containers as required under the Consumer Product Safety Commission regulations. Power Service Products intends for product packaged in containers larger than 1 gallon to be used in the workplace and has labeled those products as required by the OSHA Hazard Communication Standard. The Consumer Product Safety Commission and OSHA Hazard Communication Standard labeling requirements are different and variations between the consumer and industrial labels may occur. It is the employer's responsibility to purchase the appropriate product for use in the workplace.

The information contained herein is offered in good faith and is believed to be accurate based on the data available to us as of the date of SDS preparation. The information in this document applies to this specific product as supplied. It may not be appropriate for this product if the product is used in combination with other materials. The information in this document is not intended to constitute product performance information. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product. No statement shall be construed as an endorsement of any product or process. The recommended industrial hygiene and safe handling procedures are believed to be valid in the context of the intended use as described in product labeling. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. You are urged to obtain material safety data sheets for all products you buy, process, use or distribute, and are encouraged to advise those who may come in contact with such products of the information contained therein. Regulatory requirements are subject to change and may differ between locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. No warranty or guarantee is expressed or implied with respect to this product, the accuracy and sufficiency of the data or recommendations herein, or the results to be obtained from the use of this product. IN NO EVENT SHALL POWER SERVICE PRODUCTS, INC. BE LIABLE FOR ANY LOSS, CLAIM, DAMAGE OR LIABILITY OF ANY KIND, WHICH MAY ARISE FROM OR IN CONNECTION WITH THE INFORMATION CONTAINED IN THIS DOCUMENT OR FROM THE USE, HANDLING OR STORAGE OF THE PRODUCT BY THE BUYER/USER, WHETHER DIRECT, INDIRECT, OR CONSEQUENTIAL, OR FOR ANY CLAIM BY ANY THIRD PARTY, BEYOND THE PURCHASE PRICE OR REPLACEMENT OF THE PRODUCT IN CONNECTION WITH WHICH SUCH LOSS, CLAIM, DAMAGE OR LIABILITY AROSE.

THE FOREGOING LIMITATIONS APPLY REGARDLESS OF THE CAUSES OR CIRCUMSTANCES GIVING RISE TO SUCH LOSS, CLAIM, DAMAGE OR LIABILITY, EVEN IF SUCH LOSS, CLAIM, DAMAGE, OR LIABILITY IS BASED ON NEGLIGENCE OR OTHER TORTS OR BREACH OF CONTRACT.

POWER SERVICE PRODUCTS, INC.
SAFETY DATA SHEET



SECTION 1 - IDENTIFICATION

PRODUCT NAME: DIESEL FUEL SUPPLEMENT +CETANE BOOST

Unless otherwise noted, all sections of this SDS apply to each of the following products and part numbers.

PART NUMBERS:

1:400 Treatment Ratio	1016-06, 1016-09, 1025-06, 1025-09, 1025-12, 1080-06, 11016-06, 11016-09, 11025-06, 11025-12, 11080-06
1:1,000 Treatment Ratio	1000, 1128-04, 1060-01
1:1,500 Treatment Ratio	1050-02, 1055-01, 1260-01

COMPANY IDENTIFICATION:

Power Service Products, Inc.
P.O. Box 1089
Weatherford, TX 76086
Email: psp@powerservice.com
Phone: 800-643-9089 or 817-599-9486
Fax: 817-599-4893

Emergency Phone Number: Within USA 1-800-424-9300. Outside USA 001-703-527-3887 (Call Collect).

RECOMMENDED USES: Diesel fuel additive

SECTION 2 – HAZARD(S) IDENTIFICATION

CLASSIFICATION UNDER 29 CFR 1910.1200(d)

(NC=product does not meet classification criteria)

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Health Hazard Criteria	Category	Category	Category
Acute Toxicity, Oral:	NC	NC	NC
Acute Toxicity, Dermal:	NC	NC	NC
Acute Toxicity, Inhalation, Vapors:	3	3	3
Skin Corrosion/Irritation:	2	2	2
Serious Eye Damage/Eye Irritation:	2	2	2

Revised: November 3, 2016
Supersedes: September 28, 2015
POWER SERVICE DIESEL FUEL SUPPLEMENT +CETANE BOOST

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Health Hazard Criteria	Category	Category	Category
Respiratory Sensitization:	NC	NC	NC
Skin Sensitization:	NC	NC	NC
Germ Cell Mutagenicity:	NC	NC	NC
Carcinogenicity:	2	2	2
Reproductive Toxicity:	NC	NC	NC
Specific Target Organ Toxicity, Single Exposure:	3	3	3
Specific Target Organ Toxicity, Repeated or Prolonged Exposure:	NC	NC	NC
Aspiration Hazard:	1	1	1

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Physical Properties Criteria	Category	Category	Category
Explosives:	NC	NC	NC
Flammable Gases:	NC	NC	NC
Flammable Aerosols:	NC	NC	NC
Oxidizing Gases:	NC	NC	NC
Gases Under Pressure:	NC	NC	NC
Flammable Liquids:	3	3	3
Flammable Solids:	NC	NC	NC
Self-Reactive Chemicals:	NC	NC	NC
Pyrophoric Liquids:	NC	NC	NC
Pyrophoric Solids:	NC	NC	NC
Self-Heating Chemicals:	NC	NC	NC
Chemicals Which, in Contact with Water, Emit Flammable Gases:	NC	NC	NC
Oxidizing Liquids:	NC	NC	NC
Oxidizing Solids:	NC	NC	NC
Organic Peroxides:	NC	NC	NC
Corrosive to Metals:	NC	NC	NC

LABEL SIGNAL WORD, HAZARD STATEMENTS, SYMBOLS AND PRECAUTIONARY STATEMENTS UNDER 29 CFR 1910.1200(f):

Please see the Note regarding product labeling in Section 16.

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Signal Word	Danger	Danger	Danger

Hazard Statement(s): Flammable liquid and vapor. Toxic if inhaled. May be fatal if swallowed and enters airways. Harmful if swallowed. Causes skin and serious eye irritation. May cause respiratory irritation and drowsiness or dizziness.

Symbols: The following symbols are for all treatment ratios.



Precautionary Statement(s): Keep away from sparks and open flames. No smoking. Keep container tightly closed. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves and eye protection. Store locked up and in cool, well ventilated place. KEEP OUT OF REACH OF CHILDREN.

Hazards Not Otherwise Classified: None

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

The specific chemical identity and exact concentration percentage has been withheld as a Trade Secret. Specific chemical information will be made available to health professionals in accordance with 29 CFR 1910.1200.

INGREDIENTS CLASSIFIED AS HEALTH HAZARDS

TREATMENT RATIO 1:400			
Chemical Name	Common Name/Synonyms	CAS Number	Concentration (%)
Petroleum Distillates	Trade secret	Trade secret	25 - 75
Hydroxy alkoxyate	Trade secret	Trade secret	5 - 15
Alkyl Nitrates	Trade secret	Trade secret	2 – 8
Aromatic hydrocarbons	Trade secret	Trade secret	0.5 - 2
Naphthalene	Not available	91-20-3	0.05 – 0.2

TREATMENT RATIO 1:1000			
Chemical Name	Common Name/Synonyms	CAS Number	Concentration (%)
Petroleum Distillates	Trade secret	Trade secret	35 - 85
Alkyl Nitrates	Trade secret	Trade secret	5 - 15
Aromatic Hydrocarbons	Trade secret	Trade secret	1 - 5
Hexan-1-ol, 2-ethyl	Trade secret	Trade secret	1 - 5
Naphthalene	Not available	91-20-3	0.1 – 0.5

TREATMENT RATIO 1:1500			
Chemical Name	Common Name/Synonyms	CAS Number	Concentration (%)
Petroleum Distillates	Trade secret	Trade secret	25 - 75
Alkyl Nitrates	Trade secret	Trade secret	8 - 22
Aromatic Hydrocarbons	Trade secret	Trade secret	2 - 8
Hexan-1-ol, 2-ethyl	Trade secret	Trade secret	1 – 5
Naphthalene	Not available	91-20-3	0.1 – 0.5

SECTION 4 - FIRST AID MEASURES

As a precaution, exposure to liquids, vapors, mists and fumes should be minimized.

EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice.

SKIN CONTACT: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs get medical advice/attention.

INHALATION: Remove person to fresh air and keep comfortable for breathing. Call a doctor.

INGESTION: If swallowed, IMMEDIATELY call a doctor. Do NOT induce vomiting.

SECTION 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

SPECIFIC HAZARDS: Vapors are heavier than air and may travel along the ground to a distant ignition source and flash back. See Section 10 for Stability and Reactivity. **NOTE:** EMPTY CONTAINERS CONTAIN COMBUSTIBLE VAPORS THAT CAN CAUSE FLASH FIRES OR EXPLOSIONS. CONTAINERS ARE SINGLE-TRIP CONTAINERS AND SHOULD NOT BE USED FOR ANY REASON AFTER BEING EMPTIED. DO NOT USE CUTTING TORCH EQUIPMENT OR ANY OTHER FLAME OR OTHER SOURCES OF IGNITION ON ANY EMPTY CONTAINER.

PROTECTIVE EQUIPMENT AND PRECAUTIONS: Use standard protective equipment including self-contained breathing apparatus (SCBA).

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES: Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas. Eliminate

Revised: November 3, 2016

Supersedes: September 28, 2015

POWER SERVICE DIESEL FUEL SUPPLEMENT +CETANE BOOST

all sources of ignition in the vicinity of the spill or released vapor. See Section 2 for Hazards Identification. See Section 4 for First Aid Measures. See Section 5 for Fire Fighting Information. See Section 8 for Personal Protective Equipment.

SPILL CONTAINMENT AND CLEAN-UP: Eliminate potential sources of ignition. Stop leak if it can be done without risk. Dike and contain spill. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. A vapor suppressing foam may be used to reduce vapors. Local, state and federal laws and/or regulations may apply to releases and disposal of this material, as well as those materials and items employed in the clean-up releases. The user/responder will need to determine which local, state and federal laws and/or regulations are applicable. The National Response Center can be reached at 1-800-424-8802.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Avoid contact with eyes and skin. Use only with adequate ventilation. Use proper bonding and/or grounding procedures. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Keep away from ignition sources such as heat, sparks, and flames. No smoking.

CONDITIONS FOR SAFE STORAGE: DO NOT USE OR STORE near heat, sparks, or flame. USE AND STORE ONLY IN A WELL-VENTILATED AREA. Handle containers with care. Keep container tightly closed when not in use. Store locked up.

STORAGE TEMPERATURE:

Treatment Ratio	Part Numbers:	Storage Temperature:
1:400 Treatment Ratio	1016-06, 1016-09, 1025-06, 1025-12, 1080-06, 11016-06, 11016-09, 11025-06, 11025-12, 11041-04, 11080-06	-20°F to 104°F (-29°C to 40°C)
1:1,000 Treatment Ratio	1000, 1128-04, 1060-01	0°F to 104°F (-18°C to 40°C)
1:1,500 Treatment Ratio	1050-02, 1055-01, 1260-01	10°F to 104°F (-12°C to 40°C)

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN COMBUSTIBLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

	CAS #	OSHA	ACGIH	NIOSH				Note
		PEL	TLV	STEL	REL	STEL	IDLH	
Ethylbenzene	100-41-4	100 ppm	20 ppm	not est.	100 ppm	125 ppm	800 ppm (LEL)	n/a

	CAS #	OSHA	ACGIH	NIOSH				Note
		PEL	TLV	STEL	REL	STEL	IDLH	
Naphthalene	91-20-3	10 ppm	10 ppm	not est.	10 ppm	15 ppm	250 ppm	skin
Petroleum Distillates	n/a	500 ppm	not est.	not est.	not est.	not est.	not est.	n/a
Cumene	98-82-8	50 ppm	50 ppm	not est.	50 ppm	not est.	900 ppm (LEL)	Skin
Toluene	108-88-3	100 ppm	20 ppm	not est.	100 ppm	150 ppm	500 ppm	Skin
Hydroxy Alkoxyate	Proprietary	50 ppm	20 ppm	not est.	5 ppm	not est.	not est.	skin

ENGINEERING CONTROLS: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Local exhaust ventilation is recommended to control exposure.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Eyes and Face: Eye protection such as safety glasses or chemical goggles is recommended if contact is likely.

Skin: Protective chemical/oil resistant gloves are recommended. Wear additional protective clothing as appropriate.

Respiratory: Wear a NIOSH/MSHA approved respirator as necessary.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Practice good housekeeping.

NOTE: These precautions are for room temperature handling.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Appearance	Liquid, brown	Liquid, brown	Liquid, brown
Odor	Aromatic solvent	Aromatic solvent	Aromatic solvent
Odor Threshold	Not available	Not available	Not available
pH	Not applicable	Not applicable	Not applicable
Melting point/Freezing point	Not available	Not available	Not available
Initial Boiling Point and Boiling Range	221.5°F (105.3°C)	262.4°F (128.0°C)	261.7°F (127.6°C)
Flash Point	101°F (38.3°C)	111°F (43.3°C)	107°F (41.7°C)
Evaporation Rate	Not available	Not available	Not available
Flammability	Not available	Not available	Not available
Upper / lower Flammability or Explosive Limits	Not available	Not available	Not available
Vapor Pressure	Not available	Not available	Not available

Revised: November 3, 2016
 Supersedes: September 28, 2015
 POWER SERVICE DIESEL FUEL SUPPLEMENT +CETANE BOOST

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Vapor Density	Not available	Not available	Not available
Relative Density/Specific Gravity	0.9238	0.9281	0.9317
Solubility	Not available	Not available	Not available
Partition Coefficient; n-octanol / water	Not available	Not available	Not available
Auto-ignition Temperature	Not available	Not available	Not available
Decomposition temperature	Not available	Not available	Not available
Viscosity	Not available	Not available	Not available
Pour Point	-55°F (-48°C)	-30°F (-34°C)	-15°F (-26°C)

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY: see Incompatible Materials below

CHEMICAL STABILITY: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

POSSIBILITY OF HAZARDOUS REACTION: Hazardous polymerization will not occur.

CONDITIONS TO AVOID: Flames, high energy ignition sources, and elevated temperatures.

INCOMPATIBLE MATERIALS: May react with strong oxidizing agents, such as; chlorates, nitrates, peroxides, nitrogen oxides, sulfur oxides, etc.; alkalis; nitric acid; sulfuric acid; aluminum; brass; copper; reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides, products of incomplete combustion.

SECTION 11 - TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE

	INGESTION	INHALATION	SKIN CONTACT	EYE CONTACT	SKIN ABSORPTION
1:400 Treatment Ratio		X	X	X	X
1:1000 Treatment Ratio		X	X	X	X
1:1500 Treatment Ratio		X	X	X	X

SYMPTOMS RELATED TO PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS: Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. The vapor or fumes from this material may cause respiratory irritation. Breathing this material at elevated concentrations causes central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion or disorientation. At

Revised: November 3, 2016

Supersedes: September 28, 2015

POWER SERVICE DIESEL FUEL SUPPLEMENT +CETANE BOOST

extreme exposures, central nervous system effects may include respiratory depression, tremors, or convulsions, loss of consciousness, coma or death.

DELAYED AND IMMEDIATE EFFECTS AND CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE: Repeated skin exposure to a component of this product may cause irritation, even a burn; may cause a more severe response on covered skin, such as under clothing or gloves. Inhalation exposure to a component of this product has caused fetotoxicity in the presence of maternal toxicity in animals.

NUMERICAL MEASURES OF TOXICITY

Note: the information provided below are estimates; testing of the product is not available.

Treatment Ratio	Acute Oral Toxicity (ATE _{mix} estimate)	Acute Dermal Toxicity (ATE _{mix} estimate)	Acute Inhalation (ATE _{mix} estimate)
1:400 Treatment Ratio	Does not meet criteria	Does not meet criteria	7.12 (vapors)
1:1,000 Treatment Ratio	Does not meet criteria	Does not meet criteria	8.53 (vapors)
1:1,500 Treatment Ratio	Does not meet criteria	Does not meet criteria	7.68 (vapors)

SENSITIZATION: No information available.

MUTAGENICITY: No information available.

CARCINOGENICITY LISTINGS – the following chemicals are listed as indicated:

Chemical	List
Cumene	IARC, NTP
Ethylbenzene	IARC
Naphthalene	IARC, NTP

REPRODUCTIVE TOXICITY: No information available.

TERATOGENICITY/EMBRYOTOXICITY: Hydroxy Alkoxylate has caused fetotoxicity with maternal toxicity. This product contains a component of a complex mixture (Xylenes (1330-20-7)) that has been shown to cause teratogenicity and/or embryotoxicity.

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE): Respiratory tract irritation, drowsiness/dizziness.

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): No information available

ASPIRATION HAZARD: Aspiration hazard identified.

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY: This material is expected to be toxic to aquatic organisms.

PERSISTENCE AND DEGRADABILITY: No information available.

BIOACCUMULATIVE POTENTIAL: No information available.

MOBILITY IN SOIL: No information available.

OTHER ADVERSE EFFECTS: No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

RCRA Information: Disposal of unused product may be subject to RCRA hazardous waste regulations (40 CFR Part 261). Disposal of the used product may also be regulated as hazardous waste due to resulting mixture characteristics, mixture components or product use. Such changes to the product may result in different and/or additional hazardous waste codes. Potential RCRA waste code based on the product as shipped: D001 IGNITABILITY

State or local laws may impose additional regulatory requirements regarding disposal. *Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.*

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN COMBUSTIBLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA. Dispose or recycle empty containers appropriately per local, state and federal regulations.

SECTION 14 - TRANSPORTATION INFORMATION

The following part numbers are not regulated by DOT:

1:400 Treatment Ratio	1016-06, 1016-09, 1025-06, 1025-09, 1025-12, 1080-06, 11016-06, 11016-09, 11025-06, 11025-12, 1080-06
1:1,000 Treatment Ratio	1128-04
1:1,500 Treatment Ratio	1050-02, 1055-01

The following part numbers are regulated by DOT:

1:1,000 Treatment Ratio	1060-01, 1000
1:1,500 Treatment Ratio	1260-01

PROPER SHIPPING NAME: Combustible Liquid, N.O.S., (Petroleum Distillates) Marine Pollutant (2-Ethylhexyl Nitrate & 1,3,5-trimethylbenzene) RQ (Xylene, Naphthalene)

HAZARD CLASS: Combustible Liquid

Revised: November 3, 2016

Supersedes: September 28, 2015

POWER SERVICE DIESEL FUEL SUPPLEMENT +CETANE BOOST

I.D. NUMBER: NA 1993
PACKING GROUP: III
PLACARDING: Combustible Liquid
MARINE POLLUTANT: Yes
PRODUCT RQ: 100 lbs. (45.45 kg) – Xylene, Naphthalene

SECTION 15 - REGULATORY INFORMATION

§14(a) Consumer Product Safety Act General Certificate of Conformity

Power Service Products, Inc. certifies that this product meets the statutory and regulatory requirements of the US Consumer Products Safety Act, the Federal Hazardous Substances Act, and the Poison Prevention Packaging Act of 1970, as applicable. The Power Service products are manufactured in the United States in Weatherford, Texas, unless otherwise indicated on the product label. The product manufacture lot code is stamped on the product container. This Certification is based upon a reasonable testing program conducted by Power Service Products, Inc. which includes a quality control program incorporating, as necessary, confirmation of compliance by component suppliers. Third-party testing is not required to certify compliance. Further details may be obtained by contacting the Power Service Products, Inc. EHS Manager at 1-800-643-9089.

Contents of this SDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS:

All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

EPA SARA TITLE III CHEMICAL LISTINGS:

Section 302 Extremely Hazardous Substances: None

Sections 311/ 312 Hazard Class:

Acute Health Effects: Yes Sudden Release of Pressure Hazard: No
Chronic Health Effects: Yes Reactivity Hazard: No
Fire Hazard: Yes

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION) RATING:

HEALTH: **2**
FIRE: **2**
REACTIVITY: **0**

Section 313:

Specific chemical information is being withheld as a Trade Secret. The following chemicals subject to the reporting requirements of EPCRA Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR Part 372) may be present in this product at a concentration that does not exceed the specified upper weight percentage.

Treatment Ratio	CAS Number	Chemical Name	Max %
1:400 Treatment Ratio	100-41-4	Ethylbenzene	1.5
	Not available	Glycol Ether Category	8.0
	91-20-3	Naphthalene	0.2
1:1000 Treatment Ratio	100-41-4	Ethylbenzene	0.2
	Not available	Glycol Ether Category	0.4
	91-20-3	Naphthalene	0.3
1:1,500 Treatment Ratio	100-41-4	Ethylbenzene	0.2
	Not available	Glycol Ether Category	0.6
	91-20-3	Naphthalene	0.5

State or local laws may impose additional regulatory requirements for components of this material. It is the responsibility solely of the Employer to maintain compliance with State and Local reporting.

This product contains a chemical known to the state of California to cause cancer and/or birth defects or other reproductive harm: ethylbenzene, toluene, cumene, naphthalene.

SECTION 16 – OTHER INFORMATION

DATE OF PREPARATION / REVISION: November 3, 2016

NOTE regarding product labeling: The OSHA Hazard Communication Standard applies to hazardous chemicals known to be present in the workplace. However, the labeling and Safety Data Sheet requirements do not apply to consumer products when they are used in the workplace for the purposes intended by the manufacturer and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the intended purpose. Power Service Products intends for product packaged in 1 gallon or smaller containers to be used by consumers and has labeled those containers as required under the Consumer Product Safety Commission regulations. Power Service Products intends for product packaged in containers larger than 1 gallon to be used in the workplace and has labeled those products as required by the OSHA Hazard Communication Standard. The Consumer Product Safety Commission and OSHA Hazard Communication Standard labeling requirements are different and variations between the consumer and industrial labels may occur. It is the employer's responsibility to purchase the appropriate product for use in the workplace.

The information contained herein is offered in good faith and is believed to be accurate based on the data available to us as of the date of SDS preparation. The information in this document applies to this specific product as supplied. It may not be appropriate for this product if the product is used in combination with other materials. The information in this document is not intended to constitute product performance information. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product. No statement shall be construed as an endorsement of any product or process. The recommended industrial hygiene and safe handling procedures are believed to be valid in the context of the intended use as described in product labeling. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. You are urged to obtain material safety data sheets for all products you buy, process, use or distribute, and are encouraged to advise those who may come in contact with such products of the information

Revised: November 3, 2016
 Supersedes: September 28, 2015
 POWER SERVICE DIESEL FUEL SUPPLEMENT +CETANE BOOST

contained therein. Regulatory requirements are subject to change and may differ between locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. No warranty or guarantee is expressed or implied with respect to this product, the accuracy and sufficiency of the data or recommendations herein, or the results to be obtained from the use of this product. IN NO EVENT SHALL POWER SERVICE PRODUCTS, INC. BE LIABLE FOR ANY LOSS, CLAIM, DAMAGE OR LIABILITY OF ANY KIND, WHICH MAY ARISE FROM OR IN CONNECTION WITH THE INFORMATION CONTAINED IN THIS DOCUMENT OR FROM THE USE, HANDLING OR STORAGE OF THE PRODUCT BY THE BUYER/USER, WHETHER DIRECT, INDIRECT, OR CONSEQUENTIAL, OR FOR ANY CLAIM BY ANY THIRD PARTY, BEYOND THE PURCHASE PRICE OR REPLACEMENT OF THE PRODUCT IN CONNECTION WITH WHICH SUCH LOSS, CLAIM, DAMAGE OR LIABILITY AROSE.

THE FOREGOING LIMITATIONS APPLY REGARDLESS OF THE CAUSES OR CIRCUMSTANCES GIVING RISE TO SUCH LOSS, CLAIM, DAMAGE OR LIABILITY, EVEN IF SUCH LOSS, CLAIM, DAMAGE, OR LIABILITY IS BASED ON NEGLIGENCE OR OTHER TORTS OR BREACH OF CONTRACT.

ISO 9001 CERTIFIED



130 W. Grandlake Blvd. • West Chicago, IL. 60185
630-293-7727 Office • 630-293-7765 FAX

FOR CHEMICAL EMERGENCY, SPILL, LEAK, EXPOSURE, ACCIDENT, CALL CHEMTREC, 1-800-424-9300

Material Safety and Data Sheet

I. PRODUCT IDENTIFICATION

PRODUCT NAME: Prosecutor

Chemical Family: Herbicide

Chemical Name/Synonyms: Not applicable

II. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	%(by/wt.)	CAS #	PEL/TLV
isopropylamine salt of Glyphosate	41	38641-94-0	Not Established
Other ingredients (trade secret composition)	59	NA	Not Applicable

III. HAZARDS IDENTIFICATION

SIGNAL WORD: WARNING



EMERGENCY OVERVIEW: Primary Route(s) of Entry: Eyes, Skin, Inhalation

POTENTIAL HEALTH EFFECTS: Causes moderate eye irritation. Harmful if swallowed or inhaled.

EYE: May cause temporary irritation.

SKIN: Not expected to produce significant adverse effects when recommended use instructions are followed.

INHALATION: Not expected to produce significant adverse effects when recommended use instructions are followed

MEDICAL CONDITIONS AGGRAVATED: Not applicable

POTENTIAL ENVIRONMENTAL HAZARDS: Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

IV. FIRST AID MEASURES

EYES: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation persists.

SKIN: Remove contaminated clothing. Wash affected skin with plenty of soap and water. Get medical attention if irritation persists or symptoms develop. Launder contaminated clothing before reuse.

INHALATION: Move person to fresh air. If respiratory symptoms persist, get medical attention.

INGESTION: Immediately offer water to drink. DO NOT induce vomiting unless directed by medical personnel. If symptoms occur, get medical attention.

NOTES TO MEDICAL DOCTOR: This product is not an inhibitor of cholinesterase. Treatment with atropine and oximes is not indicated.

V. FIRE FIGHTING MEASURES

Flash Point (Method Used): NA **Auto Ignition Temperature:** NA

Lower Explosion Limits: NA **Upper Explosion Limits:** NA

NFPA/HMIS Rating: Health: 2 Fire: 1 Reactivity: 1

EXTINGUISHING MEDIA:

- Alcohol Foam
 - x Foam
 - x Dry Chemical
 - x Water
 - Other
-

x CO₂

EXPLOSION HAZARDS: Reacts with galvanized steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use. Minimize use of water to prevent environmental contamination.

HAZARDOUS COMBUSTION PRODUCTS:

nitrogen oxides(NO_x), carbon monoxides(CO), and phosphorous oxides(P_xO_y)

VI. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: Small spills: Flush spill area with water. Large spills: Absorb in earth, sand or absorbent material. Dig up heavily contaminated soil. Collect in containers for disposal. Flush residues with small quantities of water. Minimize use of water to prevent environmental contamination. Keep out of drains, sewer, ditches and waterways. Minimize spread and notify authorities.

VII. HANDLING AND STORAGE

GENERAL PROCEDURES: Good industrial practice in housekeeping and personal hygiene should be followed.

Handling: When using, do not eat, drink or smoke. Wash hands thoroughly after handling or contact.

Thoroughly clean equipment after use. Do not contaminate drains, sewers and waterways when disposing of equipment rinse water. Emptied containers retain vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

Storage: Minimum storage temperature –15C/Maximum storage temperature 50C. Compatible materials for storage are stainless steel, aluminum, fiberglass, plastic, glass lining. Incompatible materials for storage are galvanized steel, unlined mild steel. **OTHER PRECAUTIONS:** Keep away from food, drink and animal feed. Keep only in original container. Partial crystallization may occur on prolonged storage below the minimum storage temperature. If frozen, place in warm room and shake frequently to put back into solution. Keep out of reach of children

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION



ENGINEERING CONTROLS: No special requirement when used as recommended.

PERSONAL PROTECTION EQUIPMENT:

EYES AND FACE: If there is significant potential for contact, wear chemical goggles.

RESPIRATORY: Not normally required.

SKIN PROTECTION: Long pants, long-sleeved shirt, socks and shoes.

Gloves: No special requirement when used as recommended. If repeated or prolonged contact, wear chemical resistant gloves.

PROTECTIVE CLOTHING: Follow manufacturers' instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

WORK HYGIENIC PRACTICES: Avoid contact with eyes, skin or clothing, Wash thoroughly with soap and water after handling.

COMMENTS: Practice good care and good safety precautions when handling this product.

IX. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: ND **SPECIFIC GRAVITY:** 1.69 @ 20C/15.6C

VAPOR DENSITY (air = 1): ND **VAPOR PRESSURE:** ND

MELTING POINT: ND

ODOR: Sweet **SOLUBILITY IN WATER:** Completely miscible

APPEARANCE: Amber liquid **pH:** 4.4 – 5.0 **PARTITION COEFFICIENT (log POW):**<0.00 (active ingredient)

X. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: NA

STABILITY: Stable.

POLYMERIZATION: Will not occur.

INCOMPATIBLE MATERIALS: Product reacts with galvanized steel or unlined steel to produce hydrogen gas that may form a highly combustible gas mixture which could explode.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition: nitrogen oxides, carbon monoxides and phosphorous oxides.

XI. TOXICOLOGICAL INFORMATION

EYE EFFECTS: (Rabbit): Slight irritation; FIFRA Category III

SKIN EFFECTS: (Rabbit): Essentially non- irritating.

FIFRA Category IV.

DERMAL LC50: (Rat): >5000mg/kg; practically non toxic; FIFRA Category IV

ORAL LD50: (Rat): >5000 mg/kg; practically non toxic FIFRA Category IV

INHALATION LC50: (Rat 4-hr): >2.9 mg/L; practically non toxic FIFRA Category IV

SENSITIZATION: (Guinea pig): 0%

ACUTE EFFECTS FROM OVEREXPOSURE: May cause eye irritation.

CHRONIC EFFECTS FROM OVEREXPOSURE: Not known

CARCINOGENICITY: Glyphosate is not a carcinogen

IARC: Not Listed **OSHA:** Not Listed Other: Not listed

NTP: Not Listed **OTHER:** Not Listed OSHA: Not listed

XII. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

ECOTOXICOLOGICAL INFORMATION: Data obtained on product and components are summarized below:

Aquatic Toxicity, fish:

Rainbow Trout 96-hr LC50 5.4 mg/L Moderately toxic

Bluegill Sunfish 96-hr LC50 7.3 mg/L Moderately toxic

Aquatic Toxicity, Invertebrates

Water flea (Daphnia) 48 hrs, static, EC50: 11mg/L

Avian Toxicity:

Bobwhite Quail 8-day LC50 >5620 ppm

Mallard Duck 5-day LC50 >5629 ppm

Arthropod Toxicity

Honey bee 48 hours, LD50:> 100ug/bee practically non toxic

Soil Organism Toxicity, invertebrates

Earthworm 14 days, LC50: >1m250 mg/kgk soil Practically non toxic

Bioaccumulation (N-(phosphonomethyl)glycine: {glyphosate}

Bluegill sunfish BCF: <1 No significant bioaccumulation expected

XIII. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Product: Keep out of drains, sewers, ditches and waterways. Recycle if appropriate facilities/equipment available. Burn in proper incinerator. Follow all federal, state and local regulations.

Container: Empty packaging completely. Ensure packing cannot be reused. Emptied containers retain vapor and product residue. Triple or pressure rinse empty containers. Do NOT reuse containers. Store for collection by approved waste disposal service. Recycle if appropriate facilities/equipment available. Do NOT contaminate water when disposing of rinse waters Follow all federal, state and local regulations.

XIV. TRANSPORTATION INFORMATION:

DOT Transportation:

Not Regulated

Marine Pollution #1:

NA

Proper Shipping Name:

Not Regulated

HM 181 Shipping Name:

Not Regulated

Hazard Class:

NA

ID NO.:

NA

U.S. Surface Freight Class: Tree or Weed Killing compounds, NOI, Density of 20 lbs. Or greater per cu.ft

Reportable Quantity (RQ):

NA

XV. REGULATORY INFORMATION – UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

SEC 311/312:

Y Immediate (Acute Health)

N Delayed (Chronic Health)

N Fire

N Sudden Release of Pressure

N Reactivity

SEC 302 (Extremely Hazardous Substance): NA

SEC 304 (Emergency Release Notification): NA

SEC 313 (Toxic Chemicals): NA

CERCLA RQ: NA

CAA RQ: NA

EPA Registration No.: 524-536-10404

NOTE: NA=Not Applicable; ND=Not Determined; NE=Not Established

Standard (29 CFR 1910.1200).

The information contained herein is based on available data. However, no warranty is expressed or implied regarding the

accuracy of this data or the results to be obtained from the use thereof; and you should make your investigation to determine safety for the use you contemplate. Mineral Masters makes no warranty of merchantability of fitness for a particular use, nor is there any other express or implied warranty except as may be specifically provided otherwise on product. Mineral Masters assumes no responsibility or liability for any incidental or consequential damages whether related to personal injury or property damage, to vendees, users or third parties, caused by the material and Mineral Masters responsibility is limited to replacement of, or repayment of, the purchase price for the material(s) with respect to which

any damages are claimed. All vendees or users assume all risk associated with the use of the material(s).

The information hereby provided is based on the supplier's knowledge at the time of issuing the data. It is provided for information only and does not amount to a guarantee and therefore no legal responsibility or liability will be accepted.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29
CFR1910.1200

RelaTech LiX 220 EP 2



SECTION 1. IDENTIFICATION

Product name : RelaTech LiX 220 EP 2

Manufacturer or supplier's details

Manufacturer/Supplier : **RelaDyne, LLC**
8280 Montgomery Road, Suite 101
Cincinnati, OH 45236
888-830-3156

Emergency telephone number

Spill Information : 800-535-5053
Health Information

Recommended use of the chemical and restrictions on use

Recommended use : Automotive and industrial grease.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Skin sensitisation : Category 1

Eye irritation : Category 2

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
May cause an allergic skin reaction.
Causes serious eye irritation.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
Wear protective gloves/ protective clothing/ eye protection/ face protection.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200



RelaTech LiX 220 EP 2

Response:

IF ON SKIN: Wash with plenty of water and soap. If skin irritation or rash occurs: Get medical advice/ attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.

Storage:

No precautionary phrases.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:
Contains Zinc Naphthenate

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Used oil may contain harmful impurities.
High-pressure injection under the skin may cause serious damage including local necrosis.
Not classified as flammable but will burn.
The classification of this material is based on OSHA HCS 2012 criteria.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : A lubricating grease containing highly-refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (% w/w)
Zinc naphthenate	Naphthenic acids, zinc salts	12001-85-3	1 - 2.49
Zinc dialkyldithiophosphate	Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	68457-79-4	< 2.49
Lithium complex thickener	dilithium tetraborate	12007-60-2	1 - 2.9
Alkyl thiadiazole	2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole	89347-09-1	< 3

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

RelaTech LiX 220 EP 2



SECTION 4. FIRST-AID MEASURES

- If inhaled : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
- In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
- When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Obtain medical attention even in the absence of apparent wounds.
- In case of eye contact : Immediately flush eye(s) with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Transport to the nearest medical facility for additional treatment.
- If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Most important symptoms and effects, both acute and delayed : Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.
- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Indication of any immediate medical attention and special treatment needed : Treat symptomatically.

High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

RelaTech LiX 220 EP 2



SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.
- Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Methods and materials for containment and cleaning up : Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.
- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200



RelaTech LiX 220 EP 2

- Advice on safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Avoidance of contact : Strong oxidising agents.
- Further information on storage stability : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.

Store at ambient temperature.
- Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.
- Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA (Mist)	5 mg/m ³	OSHA Z-1
Oil mist, mineral		TWA (Inhalable particulate matter)	5 mg/m ³	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

RelaTech LiX 220 EP 2



Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany
<http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Due to the product's semi-solid consistency, generation of mists and dusts is unlikely to occur.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200



RelaTech LiX 220 EP 2

Select a filter suitable for the combination of organic gases and vapours and particles [Type A/Type P boiling point >65°C (149°F)].

Hand protection Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection

: Wear goggles for use against liquids and gas, combined with face shield.
Wear full face shield if splashes are likely to occur.
If a local risk assessment deems it so then chemical splash goggles may not be required and safety glasses may provide adequate eye protection.

Skin and body protection

: Wear chemical resistant gloves/gauntlets and boots. Where risk of splashing, also wear an apron.

Protective measures

: Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Thermal hazards

: Not applicable

Environmental exposure controls

General advice

: Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Section 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

RelaTech LiX 220 EP 2



Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Semi-solid at ambient temperature.
Colour	:	red
Odour	:	Slight hydrocarbon
Odour Threshold	:	Data not available
pH	:	Not applicable
Dropping point	:	240 °C / 464 °F Method: IP 396
Melting / freezing point	:	Not applicable
Initial boiling point and boiling range	:	Data not available
Flash point	:	Not applicable
Evaporation rate	:	Data not available
Flammability (solid, gas)	:	Data not available
Upper explosion limit / upper flammability limit	:	Typical 10 %(V)
Lower explosion limit / Lower flammability limit	:	Typical 1 %(V)
Vapour pressure	:	< 0.5 Pa (20 °C / 68 °F) estimated value(s)
Relative vapour density	:	> 1 estimated value(s)
Relative density	:	1.000 (15 °C / 59 °F)
Density	:	1,000 kg/m ³ (15.0 °C / 59.0 °F) Method: Unspecified
Solubility(ies)	:	
Water solubility	:	negligible
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	log Pow: > 6 (based on information on similar products)

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200



RelaTech LiX 220 EP 2

Auto-ignition temperature	:	> 320 °C / 608 °F
Decomposition temperature	:	Data not available
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not classified
Oxidizing properties	:	Data not available
Conductivity	:	This material is not expected to be a static accumulator.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	:	Stable.
Possibility of hazardous reactions	:	Reacts with strong oxidising agents.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Strong oxidising agents.
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	:	Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
----------------------	---	---

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (rat): > 5,000 mg/kg Remarks: Low toxicity: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Remarks: Based on available data, the classification criteria are not met.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200



RelaTech LiX 220 EP 2

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Low toxicity:
Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Product:

Remarks: Slightly irritating to skin., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis., Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Product:

Remarks: Risk of serious damage to eyes.

Components:

Zinc dialkyldithiophosphate:

Remarks: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Non mutagenic, Based on available data, the classification criteria are not met.

Carcinogenicity

Product:

Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

RelaTech LiX 220 EP 2



NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:

Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are not met.

STOT - single exposure

Product:

Remarks: Based on available data, the classification criteria are not met.

STOT - repeated exposure

Product:

Remarks: Based on available data, the classification criteria are not met.

Aspiration toxicity

Product:

Not an aspiration hazard.

Further information

Product:

Remarks: Used grease may contain harmful impurities that have accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment on disposal., ALL used grease should be handled with caution and skin contact avoided as far as possible.

Remarks: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment

: Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

RelaTech LiX 220 EP 2



Ecotoxicity

Product:

- Toxicity to fish (Acute toxicity) : Remarks: LL/EL/IL50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.
- Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: LL/EL/IL50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.
- Toxicity to algae (Acute toxicity) : Remarks: LL/EL/IL50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.
- Toxicity to fish (Chronic toxicity) : Remarks: Data not available
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available
- Toxicity to microorganisms (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

- Biodegradability : Remarks: Not readily biodegradable.
Major constituents are inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

- Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

- Mobility : Remarks: Semi-solid under most environmental conditions.
If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

RelaTech LiX 220 EP 2



Other adverse effects

Product:

Additional ecological information : Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential. Product is a mixture of non-volatile components, which will not be released to air in any significant quantities under normal conditions of use.

Poorly soluble mixture.
Causes physical fouling of aquatic organisms.

Mineral oil does not cause chronic toxicity to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local legislation

Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulations

IATA-DGR

Not regulated as a dangerous good

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200



RelaTech LiX 220 EP 2

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied. MARPOL Annex 1 rules apply for bulk shipments by sea.

Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

*: This material does not contain any components with a CERCLA RQ., RelaDyne classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Zinc dialkyldithiophosphate	68457-79-4	>= 1 - < 5 %
Zinc naphthenate	12001-85-3	>= 0.1 - < 1 %
Zinc-2-ethyl hexanoate	136-53-8	>= 0.1 - < 1 %

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

US State Regulations

Pennsylvania Right To Know

Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Zinc dialkyldithiophosphate	68457-79-4
Zinc-2-ethyl hexanoate	136-53-8
Zinc naphthenate	12001-85-3

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

RelaTech LiX 220 EP 2



California List of Hazardous Substances

Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Zinc dialkyldithiophosphate	68457-79-4

Other regulations:

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

The components of this product are reported in the following inventories:

EINECS	: All components listed or polymer exempt.
TSCA	: All components listed.
DSL	: All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 1, 1, 0

Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	: 8-hour, time-weighted average
OSHA Z-1 / TWA	: 8-hour time weighted average
Abbreviations and Acronyms	: The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut für Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

RelaTech LiX 220 EP 2



gy Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial
Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances
Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and
Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the
determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of
Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Ob-
served Effect Level
OE_HP V = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical
Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of
Chemicals
RID = Regulations Relating to International Carriage of Dan-
gerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Sources of key data used to compile the Safety Data Sheet : The quoted data are from, but not limited to, one or more sources of information

Revision Date : 02/25/2020

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

RelaTech LiX 220 EP 2



The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

RelaTECH Premium AW 32 Hydraulic Oil

Product Use: Hydraulic Oil
Product Number(s): 951470032PR
Company Identification
RelaDyne, LLC.
9395 Kenwood Rd., Suite 104
Blue Ash, OH
888-830-3156
www.reladyne.com

Transportation Emergency Response
INFOTRAC 800-535-5053

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Unusual Fire Hazards: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent

further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection

from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

- Color:** Yellow
- Physical State:** Liquid
- Odor:** Petroleum odor
- Odor Threshold:** No data available
- pH:** Not Applicable
- Vapor Pressure:** <0.01 mmHg @ 37.8 °C (100 °F)
- Vapor Density (Air = 1):** >1
- Initial Boiling Point:** 315°C (599°F)
- Solubility:** Soluble in hydrocarbon solvents; insoluble in water.
- Freezing Point:** Not Applicable
- Density:** 0.87 kg/l @ 15°C (59°F) (Typical)
- Viscosity:** 28.8 mm2/s @ 40°C (104°F) Minimum
- Decomposition temperature:** No data available
- Octanol/Water Partition Coefficient:** No data available

FLAMMABLE PROPERTIES:

- Flammability (solid, gas):** No Data Available
- Flashpoint:** (Cleveland Open Cup) 170 °C (338 °F) Minimum
- Autoignition:** No data available
- Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

- Reactivity:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
- Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
- Incompatibility With Other Materials:** Not applicable
- Hazardous Decomposition Products:** None known (None expected)
- Hazardous Polymerization:** Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65

01-2B=IARC Group 2B

05=MA RTK

02=NTP Carcinogen

06=NJ RTK

07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Hydraulic oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1

Revision Date: APRIL 5, 2016

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

This Safety Data Sheet is prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012. The information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

RelaTECH Premium AW 46 Hydraulic Oil

Product Use: Hydraulic Oil
Product Number(s): 951470046PR
Company Identification
RelaDyne, LLC.
9395 Kenwood Rd., Suite 104
Blue Ash, OH
888-830-3156
www.reladyne.com

Transportation Emergency Response
INFOTRAC 800-535-5053

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Unusual Fire Hazards: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent

further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection

from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

- Color:** Yellow
- Physical State:** Liquid
- Odor:** Petroleum odor
- Odor Threshold:** No data available
- pH:** Not Applicable
- Vapor Pressure:** <0.01 mmHg @ 37.8 °C (100 °F)
- Vapor Density (Air = 1):** >1
- Initial Boiling Point:** 315°C (599°F)
- Solubility:** Soluble in hydrocarbon solvents; insoluble in water.
- Freezing Point:** Not Applicable
- Density:** 0.87 kg/l @ 15°C (59°F) (Typical)
- Viscosity:** 28.8 mm²/s @ 40°C (104°F) Minimum
- Decomposition temperature:** No data available
- Octanol/Water Partition Coefficient:** No data available

FLAMMABLE PROPERTIES:

- Flammability (solid, gas):** No Data Available
- Flashpoint:** (Cleveland Open Cup) 170 °C (338 °F) Minimum
- Autoignition:** No data available
- Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

- Reactivity:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
- Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
- Incompatibility With Other Materials:** Not applicable
- Hazardous Decomposition Products:** None known (None expected)
- Hazardous Polymerization:** Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65

01-2B=IARC Group 2B
02=NTP Carcinogen

05=MA RTK
06=NJ RTK
07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Hydraulic oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1
Revision Date: APRIL 5, 2016

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

This Safety Data Sheet is prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012. The information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet

according to OSHA Hazard Communication
29 CFR Part 1910.1200



SECTION 1. Identification

SDS Product #: 99018MS10000810

Product Name: Mineral Spirits 66 1Percent

Supplied by: RelaDyne, LLC
8280 Montgomery Road, Suite 101
Cincinnati, OH 45236
888-830-3156
www.reladyne.com

24 Hour Emergency:
INFOTRAC: 1-800-535-5053

Outside U.S. and Canada
Infotrac: 352-323-3500

NOTE: INFOTRAC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals

SECTION 2. Hazard(s) Identification

*** EMERGENCY OVERVIEW ***: Flammable liquid and vapor. May be fatal if inhaled. May be fatal if swallowed.

GHS Classification

Asp. Tox. 1, Eye Irrit. 2B, Flam. Liq. 3, STOT SE 3 NE, Skin Irrit. 2

Symbol(s) of Product



Signal Word

Danger

GHS HAZARD STATEMENTS

Flammable Liquid, category 3	H226	Flammable liquid and vapor.
Aspiration Hazard, category 1	H304	May be fatal if swallowed and enters airways.
Skin Irritation, category 2	H315	Causes skin irritation.
STOT, single exposure, category 3, NE	H336	May cause drowsiness or dizziness.
Eye Irritation, category 2B	H320	Causes eye irritation

GHS PRECAUTIONARY STATEMENTS

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician
P302+P352	IF ON SKIN: Wash with plenty of water
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician if you feel unwell.
P321	Specific treatment (see first aid section on this label).
P331	Do NOT induce vomiting.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use appropriate method to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3. Composition/Information on Ingredients

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Wt. %</u>	<u>GHS Symbols</u>	<u>GHS Statements</u>
Aliphatic hydrocarbon	64742-47-8	75-100	GHS02-GHS07-GHS08	H226-304-315-320-336

The text for GHS Hazard Statements shown above (if any) is given in the "Other information" Section.

SECTION 4. First-Aid Measures



FIRST AID - EYE CONTACT: Immediately flush eyes with water. Flush eyes with water for a minimum of 15 minutes, occasionally lifting and lowering upper lids. Get medical attention promptly. Remove contact lenses if worn.

FIRST AID - SKIN CONTACT: Remove contaminated clothing. Wash skin with soap and water. Get medical attention. Wash clothing separately and clean shoes before reuse.

FIRST AID - INHALATION: Rescuers should put on appropriate protective gear. Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm. Get immediate medical attention. To prevent aspiration, keep head below knees.

FIRST AID - INGESTION: Do not induce vomiting. Do not give liquids. Obtain emergency medical attention.

SECTION 5. Fire-Fighting Measures

UNUSUAL FIRE AND EXPLOSION HAZARDS: Flammable liquid and vapor. Can form explosive mixtures at temperatures at or above the flashpoint. Vapors/dust may form explosive mixture with air. Vapors can travel to a source of ignition and flash back. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. Also, do not reuse container without commercial cleaning or reconditioning.

SPECIAL FIREFIGHTING PROCEDURES: As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear. Evacuate all unnecessary personnel. Shut down motors, pumps, electrical service and eliminate all sources of ignition. Avoid use of solid water streams. Water spray to cool containers or protect personnel. Use with caution. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

EXTINGUISHING MEDIA: Carbon Dioxide, Dry Chemical, Foam, Water Fog

SECTION 6. Accidental Release Measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear appropriate personal protective equipment. (See Exposure Controls / Personal Protection Section.) Eliminate all ignition sources. Prevent additional discharge of material if able to do so safely. Do not touch or walk through spilled material. Avoid runoff into storm sewers and ditches which lead to waterways. Ventilate spill area. Stay upwind of spill. A vapor suppressing foam may be used to reduce vapors. Collect spilled materials for disposal. Use only non-combustible material for clean-up. Use clean, non-sparking tools to collect absorbed materials. Remove from surface by skimming or with suitable absorbents. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Recover by pumping (use an explosion proof or hand pump).

SECTION 7. Handling and Storage



HANDLING: Use only in a well ventilated area. Avoid breathing vapor, fumes or mist. Avoid contact with eyes, skin, and clothing. When transferring, follow proper grounding procedures. Use spark-resistant tools. Do not load into compartments adjacent to heated cargo. Use explosion proof equipment. Always open containers slowly to allow any excess pressure to vent. Follow all MSDS/label precautions even after containers are emptied because they may retain product residues.

STORAGE: Keep away from heat, sparks, and flame. Containers can build up pressure if exposed to heat (fire). Store containers in a cool, well ventilated place. Keep container closed when not in use. Protect from direct sunlight. Static Discharge, materials can accumulate static charges which can cause an incendiary electrical discharge. Material is a static accumulator which has the potential of forming ignitable vapor-air mixtures in storage tanks.

SECTION 8. Exposure Controls/Personal Protection

Ingredients with Occupational Exposure Limits

<u>Chemical Name</u>	<u>ACGIH TLV-TWA</u>	<u>ACGIH-TLV STEL</u>	<u>OSHA PEL-TWA</u>	<u>OSHA PEL-CEILING</u>
Aliphatic hydrocarbon	100 ppm	N.D.	500 ppm	N.D.

Personal Protection



RESPIRATORY PROTECTION: Wear a MSHA/NIOSH approved (or equivalent) full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.



SKIN PROTECTION: Wear impervious gloves to prevent contact with the skin. Wear long sleeves when contact is likely to occur. Wear protective gear as needed - apron, suit, boots.



EYE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield.



OTHER PROTECTIVE EQUIPMENT: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.



HYGENIC PRACTICES: Do not eat, drink, or smoke in areas where this material is used. Avoid breathing vapors. Remove contaminated clothing and wash before reuse. Wash thoroughly after handling. Wash hands before eating.

SECTION 9. Physical and Chemical Properties

Appearance:	Clear, transparent liquid	Physical State:	Liquid
Odor:	Typical	Odor Threshold:	N.D.
Density, g/cm³:	0.782	pH:	N.D.
Freeze Point, °F:	N.D.	Viscosity:	N.D.
Solubility in Water:	Insoluble	Explosive Limits, vol%:	0.8 - 6.0
Boiling Range, °F:	318 - 386	Flash Point, °F:	104
Evaporation Rate:	0.21 (n-butyl acetate=1)	Auto-ignition Temp., °F:	N.D.
Vapor Density:	5 (air=1)	Vapor Pressure:	N.D.

(See "Other information" Section for abbreviation legend)

SECTION 10. Stability and Reactivity

STABILITY: No Information

CONDITIONS TO AVOID: Avoid impact, friction, heat, sparks, flame and source of ignition.

INCOMPATIBILITY: Keep separate from alkalis. Prevent contact with strong oxidizing agents. Keep away from acids.

HAZARDOUS DECOMPOSITION PRODUCTS: During combustion carbon monoxide may be formed. During combustion carbon dioxide may be formed.

HAZARDOUS POLYMERIZATION: No Information

SECTION 11. Toxicological Information



Information on Toxicological Effects

EFFECTS OF OVEREXPOSURE - INHALATION: Vapors can cause irritation of the respiratory tract. High concentrations can cause headache, nausea, weakness, lightheadedness, and stupor (CNS depression).

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Contact with skin may cause mild irritation. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash). Personnel with pre-existing skin disorders should avoid contact with this product.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: May cause eye irritation.

EFFECTS OF OVEREXPOSURE - INGESTION: This material may be harmful or fatal if swallowed. Harmful or fatal if liquid is aspirated into lungs. Irritating to mouth, throat, and stomach. Can be readily absorbed by the stomach and intestinal tract. Symptoms include burning sensation of the mouth and esophagus, nausea, vomiting, diarrhea, dizziness, staggering gait, drowsiness, loss of consciousness and delirium as well as additional central nervous system effects.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: Possible brain damage from overexposure. Overexposure may cause nervous system damage. Chronic effects of ingestion and subsequent aspiration into the lungs may cause pneumatocele (lung cavity) formation and chronic lung dysfunction. Significant exposure to this chemical may adversely affect people with chronic disease of the respiratory system, central nervous system, kidney, liver, skin, and/or eyes.

Primary Route(s) of Entry: Eye Contact, Ingestion, Inhalation, Skin Contact

Acute Toxicity Values

The acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Name according to EEC</u>	<u>Oral LD50, mg/kg</u>	<u>Dermal LD50, mg/kg</u>	<u>Vapor LC50, mg/L</u>
64742-47-8	Aliphatic hydrocarbon	>5,000	>2,000	>20.0

SECTION 12. Ecological Information

ECOLOGICAL INFORMATION: No Information

SECTION 13. Disposal Considerations



For more guidance and information contact our Waste Services Division at (262) 658-4000.

Always dispose of any waste in accordance with all local, state, and federal regulations.

DISPOSAL METHOD: Dispose of waste in accordance with all local, state and federal regulations.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASE OR SPILLED: Wear appropriate personal protective equipment. (See Exposure Controls / Personal Protection Section.) Eliminate all ignition sources. Prevent additional discharge of material if able to do so safely. Do not touch or walk through spilled material. Avoid runoff into storm sewers and ditches which lead to waterways. Ventilate spill area. Stay upwind of spill. A vapor suppressing foam may be used to reduce vapors. Collect spilled materials for disposal. Use only non-combustible material for clean-up. Use clean, non-sparking tools to collect absorbed materials. Remove from surface by skimming or with suitable absorbents. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Recover by pumping (use an explosion proof or hand pump).

SECTION 14. Transport Information

DOT Proper Shipping Name:

Petroleum distillates, n.o.s. (naphtha solvent) - Combustible Liquid

Packing Group:

III

DOT Hazard Class:

No Information

Hazard SubClass:

No Information

DOT UN/NA Number:

UN1268

Resp. Guide Page:

128

SECTION 15. Regulatory Information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

No Sara 313 components exist in this product.

TOXIC SUBSTANCES CONTROL ACT:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA components exist in this product.

U.S. State Regulations:

NEW JERSEY RIGHT-TO-KNOW:

The following materials are non-hazardous, but are among the top five components in this product.

No NJ Right-To-Know components exist in this product.

PENNSYLVANIA RIGHT-TO-KNOW

The following non-hazardous ingredients are present in the product are at or greater than 3%.

No PA Right-To-Know components exist in this product.

CALIFORNIA PROPOSITION 65 CARCINOGENS

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

No Proposition 65 Carcinogens exist in this product.

CALIFORNIA PROPOSITION 65 REPRODUCTIVE TOXINS

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

No Proposition 65 Reproductive Toxins exist in this product.

International Regulations: As follows -

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

WHMIS Class:

No Information

SECTION 16. Other Information

Revision Date: 4/06/2017 Supersedes Date: 3/13/2015

Datasheet produced by: EH&S - Regulatory Department

HMIS Ratings:

Health:	1	Flammability:	2	Reactivity:	0	Personal Protection:	X
---------	---	---------------	---	-------------	---	----------------------	---

Volatile Organic Compounds, gr/ltr: 100

DISCLAIMER: THE VOLATILE ORGANIC COMPOUND (VOC) CONTENT REPORTED HEREIN, IF ANY, IS BASED ON A MATERIAL VOC CALCULATION. NOTE THAT SEVERAL METHODS ARE USED FOR CALCULATING VOC CONTENT AND THAT STANDARDS/ REQUIREMENTS REGARDING VOC CONTENT VARY BY LOCATION/JURISDICTION. ACCORDINGLY, EMCO MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, REGARDING THIS MATERIAL'S COMPLIANCE WITH VOC STANDARDS/ REQUIREMENTS APPLICABLE IN LOCATIONS/JURISDICTIONS WHERE THIS MATERIAL MAY BE SOLD OR USED.

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H226	Flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H320	Causes eye irritation
H336	May cause drowsiness or dizziness.

Icons for GHS Pictograms shown in Section 3 describing each ingredient:

GHS02



GHS07



GHS08



Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined, N.I. - No Information

This Safety Data Sheet is prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012. The information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

SECTION 1. IDENTIFICATION

Product name : Shell Caprinus XR 40

Product code : 001A0897

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285

Customer Service :

Emergency telephone number

Spill Information : 877-504-9351

Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Engine oil.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Based on available data this substance / mixture does not meet the classification criteria.

GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

Used oil may contain harmful impurities.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (%)
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *		Not Assigned	0 - 90

SECTION 4. FIRST-AID MEASURES

- General advice : Not expected to be a health hazard when used under normal conditions.
- If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.
- In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.
- In case of eye contact : Flush eye with copious quantities of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
If persistent irritation occurs, obtain medical attention.
- If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas.
Ingestion may result in nausea, vomiting and/or diarrhoea.
- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

incident, injury and surroundings.

Immediate medical attention, special treatment : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.
- Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material.
Reclaim liquid directly or in an absorbent.
Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Precautions for safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Product Transfer : This material has the potential to be a static accumulator.
Proper grounding and bonding procedures should be used during all bulk transfer operations.

Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.

Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m ³	US. ACGIH Threshold Limit Values
		(Mist)	5 mg/m ³	OSHA_TRA

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

				NS
		TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures

- : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.

Thermal hazards : Not applicable

Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid at room temperature.

Colour : amber

Odour : Slight hydrocarbon

Odour Threshold : Data not available

pH : Not applicable

pour point : -9 °C / 16 °F Method: IP 15

Initial boiling point and boiling range : > 280 °C / 536 °F estimated value(s)

Flash point : 260 °C / 500 °F
Method: IP 36

Evaporation rate : Data not available

Flammability (solid, gas) : Data not available

Upper explosion limit : Typical 10 %(V)

Lower explosion limit : Typical 1 %(V)

Vapour pressure : < 0.5 Pa (20 °C / 68 °F)
estimated value(s)

Relative vapour density : > 1 estimated value(s)

Relative density : 0.908 (15 °C / 59 °F)

Density : 908 kg/m³ (15.0 °C / 59.0 °F)
Method: IP 365

Solubility(ies)
Water solubility : negligible

Solubility in other solvents : Data not available

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

Partition coefficient: n-octanol/water	:	Pow: > 6(based on information on similar products)
Auto-ignition temperature	:	> 320 °C / 608 °F
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	150 mm ² /s (40.0 °C / 104.0 °F) Method: IP 71
		15.1 mm ² /s (100 °C / 212 °F) Method: IP 71
Explosive properties	:	Not classified
Oxidizing properties	:	Data not available
Conductivity	:	This material is not expected to be a static accumulator.
Decomposition temperature	:	Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	:	Stable.
Possibility of hazardous reactions	:	Reacts with strong oxidising agents.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Strong oxidising agents.
Hazardous decomposition products	:	Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	:	Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
----------------------	---	---

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

Acute toxicity

Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Acute inhalation toxicity : Remarks: Not considered to be an inhalation hazard under normal conditions of use.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

gen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:

Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Continuous contact with used engine oils has caused skin cancer in animal tests.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment

: Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable.
Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility : Remarks: Liquid under most environmental conditions.
If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.
Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local legislation
Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

Pennsylvania Right To Know

Residual Oils (Petroleum) Solvent Dewaxed 64742-62-7
Distillates (petroleum), solvent-refined heavy paraffinic 64741-88-4

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
WARNING! This product contains a chemical known to the State of California to cause cancer.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

TSCA : All components listed.

DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists

ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances

ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council

CLP = Classification Packaging and Labelling

COC = Cleveland Open-Cup

DIN = Deutsches Institut für Normung

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

DSL = Canada Domestic Substance List

EC = European Commission

EC50 = Effective Concentration fifty

ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals

ECHA = European Chemicals Agency

EINECS = The European Inventory of Existing Commercial Chemical Substances

EL50 = Effective Loading fifty

ENCS = Japanese Existing and New Chemical Substances Inventory

EWC = European Waste Code

GHS = Globally Harmonised System of Classification and Labelling of Chemicals

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IC50 = Inhibitory Concentration fifty

IL50 = Inhibitory Level fifty

IMDG = International Maritime Dangerous Goods

INV = Chinese Chemicals Inventory

IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 6.4

Revision Date: 05/24/2017

Print Date: 05/25/2017

KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of
Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Ob-
served Effect Level
OE_HP = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical
Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of
Chemicals
RID = Regulations Relating to International Carriage of Dan-
gerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID data base, EC 1272 regulation, etc).

Revision Date : 05/24/2017

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

SECTION 1. IDENTIFICATION

Product name : Shell Gadus S3 V220C 1

Product code : 001D8424

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
P.O. Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Automotive and industrial grease.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Chronic aquatic toxicity : Category 3

GHS Label element

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P273 Avoid release to the environment.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Used grease may contain harmful impurities.

High-pressure injection under the skin may cause serious damage including local necrosis.

Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : A lubricating grease containing highly-refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

Hazardous components

Chemical Name	Synonyms	CAS-No.	Concentration (%)
Trimethyldihydroquinoline, homopolymer	1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	26780-96-1	1 - 3
Alkyl thiadiazole		91648-65-6	1 - 3
Zinc dialkyl dithiophosphate	Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	68649-42-3	1 - 2.4
Zinc naphthenate		12001-85-3	0.1 - 0.9

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.

Obtain medical attention even in the absence of apparent wounds.

In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

- Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.
- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Immediate medical attention, special treatment : Treat symptomatically.
- High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.
- Specific hazards during fire-fighting : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emer- : Avoid contact with skin and eyes.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

gency procedures

Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Methods and materials for containment and cleaning up : Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Precautions for safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.

Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m3	US. ACGIH Threshold Limit Values
		(Mist)	5 mg/m3	OSHA_TRANS

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures

- : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

Practice good housekeeping.

Due to the product's semi-solid consistency, generation of mists and dusts is unlikely to occur.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.

Protective measures : Personal protective equipment (PPE) should meet recom-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

mended national standards. Check with PPE suppliers.

Environmental exposure controls

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Semi-solid at ambient temperature.

Colour : red

Odour : Slight hydrocarbon

Odour Threshold : Data not available

pH : Not applicable

Drop point : 240 °C / 464 °F Method: IP 396

Initial boiling point and boiling range : Data not available

Flash point : ≥ 250 °C / ≥ 482 °F
Method: ASTM D92

Evaporation rate : Data not available

Flammability (solid, gas) : Data not available

Upper explosion limit : Typical 10 %(V)

Lower explosion limit : Typical 1 %(V)

Vapour pressure : < 0.5 Pa (20 °C / 68 °F)
estimated value(s)

Relative vapour density : > 1 estimated value(s)

Relative density : 0.900 (15 °C / 59 °F)

Density : 900 kg/m³ (15.0 °C / 59.0 °F)
Method: Unspecified

Solubility(ies)

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: > 6(based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F
Viscosity	
Viscosity, dynamic	: Data not available
Viscosity, kinematic	: Not applicable
Conductivity	: This material is not expected to be a static accumulator.
Decomposition temperature	: Data not available

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	: Stable.
Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition products	: Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
----------------------	---

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	: LD50 (rat): > 5,000 mg/kg Remarks: Expected to be of low toxicity:
Acute inhalation toxicity	: Remarks: Not considered to be an inhalation hazard under normal conditions of use.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

Reproductive toxicity

Product:

:
Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used grease may contain harmful impurities that have accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment on disposal., ALL used grease should be handled with caution and skin contact avoided as far as possible.

Remarks: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) :
Remarks: Expected to be harmful:
LL/EL/IL50 10-100 mg/l

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be harmful: LL/EL/IL50 10-100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be harmful: LL/EL/IL50 10-100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

Components:

Zinc naphthenate:

M-Factor (Acute aquatic toxicity) : 1

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility : Remarks: Semi-solid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemi-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

cal ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to
aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses
- Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.
Disposal should be in accordance with applicable regional, national, and local laws and regulations.
- Local legislation
Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulation

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Zinc dialkyl dithiophosphate	68649-42-3	1.6 %
------------------------------	------------	-------

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

Pennsylvania Right To Know

Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
---	------------

New Jersey Right To Know

Zinc dialkyl dithiophosphate	68649-42-3
------------------------------	------------

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

Due to the conversion of this product to GHS classification and labelling, there has been a significant change to the nature of the information presented in chapter 2.

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut für Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 2.0

Revision Date: 05/21/2015

Print Date: 05/22/2015

LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of
Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Ob-
served Effect Level
OE_HPVS = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical
Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of
Chemicals
RID = Regulations Relating to International Carriage of Dan-
gerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Revision Date : 05/21/2015

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

SECTION 1. IDENTIFICATION

Product name : Shell Gadus S3 V220C 2

Product code : 001D8425

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Automotive and industrial grease.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Chronic aquatic toxicity : Category 3

GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P273 Avoid release to the environment.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Used grease may contain harmful impurities.

High-pressure injection under the skin may cause serious damage including local necrosis.

Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : A lubricating grease containing highly-refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (%)
Alkyl thiadiazole		89347-09-1	< 3
Trimethyldihydroquinoline, homopolymer	1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	26780-96-1	< 3
Zinc dialkyldithiophosphate	Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	68457-79-4	< 2.4
Zinc naphthenate	Naphthenic acids, zinc salts	12001-85-3	< 2.4

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.
Obtain medical attention even in the absence of apparent wounds.

In case of eye contact : Flush eye with copious quantities of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
If persistent irritation occurs, obtain medical attention.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

- If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.
- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Immediate medical attention, special treatment : Treat symptomatically.
- High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.
- Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Methods and materials for containment and cleaning up : Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.
- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Precautions for safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Avoidance of contact : Strong oxidising agents.
- Storage**
- Other data : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.

Store at ambient temperature.
- Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.
- Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m ³	US. ACGIH Threshold Limit Values
		(Mist)	5 mg/m ³	OSHA_TRANS
		TWA (Mist)	5 mg/m ³	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Due to the product's semi-solid consistency, generation of mists and dusts is unlikely to occur.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

- depending on the glove make and model.
- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.
- Thermal hazards : Not applicable
- Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

- General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Semi-solid at ambient temperature.
- Colour : red
- Odour : Slight hydrocarbon
- Odour Threshold : Data not available
- pH : Not applicable
- Drop point : 240 °C / 464 °F Method: IP 396
- Initial boiling point and boiling range : Data not available
- Flash point : Not applicable
- Evaporation rate : Data not available
- Flammability (solid, gas) : Data not available
- Upper explosion limit : Typical 10 %(V)
- Lower explosion limit : Typical 1 %(V)
- Vapour pressure : < 0.5 Pa (20 °C / 68 °F)

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

	estimated value(s)
Relative vapour density	: > 1 estimated value(s)
Relative density	: 1.000 (15 °C / 59 °F)
Density	: 1,000 kg/m ³ (15.0 °C / 59.0 °F) Method: Unspecified
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: > 6 (based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F
Viscosity	
Viscosity, dynamic	: Data not available
Viscosity, kinematic	: Not applicable
Explosive properties	: Not classified
Oxidizing properties	: Data not available
Conductivity	: This material is not expected to be a static accumulator.
Decomposition temperature	: Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	: Stable.
Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition products	: Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

Basis for assessment : Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Acute inhalation toxicity : Remarks: Not considered to be an inhalation hazard under normal conditions of use.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Components:

Zinc dialkyldithiophosphate:

Remarks: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:

Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used grease may contain harmful impurities that have accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment on disposal., ALL used grease should be handled with caution and skin contact avoided as far as possible.

Remarks: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). (LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be harmful:
LL/EL/IL50 10-100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be harmful:
LL/EL/IL50 10-100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be harmful:
LL/EL/IL50 10-100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

Components:

Zinc naphthenate:

M-Factor (Acute aquatic toxicity) : 1

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable.
Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility : Remarks: Semi-solid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.

May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local legislation
Remarks

: Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Zinc dialkyl dithiophosphate	68649-42-3	1.6 %
------------------------------	------------	-------

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

Pennsylvania Right To Know

Distillates (petroleum), solvent-dewaxed 64742-65-0
heavy paraffinic

New Jersey Right To Know

Zinc dialkyl dithiophosphate 68649-42-3

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.
TSCA : All components listed.
DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

Due to the conversion of this product to GHS classification and labelling, there has been a significant change to the nature of the information presented in chapter 2.

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists

ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances

ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council

CLP = Classification Packaging and Labelling

COC = Cleveland Open-Cup

DIN = Deutsches Institut für Normung

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

DSL = Canada Domestic Substance List

EC = European Commission

EC50 = Effective Concentration fifty

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 03/30/2017

Print Date: 03/31/2017

ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HP V = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Revision Date : 03/30/2017

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

SECTION 1. IDENTIFICATION

Product name : Shell Gadus S5 V460 1.5

Product code : 001D8441

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Automotive and industrial grease.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Chronic aquatic toxicity : Category 3

GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P273 Avoid release to the environment.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Used grease may contain harmful impurities.
High-pressure injection under the skin may cause serious damage including local necrosis.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : A lubricating grease containing polyolefins and additives.

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (%)
Zinc dialkyl dithiophosphate	Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	68649-42-3	1 - 3
Calcium alkaryl sulphonate		Not Assigned	0.10 - 0.90
Alkyl amine		68955-53-3	0.01 - 0.099

SECTION 4. FIRST-AID MEASURES

- General advice : Not expected to be a health hazard when used under normal conditions.
- If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.
- In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.
- When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.
Obtain medical attention even in the absence of apparent wounds.
- In case of eye contact : Flush eye with copious quantities of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
If persistent irritation occurs, obtain medical attention.
- If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas.
Ingestion may result in nausea, vomiting and/or diarrhoea.
Local necrosis is evidenced by delayed onset of pain and

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

tissue damage a few hours following injection.

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Immediate medical attention, special treatment : Treat symptomatically.

High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : Do not use water in a jet.

Specific hazards during fire-fighting : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.

Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

rivers by using sand, earth, or other appropriate barriers.

Methods and materials for containment and cleaning up : Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Precautions for safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.

Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Biological occupational exposure limits

No biological limit allocated.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Due to the product's semi-solid consistency, generation of mists and dusts is unlikely to occur.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection

: If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection

: Skin protection is not ordinarily required beyond standard work clothes. It is good practice to wear chemical resistant gloves.

Thermal hazards

: Not applicable

Protective measures

: Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

General advice

: Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being dis-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

charged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Semi-solid at ambient temperature.
Colour	: light brown
Odour	: Slight hydrocarbon
Odour Threshold	: Data not available
pH	: Not applicable
Drop point	: 260 °C / 500 °F Method: IP 396
Initial boiling point and boiling range	: Data not available
Flash point	: Not applicable
Evaporation rate	: Data not available
Flammability (solid, gas)	: Data not available
Upper explosion limit	: Typical 10 %(V)
Lower explosion limit	: Typical 1 %(V)
Vapour pressure	: < 0.5 Pa (20 °C / 68 °F) estimated value(s)
Relative vapour density	: > 1 estimated value(s)
Relative density	: 0.900 (15 °C / 59 °F)
Density	: 900 kg/m ³ (15.0 °C / 59.0 °F) Method: Unspecified
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: > 6 (based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

Viscosity	
Viscosity, dynamic	: Data not available
Viscosity, kinematic	: Not applicable
Explosive properties	: Not classified
Oxidizing properties	: Data not available
Conductivity	: This material is not expected to be a static accumulator.
Decomposition temperature	: Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	: Stable.
Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition products	: Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
----------------------	---

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	: LD50 (rat): > 5,000 mg/kg Remarks: Expected to be of low toxicity:
Acute inhalation toxicity	: Remarks: Not considered to be an inhalation hazard under normal conditions of use.
Acute dermal toxicity	: LD50 (Rabbit): > 5,000 mg/kg Remarks: Expected to be of low toxicity:

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Components:

Zinc dialkyl dithiophosphate:

Remarks: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Components:

Alkyl amine:

Remarks: May cause an allergic skin reaction in sensitive individuals.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

Reproductive toxicity

Product:

:
Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used grease may contain harmful impurities that have accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment on disposal., ALL used grease should be handled with caution and skin contact avoided as far as possible.

Remarks: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) :
Remarks: Expected to be harmful:
LL/EL/IL50 10-100 mg/l

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be harmful: LL/EL/IL50 10-100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be harmful: LL/EL/IL50 10-100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility : Remarks: Semi-solid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.
- Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.
- Local legislation
Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

- Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Zinc dialkyl dithiophosphate	68649-42-3	3 %
------------------------------	------------	-----

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

New Jersey Right To Know

Zinc dialkyl dithiophosphate	68649-42-3
------------------------------	------------

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

Due to the conversion of this product to GHS classification and labelling, there has been a significant change to the nature of the information presented in chapter 2.

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut für Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HP V = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 3.0

Revision Date: 02/16/2017

Print Date: 02/17/2017

Substances

PNEC = Predicted No Effect Concentration

REACH = Registration Evaluation And Authorisation Of
Chemicals

RID = Regulations Relating to International Carriage of Dan-
gerous Goods by Rail

SKIN_DES = Skin Designation

STEL = Short term exposure limit

TRA = Targeted Risk Assessment

TSCA = US Toxic Substances Control Act

TWA = Time-Weighted Average

vPvB = very Persistent and very Bioaccumulative

Revision Date : 02/16/2017

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

SECTION 1. IDENTIFICATION

Product name : Shell Omala S2 GX 150

Product code : 001F1174

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
P.O. Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Gear lubricant.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

Used oil may contain harmful impurities.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

Hazardous components

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas.
Ingestion may result in nausea, vomiting and/or diarrhoea.

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Immediate medical attention, special treatment : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

- Unsuitable extinguishing media : Do not use water in a jet.
- Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material.
Reclaim liquid directly or in an absorbent.
Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropri-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

ate controls for safe handling, storage and disposal of this material.

Precautions for safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Product Transfer : This material has the potential to be a static accumulator.
Proper grounding and bonding procedures should be used during all bulk transfer operations.

Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.

Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m ³	US. ACGIH Threshold Limit Values
		(Mist)	5 mg/m ³	OSHA_TRANS

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

<http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods

<http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances

<http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany

<http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures

: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Personal protective equipment

Respiratory protection

: No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection

Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374,

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.
- Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

- General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid at room temperature.
- Colour : brown
- Odour : Slight hydrocarbon
- Odour Threshold : Data not available

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

pH	:	Not applicable
pour point	:	-24 °C / -11 °F Method: ISO 3016
Initial boiling point and boiling range	:	> 280 °C / 536 °F Estimated value(s)
Flash point	:	Typical 240 °C / 464 °F Method: ISO 2592
Evaporation rate	:	Data not available
Flammability (solid, gas)	:	Data not available
Upper explosion limit	:	Typical 10 %(V)
Lower explosion limit	:	Typical 1 %(V)
Vapour pressure	:	< 0.5 Pa (20 °C / 68 °F) estimated value(s)
Relative vapour density	:	> 1 estimated value(s)
Relative density	:	0.897 (15 °C / 59 °F)
Density	:	897 kg/m ³ (15.0 °C / 59.0 °F) Method: ISO 12185
Solubility(ies)		
Water solubility	:	negligible
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	Pow: > 6 (based on information on similar products)
Auto-ignition temperature	:	> 320 °C / 608 °F
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	150 mm ² /s (40.0 °C / 104.0 °F) Method: ISO 3104
		15 mm ² /s (100 °C / 212 °F) Method: ISO 3104
Conductivity	:	This material is not expected to be a static accumulator.
Decomposition temperature	:	Data not available

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	: Stable.
Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition products	: Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
----------------------	---

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	: LD50 (rat): > 5,000 mg/kg Remarks: Expected to be of low toxicity:
Acute inhalation toxicity	: Remarks: Not considered to be an inhalation hazard under normal conditions of use.
Acute dermal toxicity	: LD50 (Rabbit): > 5,000 mg/kg Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

: Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable.
Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility : Remarks: Liquid under most environmental conditions.
If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities.
Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

the collector or contractor should be established beforehand.
Disposal should be in accordance with applicable regional,
national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulation

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage,
for special precautions which a user needs to be aware of or
needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

A vertical bar (|) in the left margin indicates an amendment from the previous version.
Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut für Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 10/07/2015

Print Date: 10/08/2015

EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HP V = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Revision Date : 10/07/2015

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

SECTION 1. IDENTIFICATION

Product name : Shell Omala S4 WE 220

Product code : 001D7857

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Gear oil

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

Used oil may contain harmful impurities.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Blend of polyalkylene glycol and additives.

Hazardous components

SECTION 4. FIRST-AID MEASURES

- General advice : Not expected to be a health hazard when used under normal conditions.
- If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.
- In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.
- In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.
- If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas.
Ingestion may result in nausea, vomiting and/or diarrhoea.
- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Immediate medical attention, special treatment : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

- Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material.
Reclaim liquid directly or in an absorbent.
Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

Precautions for safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Product Transfer : This material has the potential to be a static accumulator.
Proper grounding and bonding procedures should be used during all bulk transfer operations.

Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.

Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods
<http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods
<http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances
<http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany
<http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

Engineering measures

: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Personal protective equipment

Respiratory protection

: No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection

Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.
- Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

- General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid at room temperature.
- Colour : colourless
- Odour : Slight hydrocarbon
- Odour Threshold : Data not available
- pH : Not applicable
- pour point : -39 °C / -38 °F Method: ISO 3016
- Initial boiling point and boiling range : > 280 °C / 536 °F estimated value(s)

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

Flash point	: 278 °C / 532 °F Method: ISO 2592
Evaporation rate	: Data not available
Flammability (solid, gas)	: Data not available
Upper explosion limit	: Typical 10 %(V)
Lower explosion limit	: Typical 1 %(V)
Vapour pressure	: < 0.5 Pa (20 °C / 68 °F) estimated value(s)
Relative vapour density	: > 1 estimated value(s)
Relative density	: 1,074 (15 °C / 59 °F)
Density	: 1.074 kg/m ³ (15.0 °C / 59.0 °F) Method: ISO 12185
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: > 6 (based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F
Viscosity	
Viscosity, dynamic	: Data not available
Viscosity, kinematic	: 222 mm ² /s (40.0 °C / 104.0 °F) Method: Unspecified
	34.4 mm ² /s (100 °C / 212 °F) Method: Unspecified
Conductivity	: This material is not expected to be a static accumulator.
Decomposition temperature	: Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
------------	--

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

Chemical stability	: Stable.
Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition products	: Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
----------------------	---

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	: LD50 (rat): > 5,000 mg/kg Remarks: Expected to be of low toxicity:
Acute inhalation toxicity	: Remarks: Not considered to be an inhalation hazard under normal conditions of use.
Acute dermal toxicity	: LD50 (Rabbit): > 5,000 mg/kg Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:
Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable.
Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility : Remarks: Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Remarks: Floats on water.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulation

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other re-productive harm.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

The components of this product are reported in the following inventories:

EINECS	: All components listed or polymer exempt.
TSCA	: All components listed.
DSL	: All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists

ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances

ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council

CLP = Classification Packaging and Labelling

COC = Cleveland Open-Cup

DIN = Deutsches Institut für Normung

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

DSL = Canada Domestic Substance List

EC = European Commission

EC50 = Effective Concentration fifty

ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals

ECHA = European Chemicals Agency

EINECS = The European Inventory of Existing Commercial Chemical Substances

EL50 = Effective Loading fifty

ENCS = Japanese Existing and New Chemical Substances Inventory

EWC = European Waste Code

GHS = Globally Harmonised System of Classification and Labelling of Chemicals

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IC50 = Inhibitory Concentration fifty

IL50 = Inhibitory Level fifty

IMDG = International Maritime Dangerous Goods

INV = Chinese Chemicals Inventory

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.5

Revision Date: 11/18/2015

Print Date: 05/02/2016

IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HPVS = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Revision Date : 11/18/2015

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version 7.0 Revision Date: 08/30/2018 SDS Number: 800001027084 Print Date: 08/31/2018
Date of last issue: 03/15/2016

SECTION 1. IDENTIFICATION

Product name : Shell Rotella ELC Pre-diluted 50/50

Product code : 001B1508

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Antifreeze and coolant.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Acute toxicity (Oral) : Category 4

Specific target organ toxicity : Category 2 (Kidney)
- repeated exposure

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version 7.0 Revision Date: 08/30/2018 SDS Number: 800001027084 Print Date: 08/31/2018
Date of last issue: 03/15/2016

Precautionary statements : **Prevention:**
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
Response:
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
Storage:
No precautionary phrases.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:
Contains ethanediol.
Contains bittering agent.

Other hazards which do not result in classification

Intentional abuse, misuse or other massive exposure may cause multiple organ damage and or death.
The classification of this material is based on OSHA HCS 2012 criteria.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture of ethylene glycol, water and additives.

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (% w/w)
Ethanediol	ethane-1,2-diol	107-21-1	40 - 60
Diethylene glycol	2,2'-oxydiethanol	111-46-6	1 - 3

SECTION 4. FIRST-AID MEASURES

General advice : DO NOT DELAY.
Keep victim calm. Obtain medical treatment immediately.

If inhaled : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
If persistent irritation occurs, obtain medical attention.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version 7.0 Revision Date: 08/30/2018 SDS Number: 800001027084 Print Date: 08/31/2018
Date of last issue: 03/15/2016

-
- If swallowed : DO NOT DELAY.
If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Rinse mouth.
- Most important symptoms and effects, both acute and delayed : Kidney toxicity may be recognized by blood in the urine or increased or decreased urine flow. Other signs and symptoms can include nausea, vomiting, abdominal cramps, diarrhoea, lumbar pain shortly after ingestion, and possibly narcosis and death.
High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.
- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Indication of any immediate medical attention and special treatment needed : IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT!
The preferred treatment is immediate transportation to a medical facility and use of appropriate treatment including possible administration of activated charcoal, gastric lavage and or gastric aspiration. If none of the above are immediately available and a delay of more than one hour is anticipated before such medical attention can be obtained, induction of vomiting may be appropriate using IPECAC syrup (Contraindicated if there are any signs of CNS depression). This should be considered on a case by case basis following specialist advice. Specific other treatments may include ethanol therapy, fomepizole, treatment of acidosis and haemodialysis. Seek specialist advice without delay.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.
- Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version
7.0

Revision Date:
08/30/2018

SDS Number:
800001027084

Print Date: 08/31/2018
Date of last issue: 03/15/2016

large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.

Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

Local authorities should be advised if significant spillages cannot be contained.

U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Chapter 15) to the National Response Center at (800) 424-8802.

SECTION 7. HANDLING AND STORAGE

Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropri-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version 7.0 Revision Date: 08/30/2018 SDS Number: 800001027084 Print Date: 08/31/2018
Date of last issue: 03/15/2016

- ate controls for safe handling, storage and disposal of this material.
- Advice on safe handling : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Avoidance of contact : Strong oxidising agents.
- Further information on storage stability : Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers. Store at ambient temperature.
- Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene. Unsuitable material: Zinc., Avoid contact with galvanized materials.
- Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Ethanediol	107-21-1	TWA (Vapour)	25 ppm	ACGIH
Ethanediol		STEL (Vapour)	50 ppm	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version 7.0 Revision Date: 08/30/2018 SDS Number: 800001027084 Print Date: 08/31/2018
Date of last issue: 03/15/2016

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods
<http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances
<http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany
<http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appro-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version
7.0

Revision Date:
08/30/2018

SDS Number:
800001027084

Print Date: 08/31/2018
Date of last issue: 03/15/2016

appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection

: If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection

: Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.

Protective measures

: Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Thermal hazards

: Not applicable

Environmental exposure controls

General advice

: Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version 7.0 Revision Date: 08/30/2018 SDS Number: 800001027084 Print Date: 08/31/2018
Date of last issue: 03/15/2016

vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid at room temperature.

Colour : purple

Odour : characteristic

Odour Threshold : Data not available

pH : Not applicable

Melting point/freezing point : -37 °C / -34 °F
(100.0 hPa)
Method: ASTM D1177

Initial boiling point and boiling range : > 100 °C / 212 °F
estimated value(s)

Flash point : 130 °C / 266 °F

Method: ASTM D93 (PMCC)

Evaporation rate : Data not available

Flammability (solid, gas) : Data not available

Upper explosion limit / upper flammability limit : Typical 15 %(V)

Lower explosion limit / Lower flammability limit : Typical 3 %(V)

Vapour pressure : Data not available

Relative vapour density : Data not available

Relative density : 1,075 (15 °C / 59 °F)

Density : 1.075 kg/m³ (15.6 °C / 60.1 °F)
Method: Unspecified

Solubility(ies)
Water solubility : completely soluble

Solubility in other solvents : Data not available

Partition coefficient: n-octanol/water : Data not available

Auto-ignition temperature : > 200 °C / 392 °F

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version 7.0 Revision Date: 08/30/2018 SDS Number: 800001027084 Print Date: 08/31/2018
Date of last issue: 03/15/2016

Decomposition temperature : Data not available

Viscosity
Viscosity, dynamic : Data not available

Viscosity, kinematic : 30 mm²/s (40.0 °C / 104.0 °F)
Method: Unspecified

Conductivity : This material is not expected to be a static accumulator.

SECTION 10. STABILITY AND REACTIVITY

Chemical stability : Stable.

Possibility of hazardous reactions : Reacts with strong oxidising agents.

Conditions to avoid : Extremes of temperature and direct sunlight.

Incompatible materials : Strong oxidising agents.

Hazardous decomposition products : No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 (rat): > 500 - 2,000 mg/kg
Remarks: Harmful if swallowed.

Remarks: There is a marked difference in acute oral toxicity between rodents and man, man being more susceptible than rodents. The estimated fatal dose for man is 100 milliliters (1/2 cup). This material has also been shown to be toxic and potentially lethal by ingestion to cats and dogs. Ingestion may cause drowsiness and dizziness.

Acute inhalation toxicity : LC 50 (Rat): > 5 mg/l
Exposure time: 4 h
Remarks: Low toxicity:

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version
7.0

Revision Date:
08/30/2018

SDS Number:
800001027084

Print Date: 08/31/2018
Date of last issue: 03/15/2016

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Low toxicity:

Skin corrosion/irritation

Product:

Remarks: Slightly irritating to skin., Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Product:

Remarks: Slightly irritating to the eye., Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Not a skin sensitiser.
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

: Remarks: Non mutagenic, Based on available data, the classification criteria are not met.

Carcinogenicity

Product:

Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version
7.0

Revision Date:
08/30/2018

SDS Number:
800001027084

Print Date: 08/31/2018
Date of last issue: 03/15/2016

Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are not met.

STOT - single exposure

Product:

Remarks: Based on available data, the classification criteria are not met.

STOT - repeated exposure

Product:

Remarks: Kidney: can cause kidney damage.

Aspiration toxicity

Product:

Not an aspiration hazard.

Further information

Product:

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) :
Remarks: LC/EC/IC50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) :
Remarks: LC/EC/IC50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.

Toxicity to algae (Acute toxicity) :
Remarks: LC/EC/IC50 > 100 mg/l
Practically non toxic:

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version 7.0 Revision Date: 08/30/2018 SDS Number: 800001027084 Print Date: 08/31/2018
Date of last issue: 03/15/2016

Based on available data, the classification criteria are not met.

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to microorganisms (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Readily biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

Mobility in soil

Product:

Mobility : Remarks: Liquid under most environmental conditions. If product enters soil, it will be highly mobile and may contaminate groundwater. Dissolves in water.

Other adverse effects

Product:

Additional ecological information : Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version	Revision Date:	SDS Number:	Print Date: 08/31/2018
7.0	08/30/2018	800001027084	Date of last issue: 03/15/2016

Waste, spills or used product is dangerous waste.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local legislation
Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

UN/ID/NA number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Ethylene glycol)
Class : 9
Packing group : III
Labels : 9
Reportable quantity : Ethylene glycol
(5,000 lb)
ERG Code : 171
Marine pollutant : no
Remarks : This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less.

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied. MARPOL Annex 1 rules apply for bulk shipments by sea.

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version 7.0 Revision Date: 08/30/2018 SDS Number: 800001027084 Print Date: 08/31/2018
Date of last issue: 03/15/2016

The components of this product are reported in the following inventories:

EINECS : Not established.
TSCA : All components listed.
DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 2, 1, 0

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut für Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Shell Rotella ELC Pre-diluted 50/50

Version	Revision Date:	SDS Number:	Print Date: 08/31/2018
7.0	08/30/2018	800001027084	Date of last issue: 03/15/2016

IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the
determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of
Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Ob-
served Effect Level
OE_HPVS = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical
Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of
Chemicals
RID = Regulations Relating to International Carriage of Dan-
gerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

A vertical bar (|) in the left margin indicates an amendment from the previous version.

|| Due to a change in detail in Section 15, this document has been released as a significant change.

Revision Date : 08/30/2018

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

SECTION 1. IDENTIFICATION

Product name : Shell Spirax S4 CX 30

Product code : 001D8250

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Transmission oil.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

Used oil may contain harmful impurities.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (%)
Overbased sulphurised calcium phenate		68784-26-9	< 3
Zinc dialkyldithiophosphate	Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	68649-42-3	< 2.4
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *		Not Assigned	0 - 90

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms and effects, both acute and : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

- delayed : Ingestion may result in nausea, vomiting and/or diarrhoea.
- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Immediate medical attention, special treatment : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.
- Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material.
Reclaim liquid directly or in an absorbent.
Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Precautions for safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Product Transfer : This material has the potential to be a static accumulator.
Proper grounding and bonding procedures should be used during all bulk transfer operations.

Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.

Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable frac-	5 mg/m3	US. ACGIH Threshold

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

		tion))		Limit Values
		(Mist)	5 mg/m3	OSHA_TRANS
		TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures

- : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

Practice good housekeeping.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves
Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.
Personal hygiene is a key element of effective hand care.
Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.

Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid at room temperature.

Colour : amber

Odour : Slight hydrocarbon

Odour Threshold : Data not available

pH : Not applicable

pour point : -30 °C / -22 °F Method: ISO 3016

Initial boiling point and boiling range : > 280 °C / 536 °F estimated value(s)

Flash point : 205 °C / 401 °F
Method: ISO 2592

Evaporation rate : Data not available

Flammability (solid, gas) : Data not available

Upper explosion limit : Typical 10 %(V)

Lower explosion limit : Typical 1 %(V)

Vapour pressure : < 0.5 Pa (20 °C / 68 °F)
estimated value(s)

Relative vapour density : > 1 estimated value(s)

Relative density : 0.899 (15 °C / 59 °F)

Density : 899 kg/m³ (15.0 °C / 59.0 °F)
Method: ISO 12185

Solubility(ies)
Water solubility : negligible

Solubility in other solvents : Data not available

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

Partition coefficient: n-octanol/water	:	Pow: > 6(based on information on similar products)
Auto-ignition temperature	:	> 320 °C / 608 °F
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	93.9 mm ² /s (40.0 °C / 104.0 °F) Method: ISO 3104
		10.9 mm ² /s (100 °C / 212 °F) Method: ISO 3104
Explosive properties	:	Not classified
Oxidizing properties	:	Data not available
Conductivity	:	This material is not expected to be a static accumulator.
Decomposition temperature	:	Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	:	Stable.
Possibility of hazardous reactions	:	Reacts with strong oxidising agents.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Strong oxidising agents.
Hazardous decomposition products	:	Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	:	Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
----------------------	---	---

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

Acute toxicity

Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Acute inhalation toxicity : Remarks: Not considered to be an inhalation hazard under normal conditions of use.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Components:

Zinc dialkyldithiophosphate:

Remarks: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcino-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

gen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:

Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment

: Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility : Remarks: Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Zinc dialkyldithiophosphate	68649-42-3	1.196 %
-----------------------------	------------	---------

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

Pennsylvania Right To Know

Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
---	------------

New Jersey Right To Know

Zinc dialkyldithiophosphate	68649-42-3
-----------------------------	------------

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reac- 0, 1, 0
tivity)

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists

ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances

ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council

CLP = Classification Packaging and Labelling

COC = Cleveland Open-Cup

DIN = Deutsches Institut für Normung

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

DSL = Canada Domestic Substance List

EC = European Commission

EC50 = Effective Concentration fifty

ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals

ECHA = European Chemicals Agency

EINECS = The European Inventory of Existing Commercial Chemical Substances

EL50 = Effective Loading fifty

ENCS = Japanese Existing and New Chemical Substances Inventory

EWC = European Waste Code

GHS = Globally Harmonised System of Classification and Labelling of Chemicals

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IC50 = Inhibitory Concentration fifty

IL50 = Inhibitory Level fifty

IMDG = International Maritime Dangerous Goods

INV = Chinese Chemicals Inventory

IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables

KECI = Korea Existing Chemicals Inventory

LC50 = Lethal Concentration fifty

LD50 = Lethal Dose fifty per cent.

LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading

LL50 = Lethal Loading fifty

MARPOL = International Convention for the Prevention of

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.8

Revision Date: 08/18/2016

Print Date: 08/19/2016

Pollution From Ships

NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level

OE_HPVS = Occupational Exposure - High Production Volume

PBT = Persistent, Bioaccumulative and Toxic

PICCS = Philippine Inventory of Chemicals and Chemical Substances

PNEC = Predicted No Effect Concentration

REACH = Registration Evaluation And Authorisation Of Chemicals

RID = Regulations Relating to International Carriage of Dangerous Goods by Rail

SKIN_DES = Skin Designation

STEL = Short term exposure limit

TRA = Targeted Risk Assessment

TSCA = US Toxic Substances Control Act

TWA = Time-Weighted Average

vPvB = very Persistent and very Bioaccumulative

Revision Date : 08/18/2016

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

SECTION 1. IDENTIFICATION

Product name : Shell Tellus S2 V 46

Product code : 001D7750

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
P.O. Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Hydraulic oil

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

Used oil may contain harmful impurities.
High-pressure injection under the skin may cause serious damage including local necrosis.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical Name	Synonyms	CAS-No.	Concentration (%)
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *		Not Assigned	0 - 90

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.
Obtain medical attention even in the absence of apparent wounds.

In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms : Oil acne/folliculitis signs and symptoms may include formation

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

and effects, both acute and delayed

of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.

Protection of first-aiders

: When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Immediate medical attention, special treatment

: Treat symptomatically.

High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

: Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media

: Do not use water in a jet.

Specific hazards during fire-fighting

: Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.

Specific extinguishing methods

: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters

: Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Avoid contact with skin and eyes.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Precautions for safe handling : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Avoidance of contact : Strong oxidising agents.
- Product Transfer : This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.
- Storage**
- Other data : Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers.
- Store at ambient temperature.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

- Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.
- Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m3	US. ACGIH Threshold Limit Values
		(Mist)	5 mg/m3	OSHA_TRANS

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

- Engineering measures** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Personal protective equipment

Respiratory protection

- : No respiratory protection is ordinarily required under normal conditions of use.
- In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
- If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
- Check with respiratory protective equipment suppliers.
- Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
- Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection Remarks

- : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.
- Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.
- Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

- General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid at room temperature.
- Colour : amber
- Odour : Slight hydrocarbon
- Odour Threshold : Data not available
- pH : Not applicable
- pour point : -36 °C / -33 °F Method: ISO 3016
- Initial boiling point and boiling range : > 280 °C / 536 °F estimated value(s)
- Flash point : 225 °C / 437 °F
Method: ISO 2592
- Evaporation rate : Data not available
- Flammability (solid, gas) : Data not available
- Upper explosion limit : Typical 10 %(V)
- Lower explosion limit : Typical 1 %(V)
- Vapour pressure : < 0.5 Pa (20 °C / 68 °F)
estimated value(s)
- Relative vapour density : > 1 estimated value(s)

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

Relative density	: 0.872 (15 °C / 59 °F)
Density	: 872 kg/m ³ (15.0 °C / 59.0 °F) Method: ISO 12185
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: > 6(based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F
Viscosity	
Viscosity, dynamic	: Data not available
Viscosity, kinematic	: 2350 mm ² /s (-20 °C / -4 °F) Method: ASTM D445
	46 mm ² /s (40.0 °C / 104.0 °F) Method: ASTM D445
	7.9 mm ² /s (100 °C / 212 °F) Method: ASTM D445
Conductivity	: This material is not expected to be a static accumulator.
Decomposition temperature	: Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	: Stable.
Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition products	: Hazardous decomposition products are not expected to form during normal storage.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Acute inhalation toxicity : Remarks: Not considered to be an inhalation hazard under normal conditions of use.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:

Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

Remarks: Slightly irritating to respiratory system.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). (LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable.
Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility : Remarks: Liquid under most environmental conditions.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulation

IATA-DGR

Not regulated as a dangerous good

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
methyl methacrylate	80-62-6	1000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

CERCLA Reportable Quantity

Calculated RQ exceeds reasonably attainable upper limit., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA., The components with RQs are given for information.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

methyl methacrylate 80-62-6 0.065 %

Pennsylvania Right To Know

methyl methacrylate 80-62-6

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.
TSCA : All components listed.
DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut für Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 08/27/2015

Print Date: 08/28/2015

IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the
determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of
Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Ob-
served Effect Level
OE_HPVS = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical
Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of
Chemicals
RID = Regulations Relating to International Carriage of Dan-
gerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Revision Date : 08/27/2015

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

SECTION 1. IDENTIFICATION

Product name : Shell Tellus S2 VX 46

Product code : 001F8433

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Hydraulic oil

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

Used oil may contain harmful impurities.
High-pressure injection under the skin may cause serious damage including local necrosis.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (%)
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *		Not Assigned	0 - 90

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.
Obtain medical attention even in the absence of apparent wounds.

In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms : Oil acne/folliculitis signs and symptoms may include formation

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

and effects, both acute and delayed

of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.

Protection of first-aiders

: When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Immediate medical attention, special treatment

: Treat symptomatically.

High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

: Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media

: Do not use water in a jet.

Specific hazards during fire-fighting

: Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.

Specific extinguishing methods

: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters

: Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Avoid contact with skin and eyes.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Precautions for safe handling : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Avoidance of contact : Strong oxidising agents.
- Product Transfer : This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.
- Storage**
- Other data : Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers.
- Store at ambient temperature.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

- Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.
- Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m3	US. ACGIH Threshold Limit Values
		(Mist)	5 mg/m3	OSHA_TRANS

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

- Engineering measures** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Personal protective equipment

Respiratory protection

- : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection

Remarks

- : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.
- Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

- General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : clear
- Odour : Slight hydrocarbon
- Odour Threshold : Data not available
- pH : Not applicable
- pour point : -36 °C / -33 °F Method: ISO 3016
- Initial boiling point and boiling range : > 280 °C / 536 °F estimated value(s)
- Flash point : 220 °C / 428 °F
Method: ISO 2592
- Evaporation rate : Data not available
- Flammability (solid, gas) : Data not available
- Upper explosion limit : Typical 10 %(V)
- Lower explosion limit : Typical 1 %(V)
- Vapour pressure : < 0.5 Pa (20 °C / 68 °F)
estimated value(s)
- Relative vapour density : > 1 estimated value(s)

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

Relative density	: 0.856 (15 °C / 59 °F)
Density	: 856 kg/m ³ (15.0 °C / 59.0 °F) Method: ISO 12185
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: > 6(based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F
Viscosity	
Viscosity, dynamic	: Data not available
Viscosity, kinematic	: 46 mm ² /s (40.0 °C / 104.0 °F) Method: ASTM D445
	7.9 mm ² /s (100 °C / 212 °F) Method: ASTM D445
	2630 mm ² /s (-20 °C / -4 °F) Method: ASTM D445
Explosive properties	: Not classified
Oxidizing properties	: Data not available
Conductivity	: This material is not expected to be a static accumulator.
Decomposition temperature	: Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	: Stable.
Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

Incompatible materials : Strong oxidising agents.

Hazardous decomposition products : Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Acute inhalation toxicity : Remarks: Not considered to be an inhalation hazard under normal conditions of use.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:
Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

Remarks: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). (LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable.
Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioac-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

cumulate.

Mobility in soil

Product:

Mobility

: Remarks: Liquid under most environmental conditions.
If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information

: Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues

: Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging

: Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

Not regulated as a dangerous good

International Regulation

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

Pennsylvania Right To Know

Distillates (petroleum), solvent-dewaxed heavy paraffinic 64742-65-0

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other re-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

productive harm.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) : 0, 1, 0

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut für Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.0

Revision Date: 04/11/2016

Print Date: 04/12/2016

IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the
determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of
Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Ob-
served Effect Level
OE_HPVS = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical
Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of
Chemicals
RID = Regulations Relating to International Carriage of Dan-
gerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Revision Date : 04/11/2016

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

SECTION 1. IDENTIFICATION

Product name : Shell Tellus S3 V 46

Product code : 001D7763

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Hydraulic oil

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

Used oil may contain harmful impurities.
High-pressure injection under the skin may cause serious damage including local necrosis.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical Name	Synonyms	CAS-No.	Concentration (%)
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *		Not Assigned	0 - 90

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.
Obtain medical attention even in the absence of apparent wounds.

In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms : Oil acne/folliculitis signs and symptoms may include formation

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

and effects, both acute and delayed

of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.

Protection of first-aiders

: When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Immediate medical attention, special treatment

: Treat symptomatically.

High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

: Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media

: Do not use water in a jet.

Specific hazards during fire-fighting

: Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.

Specific extinguishing methods

: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters

: Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Avoid contact with skin and eyes.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Precautions for safe handling : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Avoidance of contact : Strong oxidising agents.
- Product Transfer : This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.
- Storage**
- Other data : Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers.
- Store at ambient temperature.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

- Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.
- Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m ³	US. ACGIH Threshold Limit Values
		(Mist)	5 mg/m ³	OSHA_TRANS

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

- Engineering measures** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Personal protective equipment

Respiratory protection

- : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks

- : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.
- Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

- General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid at room temperature.
- Colour : amber
- Odour : Slight hydrocarbon
- Odour Threshold : Data not available
- pH : Not applicable
- pour point : -39 °C / -38 °F Method: ISO 3016
- Initial boiling point and boiling range : > 280 °C / 536 °F estimated value(s)
- Flash point : 210 °C / 410 °F
Method: ISO 2592
- Evaporation rate : Data not available
- Flammability (solid, gas) : Data not available
- Upper explosion limit : Typical 10 %(V)
- Lower explosion limit : Typical 1 %(V)
- Vapour pressure : < 0.5 Pa (20 °C / 68 °F)
estimated value(s)
- Relative vapour density : > 1 estimated value(s)

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

Relative density	: 0.870 (15 °C / 59 °F)
Density	: 870 kg/m ³ (15.0 °C / 59.0 °F) Method: ISO 12185
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: > 6(based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F
Viscosity	
Viscosity, dynamic	: Data not available
Viscosity, kinematic	: 46 mm ² /s (40.0 °C / 104.0 °F) Method: ASTM D445
	8.4 mm ² /s (100 °C / 212 °F) Method: ASTM D445
Explosive properties	: Not classified
Oxidizing properties	: Data not available
Conductivity	: This material is not expected to be a static accumulator.
Decomposition temperature	: Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	: Stable.
Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition products	: Hazardous decomposition products are not expected to form during normal storage.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Acute inhalation toxicity : Remarks: Not considered to be an inhalation hazard under normal conditions of use.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:

Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). (LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable.
Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

Mobility in soil

Product:

Mobility : Remarks: Liquid under most environmental conditions.
If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulation

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Xylene, Mixed Isomers	1330-20-7	100	*
Naphthalene	91-20-3	100	*
Cumene	98-82-8	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

CERCLA Reportable Quantity

Calculated RQ exceeds reasonably attainable upper limit.

CERCLA Reportable Quantity

Calculated RQ exceeds reasonably attainable upper limit., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA., The components with RQs are given for information.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Xylene, mixed isomers	1330-20-7	0.0001 %
Naphthalene	91-20-3	0.0001 %

Pennsylvania Right To Know

Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Distillates, petroleum, solvent-dewaxed light paraffinic	64742-56-9

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut für Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances
Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and
Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the
determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of
Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Ob-
served Effect Level
OE_HP V = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical
Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of
Chemicals
RID = Regulations Relating to International Carriage of Dan-
gerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Revision Date : 01/05/2016

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

SECTION 1. IDENTIFICATION

Product name : Shell Tellus S3 V 46

Product code : 001D7763

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Hydraulic oil

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

Used oil may contain harmful impurities.
High-pressure injection under the skin may cause serious damage including local necrosis.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical Name	Synonyms	CAS-No.	Concentration (%)
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *		Not Assigned	0 - 90

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.
Obtain medical attention even in the absence of apparent wounds.

In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms : Oil acne/folliculitis signs and symptoms may include formation

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

and effects, both acute and delayed

of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.

Protection of first-aiders

: When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Immediate medical attention, special treatment

: Treat symptomatically.

High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

: Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media

: Do not use water in a jet.

Specific hazards during fire-fighting

: Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.

Specific extinguishing methods

: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters

: Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Avoid contact with skin and eyes.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Precautions for safe handling : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Avoidance of contact : Strong oxidising agents.
- Product Transfer : This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.
- Storage**
- Other data : Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers.
- Store at ambient temperature.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

- Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.
- Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m ³	US. ACGIH Threshold Limit Values
		(Mist)	5 mg/m ³	OSHA_TRANS

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

- Engineering measures** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Personal protective equipment

Respiratory protection

- : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks

- : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.
- Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

- General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid at room temperature.
- Colour : amber
- Odour : Slight hydrocarbon
- Odour Threshold : Data not available
- pH : Not applicable
- pour point : -39 °C / -38 °F Method: ISO 3016
- Initial boiling point and boiling range : > 280 °C / 536 °F estimated value(s)
- Flash point : 210 °C / 410 °F
Method: ISO 2592
- Evaporation rate : Data not available
- Flammability (solid, gas) : Data not available
- Upper explosion limit : Typical 10 %(V)
- Lower explosion limit : Typical 1 %(V)
- Vapour pressure : < 0.5 Pa (20 °C / 68 °F)
estimated value(s)
- Relative vapour density : > 1 estimated value(s)

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

Relative density	: 0.870 (15 °C / 59 °F)
Density	: 870 kg/m ³ (15.0 °C / 59.0 °F) Method: ISO 12185
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: > 6(based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F
Viscosity	
Viscosity, dynamic	: Data not available
Viscosity, kinematic	: 46 mm ² /s (40.0 °C / 104.0 °F) Method: ASTM D445
	8.4 mm ² /s (100 °C / 212 °F) Method: ASTM D445
Explosive properties	: Not classified
Oxidizing properties	: Data not available
Conductivity	: This material is not expected to be a static accumulator.
Decomposition temperature	: Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	: Stable.
Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition products	: Hazardous decomposition products are not expected to form during normal storage.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Acute inhalation toxicity : Remarks: Not considered to be an inhalation hazard under normal conditions of use.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:

Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). (LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable.
Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

Mobility in soil

Product:

Mobility

: Remarks: Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information

: Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues

: Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging

: Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulation

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Xylene, Mixed Isomers	1330-20-7	100	*
Naphthalene	91-20-3	100	*
Cumene	98-82-8	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

CERCLA Reportable Quantity

Calculated RQ exceeds reasonably attainable upper limit.

CERCLA Reportable Quantity

Calculated RQ exceeds reasonably attainable upper limit., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA., The components with RQs are given for information.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Xylene, mixed isomers	1330-20-7	0.0001 %
Naphthalene	91-20-3	0.0001 %

Pennsylvania Right To Know

Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Distillates, petroleum, solvent-dewaxed light paraffinic	64742-56-9

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut für Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.3

Revision Date: 01/05/2016

Print Date: 05/02/2016

Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HP V = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Revision Date : 01/05/2016

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Sum of Gallons

Reserve Marine Terminals

Row Labels**2018** **2019** **2020**

	<u>2018</u>	<u>2019</u>	<u>2020</u>
ACT SYNLUBE 751-32 PL		5	
ACT SYNLUBE 751-46 PL		5	20
AFL API CERTIFIED DEF 2.5G EA			150
AFL API CERTIFIED DEF BU			564
AFL GEAR LUBE MP 80W90 DR	55	55	165
AFL GEAR LUBE MP 80W90 DR	220	55	
ARM ELC 5050 AF DR	1710	1255	
CHV DELO HD EP 1 10/1 CS		3.28125	
CHV URSA SUPER + 15W40 BU	2087		
CIT EP COMPOUND GEAR 150 DR	2400		
CIT LITHOPLEX MP 2 10/1 CS	202	27.34375	
CIT LITHOPLEX MP 2 10/1 CS	1094	27.34375	
CIT LITHOPLEX MP 2 KG	980	15	
CIT LITHOPLEX RT 1 10/1 CS	88	60.15625	3.28125
CIT LITHOPLEX RT 2 10/1 CS		136.7188	153.125
DMX CHLR BRAKE CLNR 12/19oz CS		2	
DMX CHLR BRK CLNR 12/19oz CS		4	3
DMX D/M ATF DR	165		110
DMX HD BRK FLD 12/Q CS		12	
DMX NC BPC LVOC 12/15oz CS			4
DMX NC BRK CLNR DR	14		110
DMX RV AF CH355P -50 DR		110	
DMX SB 10W30 DR	2109	55	55
LBP 176 GEAR GRS PL	70	17.5	
LBP CHAIN/CABLE FLD 12/11oz CS			1
LBP GEAR SHD EX HVY 10/10oz CS	81	6.25	5.46875
PRY AIR BRAKE AF 12/Q CS		10	
PRY PR3 PENE/LUBE 12/11oz CS	9	2	4
PRY START FLD SPRY 12/11oz CS	13	15	4
PSV DIESEL 911 12/Q CS		8	
PSV DIESEL 911 6/80oz CS	1	3	
RLT PRM AW HYD 46 BU	10445	16054.8	15526.1
SHL ROT ELC 5050 AF BU			1390
SHL ROT ELC 5050 AF DR			165
SHL ROT ELC 5050 AF DR			110
WINDSHIELD SOLVENT DR	220	165	110
Ultra Low Sulphur Dyed Diesel Fuel	79,718	71,829	113,564
Ultra Low Sulphur Dyed B11 Diesel Fuel	191,829	153,660	138,855
Gasoline 87 Octane - Reformulated	13,755	11,464	13,559
Propane	31,299	31,648	14,919
OIL DRY 40 POUND BAGS	160	170	100

Sum of Gallons**Row Labels**

Napuck Salvage

	2018	2019	2020
AFL GEAR LUBE MP 80W90 DR			55
AFL GEAR LUBE MP 80W90 KG	32	16	
AFL GEAR LUBE MP 80W90 KG		32	
ARM ELC 5050 AF BU	275		
ARM ELC 5050 AF DR		165	
CHV URSA SUPER + 15W40 BU		225	
CIT EP COMPOUND GEAR 150 DR		200	
CIT EP COMPOUND GEAR 150 DR			50
CIT LITHOPLEX CM 2 10/1 CS	175	27.34375	27.34375
CIT LITHOPLEX MP 2 KG		105	
CIT LITHOPLEX RT 1 10/1 CS			10.9375
RLT LIX 220 EP 2 GRS KG			45
RLT LIX 220 EP 2 GRS KG			30
RLT PRM AW HYD 46 BU	535	4568.8	2446.4
SHL SPX S4 CX 30 DR	385	55	
MM-6800 SOLN	1925	2475	1375
MM-PAL400	2200	2475	1375
PROSECUTOR SOLN	275	550	825
MM-3600D			55
Ultra Low Sulphur Dyed Diesel Fuel	25,031	19,597	25,856
Ultra Low Sulphur Dyed B11 Diesel Fuel	57,991	43,468	26,253
Gasoline 87 Octane - Reformulated	5,200	4,800	2,780
Propane	46,883	54,454	44,817
OIL DRY 40 POUND BAGS	100	120	75

Sum of Gallons**Row Labels**

South Shore

	2018	2019	2020
ARM ELC 5050 AF DR	440	55	
CHV URSA SUPER + 15W40 DR	770	275	110
CIT LITHOPLEX MP 2 KG			30
CIT LITHOPLEX RT 2 10/1 CS			38.28125
RLT PRM AW HYD 46 DR	800	380	330
Ultra Low Sulphur Dyed Diesel Fuel	2,300	2,750	1,680
Ultra Low Sulphur Dyed B11 Diesel Fuel	1,580	2,200	1,100
Gasoline 87 Octane - Reformulated	2,200	2,555	3,000
Propane	4,322	2,489	2,638
OIL DRY 40 POUND BAGS	40	30	40

Sum of Gallons

Regency Technologies

Row Labels	2018	2019	2020
CHV DELO HD EP 1 10/1 CS	110		220
CHV DELO TORQ FORCE 10 DR	80		165
CHV DELO TORQ FORCE 30 DR	10		55
CHV MEROPA 68 DR		50	
CHV MULTIFAK EP 0 PL		8.75	
CHV MULTIFAK EP 000 MPL			4.375
CHV ULTI-PLEX SYN EP 10/1 CS		4.375	1.09375
CIT LITHOPLEX RT 2 PL			13.125
CIT SYN GEAR 80W140 PL		4.375	
RLT PRM AW HYD 46 DR	200	280	
SHL OMALA S2 GX 150 PL	5		
Ultra Low Sulphur Dyed Diesel Fuel	720	900	675
Ultra Low Sulphur Dyed B11 Diesel Fuel	680	700	525
Gasoline 87 Octane - Reformulated	0	0	0
Propane	16,642	14,029	10,114
OIL DRY 40 POUND BAGS	30	10	5

Reserve FTL, LLC
 2018 - 2020
 UOM = Gross Tons

Calendar 2018		Jan-18	Feb-18	Mar-18	Apr-18	May-18
Purchases ALL		16,010.74	10,816.29	10,529.53	20,545.61	16,845.53
	NOW	158.34	0.59	0.00	893.62	1.66
	SSR	417.68	317.59	386.87	346.95	315.77
	RSR	0.00	4.16	55.97	96.62	95.32
Purchases related		576.02	322.34	442.84	1,337.19	412.75
Unrelated GT Purchased		15,434.72	10,493.95	10,086.69	19,208.42	16,432.78
Sales All		15,434.72	12,081.43	12,922.06	20,130.05	14,269.17
	NOW	614.66	322.44	996.46	919.74	470.78
	SSR	6.22	9.70	11.30	8.90	10.31
	RSR	0.00	0.00	0.00	0.00	0.00
Sales related		620.88	332.13	1,007.76	928.64	481.10
Unrelated GT Sold		14,813.84	11,749.29	11,914.30	19,201.41	13,788.07
Calendar 2019		Jan-19	Feb-19	Mar-19	Apr-19	May-19
Purchases ALL		10,704.96	12,076.31	11,291.65	11,244.63	12,107.38
	NOW	0.00	0.00	0.00	0.00	0.00
	SSR	236.17	240.13	314.98	158.39	179.28
	RSR	57.05	78.07	102.32	90.35	73.34
Purchases related		293.22	318.19	417.29	248.74	252.62
Unrelated GT Purchased		10,411.74	11,758.12	10,874.36	10,995.89	11,854.76

Sales All		11,213.56	12,670.91	15,707.62	16,043.57	12,371.61
	NOW	761.17	991.94	1,060.41	543.94	454.75
	SSR	10.13	6.89	39.46	29.70	18.97
	RSR	0.00	0.00	0.00	0.00	0.00
Sales related		771.30	998.83	1,099.87	573.64	473.73
Unrelated GT Sold		10,442.25	11,672.08	14,607.75	15,469.93	11,897.89
Calendar 2020		Jan-20	Feb-20	Mar-20	Apr-20	May-20
Purchases ALL		25,664.41	15,537.29	14,433.40	3,506.68	18,024.72
	NOW	367.86	0.00	15.00	0.00	(0.00)
	SSR	555.90	336.63	313.88	72.93	149.80
	RSR	54.21	52.84	64.53	19.72	19.81
Purchases related		977.97	389.47	393.40	92.65	169.62
Unrelated GT Purchased		24,686.45	15,147.82	14,039.99	3,414.03	17,855.10
Sales All		15,253.88	12,948.18	20,664.61	3,796.92	22,230.48
	NOW	63.66	185.14	(162.67)	43.70	311.22
	SSR	6.54	8.20	7.34	1.80	0.36
	RSR	0.00	0.00	0.00	0.00	0.00
Sales related		70.20	193.34	(155.32)	45.50	311.58
Unrelated GT Sold		15,183.67	12,754.84	20,819.93	3,751.42	21,918.90

Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
17,559.51	14,678.64	22,731.98	11,477.34	21,898.82	20,130.79	21,296.25
0.00	0.00	0.00	0.00	129.50	0.00	0.00
268.90	201.79	218.67	153.55	235.78	255.95	165.55
128.76	82.71	110.39	84.51	107.47	110.23	116.94
397.65	284.50	329.06	238.06	472.75	366.18	282.48
17,161.86	14,394.14	22,402.92	11,239.29	21,426.07	19,764.61	21,013.77
14,344.76	14,276.72	20,111.20	12,461.61	16,432.13	17,796.91	16,060.08
1,210.67	375.02	476.14	1,007.67	1,018.19	590.11	463.58
6.62	6.45	8.08	7.04	67.41	8.31	204.41
0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,217.29	381.46	484.22	1,014.71	1,085.59	598.41	667.99
13,127.47	13,895.26	19,626.98	11,446.90	15,346.54	17,198.50	15,392.09
Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
16,223.92	16,410.31	18,500.47	6,313.32	9,266.34	19,126.24	12,101.12
96.38	300.60	0.00	0.00	0.00	0.00	0.00
377.91	155.01	190.81	314.41	247.49	138.97	339.53
55.73	73.88	74.25	83.88	88.47	40.77	25.90
530.02	529.49	265.06	398.29	335.97	179.74	365.43
15,693.90	15,880.82	18,235.41	5,915.03	8,930.38	18,946.50	11,735.69

19,095.77	13,985.07	14,388.24	13,123.09	19,034.32	6,186.02	20,811.03
243.82	514.75	1,156.28	545.99	332.38	499.43	609.47
12.71	4.61	24.98	30.11	63.16	4.78	6.58
18.06	11.66	20.15	0.00	0.00	0.00	0.00
274.59	531.03	1,201.41	576.10	395.54	504.21	616.05
18,821.18	13,454.05	13,186.83	12,546.99	18,638.79	5,681.81	20,194.98

Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
6,563.13	7,205.65	13,120.88	12,377.85	10,100.44	5,971.77	13,072.44
(0.35)	0.00	0.00	0.00	0.00	0.00	0.00
232.67	235.67	251.35	263.71	376.52	315.95	331.76
25.55	72.62	44.42	35.26	36.35	31.10	29.98
257.87	308.29	295.78	298.97	412.87	347.05	361.74
6,305.26	6,897.35	12,825.11	12,078.88	9,687.57	5,624.72	12,710.70

15,951.83	6,247.93	9,635.98	13,139.09	19,235.73	18,071.53	21,685.70
95.64	341.74	247.00	241.91	96.55	403.63	745.01
2.00	9.96	5.34	17.32	5.80	1.97	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.65	351.70	252.33	259.23	102.34	405.60	745.01
15,854.18	5,896.23	9,383.65	12,879.85	19,133.39	17,665.94	20,940.69

Total
204,521.03

1,183.70
3,285.03
993.09

5,461.82

199,059.21

	% FE	% NF
186,320.83	99.6%	0.4%

8,465.46
354.73
0.00

8,820.19

177,500.65

Total
155,366.65

396.99
2,893.08
843.99

4,134.05

151,232.60

	%FE	%NF
--	-----	-----

174,630.82	99.8%	0.2%
------------	-------	------

7,714.33

252.08

49.88

8,016.29

166,614.53

Total

145,578.67

382.51

3,436.77

486.41

4,305.69

141,272.98

%FE %NF

178,861.86	99.8%	0.2%
------------	-------	------

2,612.53

66.63

0.00

2,679.16

176,182.69

Napuck Salvage of Waupaca, LLC
2018 - 2020
UOM = Gross Tons

Calendar 2018		Jan-18	Feb-18	Mar-18
Purchases ALL		7,019.84	7,099.83	10,476.04
	RMT	614.68	231.58	892.03
	SSR	91.21	301.85	511.67
	RSR	295.00	248.37	238.00
Purchases related		1,000.89	781.80	1,641.71
Unrelated GT Purchased		6,018.95	6,318.03	8,834.33
Sales All		9,238.74	6,608.11	9,294.05
	RMT	140.22	0.00	11.41
	SSR	27.83	6.36	4.00
	RSR	0.82	0.70	0.00
Sales related		168.87	7.06	15.41
Unrelated GT Sold		9,069.87	6,601.05	9,278.64
Calendar 2019		Jan-19	Feb-19	Mar-19
Purchases ALL		6,385.34	6,828.38	6,951.57
	RMT	704.75	1,154.86	882.01
	SSR	231.18	124.76	
	RSR	64.26	130.91	283.95
Purchases related		1,000.19	1,410.53	1,165.96
Unrelated GT Purchased		5,385.14	5,417.85	5,785.61
Sales All		8,284.54	7,821.62	8,975.26
	RMT	0.00	0.00	12.55
	SSR	2.91	0.00	2.81
	RSR	0.00	0.00	0.00
Sales related		2.91	0.00	15.36
Unrelated GT Sold		8,281.63	7,821.62	8,959.90
Calendar 2020		Jan-20	Feb-20	Mar-20
Purchases ALL		8,331.65	4,759.12	3,114.43

	RMT	73.77	207.13	0.00
	SSR	42.32	37.94	5.01
	RSR	116.54	41.01	27.50
Purchases related		<u>232.63</u>	<u>286.08</u>	<u>32.51</u>
Unrelated GT Purchased		8,099.02	4,473.04	3,081.92
Sales All		7,704.61	7,320.52	5,971.61
	RMT	362.43	0.00	8.07
	SSR	0.00	0.00	0.00
	RSR	0.00	1.73	0.00
Sales related		<u>362.43</u>	<u>1.73</u>	<u>8.07</u>
Unrelated GT Sold		7,342.19	7,318.79	5,963.54

Apr-18	May-18	Jun-18	Jul-18	Aug-18
10,787.38	10,245.56	9,291.52	9,137.43	8,093.38
890.75	368.24	1,313.97	286.33	815.95
393.10	415.88	72.37	54.74	111.98
116.30	157.18	61.30	81.03	181.02
1,400.14	941.30	1,447.63	422.11	1,108.95
9,387.24	9,304.27	7,843.89	8,715.33	6,984.43
8,618.35	8,977.16	6,413.65	8,241.79	7,744.42
882.21	0.00	0.00	0.00	0.00
1.67	0.00	0.00	5.60	0.16
0.00	2.36	0.00	0.00	18.66
883.88	2.36	0.00	5.60	18.82
7,734.48	8,974.79	6,413.65	8,236.19	7,725.60

Apr-19	May-19	Jun-19	Jul-19	Aug-19
6,013.18	5,189.67	5,043.38	4,263.01	6,683.51
638.05	458.84	422.12	348.79	1,312.09
	96.22	55.09	18.75	59.13
100.92	126.78	78.62	36.83	53.83
738.97	681.83	555.83	404.37	1,425.05
5,274.21	4,507.84	4,487.56	3,858.64	5,258.46
8,056.84	7,640.27	6,072.58	6,706.45	8,617.45
12.79	0.00	12.49	288.11	0.00
2.97	0.00	0.00	0.00	0.00
1.79	36.99	18.99	0.00	0.00
17.55	36.99	31.48	288.11	0.00
8,039.30	7,603.28	6,041.10	6,418.33	8,617.45

Apr-20	May-20	Jun-20	Jul-20	Aug-20
1,660.11	3,700.78	6,139.42	4,710.51	5,796.94

0.00	270.68	36.30	231.60	247.43
122.02	449.08	1,320.67	486.70	145.84
178.96	1.49	1.03		4.10
<hr/>				
300.98	721.25	1,358.00	718.29	397.37
1,359.12	2,979.53	4,781.41	3,992.22	5,399.57
1,289.90	6,137.16	5,643.80	6,826.90	7,051.94
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	24.11	0.00
0.00	0.00	1.02	0.00	7.67
<hr/>				
0.00	(0.00)	1.02	24.11	7.67
1,289.90	6,137.16	5,642.78	6,802.80	7,044.27

Sep-18	Oct-18	Nov-18	Dec-18	Total
6,106.20	6,209.81	6,210.67	6,724.57	97,402.22
910.19	1,005.54	573.20	568.90	8,471.34
66.76	36.46		516.43	2,572.45
232.16	57.34	126.97	50.62	1,845.27
1,209.11	1,099.33	700.17	1,135.95	12,889.06
4,897.09	5,110.48	5,510.50	5,588.62	84,513.16
7,698.94	8,483.38	5,449.14	6,330.62	93,098.36
0.00	129.50	0.00	0.00	1,163.34
0.00	0.00	0.00	0.00	45.61
0.00	0.00	1.00	0.00	23.55
0.00	129.50	1.00	0.00	1,232.50
7,698.94	8,353.88	5,448.14	6,330.62	91,865.85

% FE
77.3%

Sep-19	Oct-19	Nov-19	Dec-19	Total
6,336.02	5,530.82	4,369.88	8,128.49	71,723.25
568.12	326.56	397.24	478.20	7,691.62
28.78	120.57	165.69	157.09	1,057.25
118.68	185.64	86.71	76.80	1,343.93
715.58	632.76	649.64	712.09	10,092.80
5,620.44	4,898.06	3,720.24	7,416.40	61,630.45
6,885.34	7,975.07	5,718.82	4,146.50	86,900.73
0.00	0.00	0.00	(0.00)	325.94
63.68	124.76	0.00	0.00	197.12
10.15	0.00	0.00	1.59	69.51
73.82	124.76	0.00	1.59	592.57
6,811.52	7,850.31	5,718.82	4,144.91	86,308.16

% FE
77.0%

Sep-20	Oct-20	Nov-20	Dec-20	Total
6,065.50	6,213.90	4,668.31	7,966.47	63,127.13

242.25	96.96	360.79	743.24	2,510.14	
64.96	87.37	42.64	41.00	2,845.55	
29.20	47.27		2.72	449.82	
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	
336.41	231.60	403.43	786.96	5,805.51	
5,729.08	5,982.31	4,264.88	7,179.52	57,321.63	
7,034.20	5,563.72	6,029.86	5,210.37	71,784.59	% FE 78.4%
0.00	0.00	0.00	0.00	370.50	
0.00	0.00	0.00	0.00	24.11	
0.00	1.50	0.00	0.00	11.92	
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	
0.00	1.50	0.00	0.00	406.52	
7,034.20	5,562.23	6,029.86	5,210.37	71,378.07	

%NF
22.7%

%NF
23.0%

%NF
21.6%

South Shore Recycling
2018 - 2020
UOM = Gross Tons

Calendar 2018		Jan-18	Feb-18	Mar-18
Purchases ALL		694.51	762.47	1,100.21
	RMT	30.43	11.44	15.30
	NOW	3.62	4.61	0.00
	RSR	0.00	8.49	6.11
Purchases related		34.05	24.55	21.41
Unrelated GT Purchased		660.46	737.92	1,078.79
Sales All		627.67	805.24	973.38
	RMT	508.89	619.44	898.54
	NOW	0.00	0.00	0.00
	RSR	4.13	0.00	0.00
Sales related		513.02	619.44	898.54
Unrelated GT Sold		114.65	185.80	74.84
Calendar 2019		Jan-19	Feb-19	Mar-19
Purchases ALL		658.16	518.41	864.89
	RMT	10.13	6.89	47.20
	NOW	2.91	0.00	0.00
	RSR	85.28	76.06	48.81
Purchases related		98.32	82.95	96.01
Unrelated GT Purchased		559.85	435.46	768.88
Sales All		884.83	487.61	825.13
	RMT	467.35	364.89	314.98
	NOW	0.00	0.00	0.00
	RSR	0.00	0.00	3.44
Sales related		467.35	364.89	318.42
Unrelated GT Sold		417.48	122.72	506.71
Calendar 2020		Jan-20	Feb-20	Mar-20
Purchases ALL		882.88	597.77	605.12

	RMT	6.54	8.20	7.34
	NOW	0.00	0.00	0.00
	RSR	44.94	40.18	24.74
Purchases related		<hr/> 51.48	<hr/> 48.38	<hr/> 32.09
Unrelated GT Purchased		831.41	549.39	573.03
Sales All		948.28	688.67	601.00
	RMT	598.13	374.57	318.89
	NOW	0.00	0.00	0.00
	RSR	0.00	0.00	2.88
Sales related		<hr/> 598.13	<hr/> 374.57	<hr/> 321.77
Unrelated GT Sold		350.15	314.11	279.24

Apr-18	May-18	Jun-18	Jul-18	Aug-18
1,085.66	829.76	968.93	633.47	885.23
10.57	10.31	6.62	6.45	8.23
0.00	0.00	0.00	5.60	0.00
3.14	0.00	39.51	46.79	82.35
13.71	10.31	46.13	58.83	90.59
1,071.95	819.45	922.80	574.63	794.64
949.11	958.43	911.98	630.11	1,008.74
740.05	731.65	341.26	256.54	330.66
0.00	0.00	0.00	0.00	0.00
0.00	4.59	0.00	0.00	0.00
740.05	736.24	341.26	256.54	330.66
209.06	222.19	570.72	373.57	678.09
Apr-19	May-19	Jun-19	Jul-19	Aug-19
672.83	634.97	787.05	479.72	676.66
32.67	18.97	12.71	4.61	24.98
0.00	0.00	0.00	0.00	0.00
53.77	48.85	42.49	55.41	41.78
86.44	67.82	55.20	60.02	66.76
586.39	567.15	731.85	419.70	609.90
475.20	884.37	706.09	702.54	531.82
158.39	275.50	433.00	173.76	249.94
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.02	0.00
158.39	275.50	433.00	178.78	249.94
316.81	608.88	273.10	523.75	281.88
Apr-20	May-20	Jun-20	Jul-20	Aug-20
336.00	846.90	1,680.37	752.52	657.21

1.80	4.64	2.00	104.74	5.34
0.00	0.00	0.00	12.05	0.00
11.91	19.27	9.26	19.46	14.01
<hr/>				
13.71	23.91	11.27	136.25	19.34
322.29	822.99	1,669.10	616.27	637.87
419.78	736.53	1,674.57	1,025.29	715.67
194.95	616.54	1,547.00	721.52	397.19
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	2.58
<hr/>				
194.95	616.54	1,547.00	721.52	399.77
224.83	120.00	127.57	303.78	315.89

Sep-18	Oct-18	Nov-18	Dec-18	Total
556.75	857.72	604.03	792.77	9,771.50
7.04	67.41	8.31	204.41	386.51
0.00	0.00	0.00	0.00	13.83
47.46	98.68	77.56	60.34	470.44
54.50	166.09	85.87	264.75	870.78
502.26	691.64	518.16	528.02	8,900.72
507.56	824.40	474.53	973.75	9,644.89
220.31	272.23	255.95	681.97	5,857.48
0.00	0.00	0.00	0.00	0.00
4.99	0.00	0.00	0.00	13.70
225.29	272.23	255.95	681.97	5,871.18
282.27	552.16	218.59	291.78	3,773.72

% FE
84.1%

Sep-19	Oct-19	Nov-19	Dec-19	Total
784.73	745.76	382.98	646.14	7,852.30
30.11	192.26	4.78	6.58	391.88
63.68	0.00	0.00	0.00	66.59
48.25	52.49	24.41	27.27	604.85
142.03	244.74	29.18	33.85	1,063.32
642.70	501.01	353.79	612.29	6,788.98
842.58	738.99	419.63	606.83	8,105.62
343.19	368.07	304.66	505.05	3,958.76
0.00	0.00	0.00	0.00	0.00
0.00	2.21	0.00	0.00	10.67
343.19	370.27	304.66	505.05	3,969.43
499.39	368.72	114.97	101.78	4,136.20

% FE
79.5%

Sep-20	Oct-20	Nov-20	Dec-20	Total
649.11	773.79	675.41	699.91	9,157.01

17.32	5.80	1.97	0.00	165.70	
0.00	0.00	0.00	0.00	12.05	
9.18	27.68	27.93	28.66	277.22	
<hr/>					
26.50	33.47	29.90	28.66	454.96	
622.61	740.32	645.51	671.25	8,702.04	
641.89	777.30	706.08	622.69	9,557.75	% FE 84.9%
328.67	463.89	358.60	372.76	6,292.69	
0.00	0.00	0.00	0.00	0.00	
0.00	1.76	0.00	0.00	7.22	
<hr/>					
328.67	465.65	358.60	372.76	6,299.91	
313.22	311.65	347.48	249.93	3,257.84	

% NF
15.9%

% NF
20.5%

% NF
15.1%

RSR Partners, LLC
Chicago
2018-2020

	01/2018	02/2018
Outbound Lbs.		
Useable Equipment	844,895	500,989
Electronic Scrap		
-Internal lbs	660,800	577,482
-External lbs	763,883	1,196,092
Waste-Rubbish	218,800	191,780
Universal waste	5,051	73,612
Total Outbound Lbs	2,493,429	2,539,955
	2,493,429	2,539,955
	-	-
Inbound Lbs.		
Electronic Scrap to be refurbished/reclyed/repared	2,666,536	2,235,073

03/2018	04/2018	05/2018	06/2018	07/2018	08/2018	09/2018
592,312	477,452	331,649	157,360	216,296	248,248	381,132
695,734	483,255	596,085	486,055	498,910	962,710	557,043
1,425,648	1,132,978	1,055,753	1,391,365	1,033,968	1,202,609	1,065,129
205,900	221,620	158,260	193,180	162,220	154,000	134,500
-	10,277	31,579	44,656	2,510	71,753	45,890
<hr/>						
2,919,594	2,325,582	2,173,326	2,272,616	1,913,904	2,639,320	2,183,694
2,919,594	2,325,582	2,173,326	2,272,616	1,913,904	2,639,320	2,183,694
-	-	-	-	-	-	-
2,447,387	2,151,786	2,067,966	2,117,188	1,925,920	2,412,500	2,068,465

10/2018	11/2018	12/2018	2018 TOTAL	01/2019	02/2019
313,945	346,320	302,267	4,712,865	409,449	404,969
539,675	689,340	498,337	7,245,426	481,239	623,971
1,416,718	881,994	694,335	13,260,472	1,168,884	913,176
222,000	215,140	186,540	2,263,940	214,360	193,540
24,418	44,523	28,153	382,422	2,582	64,461
<hr/> 2,516,756	<hr/> 2,177,317	<hr/> 1,709,632	<hr/> 27,865,125	<hr/> 2,276,514	<hr/> 2,200,117
2,516,756	2,177,317	1,709,632	27,865,125	2,276,514	2,200,117
-	-	-	-	-	-
2,764,491	2,012,957	2,310,071	27,180,340	1,892,171	2,021,004

03/2019	04/2019	05/2019	06/2019	07/2019	08/2019	09/2019
335,986	304,881	280,293	195,260	331,067	236,082	214,057
961,726	587,698	554,180	387,171	347,745	365,482	540,712
1,164,565	1,167,950	984,239	860,485	890,649	1,040,170	935,237
182,320	203,080	183,920	130,600	151,700	145,940	172,500
21,563	5,155	22,466	2,491	42,677	53,902	9,124
<hr/>						
2,666,160	2,268,764	2,025,098	1,576,007	1,763,838	1,841,576	1,871,630
2,666,160	2,268,764	2,025,098	1,576,007	1,763,838	1,841,576	1,871,630
-	-	-	-	-	-	-
1,641,220	1,834,136	1,875,115	1,619,399	1,837,092	1,941,337	1,798,023

10/2019	11/2019	12/2019	2019 TOTAL	01/2020	02/2020
414,466	282,157	193,780	3,602,447	426,945	263,722
747,991	348,290	282,738	6,228,943	485,426	294,530
1,175,901	801,719	865,861	11,968,836	1,108,099	764,236
119,840	122,500	136,500	1,956,800	131,500	70,800
5,033	5,045	2,489	236,988	39,889	14,724
<hr/> 2,463,231	<hr/> 1,559,711	<hr/> 1,481,368	<hr/> 23,994,014	<hr/> 2,191,859	<hr/> 1,408,012
2,463,231	1,559,711	1,481,368	23,994,014	2,191,859	1,408,012
-	-	-	-	-	-
2,274,240	1,318,816	1,577,086	21,629,639	2,138,189	1,473,167

03/2020	04/2020	05/2020	06/2020	07/2020	08/2020	09/2020
303,184	248,798	291,142	217,597	319,308	206,779	333,210
237,753	491,378	92,105	80,527	204,459	141,353	165,422
571,987	578,894	593,110	280,495	314,851	384,351	324,357
67,220	39,780	77,880	79,660	61,280	70,980	88,580
3,805	46,746	1,298	-	23,855	16,992	4,497
<hr/>						
1,183,949	1,405,596	1,055,535	658,279	923,753	820,455	916,066
1,183,949	1,405,596	1,055,535	658,279	923,753	820,455	916,066
-	-	-	-	-	-	-
1,237,360	652,705	528,361	800,317	1,019,469	912,402	1,140,235

10/2020	11/2020	12/2020	2020 TOTAL
384,295	263,554	417,214	3,675,748
253,443	123,958	132,638	2,702,992
581,692	474,063	393,929	6,370,064
141,240	108,460	129,800	1,067,180
2,653	-	6,122	160,581
<hr/>			
1,363,323	970,035	1,079,703	13,976,565
1,363,323	970,035	1,079,703	13,976,565
-	-	-	
1,270,820	1,052,537	1,380,998	13,606,560

RSR Waste shipments

Rubbish	Waste	
	2-Jan-20	368003 MILLENNIUM R #290008 RUBBISH
	3-Jan-20	368004 MILLENNIUM R #290008 RUBBISH
	6-Jan-20	368005 MILLENNIUM R #290008 RUBBISH
	7-Jan-20	368006 MILLENNIUM R #290008 RUBBISH
	8-Jan-20	368007 MILLENNIUM R #290008 RUBBISH
	8-Jan-20	368008 MILLENNIUM R #290008 RUBBISH
	9-Jan-20	368009 MILLENNIUM R #290008 RUBBISH
	10-Jan-20	368010 MILLENNIUM R #290008 RUBBISH
	27-Jan-20	368011 MILLENNIUM R #290008 RUBBISH
	28-Jan-20	368012 MILLENNIUM R #290008 RUBBISH
	28-Jan-20	368013 MILLENNIUM R #290008 RUBBISH
	28-Jan-20	368014 MILLENNIUM R #290008 RUBBISH
	29-Jan-20	368015 MILLENNIUM R #290008 RUBBISH
	30-Jan-20	368016 MILLENNIUM R #290008 RUBBISH
	30-Jan-20	368017 MILLENNIUM R #290008 RUBBISH
	31-Jan-20	368018 MILLENNIUM R #290008 RUBBISH
	10-Feb-20	368019 MILLENNIUM R #290008 RUBBISH
	10-Feb-20	368020 MILLENNIUM R #290008 RUBBISH
	11-Feb-20	368021 MILLENNIUM R #290008 RUBBISH
	11-Feb-20	368022 MILLENNIUM R #290008 RUBBISH
	12-Feb-20	368023 MILLENNIUM R #290008 RUBBISH
	12-Feb-20	368024 MILLENNIUM R #290008 RUBBISH
	12-Feb-20	368025 MILLENNIUM R #290008 RUBBISH
	13-Feb-20	368026 MILLENNIUM R #290008 RUBBISH
	14-Feb-20	368027 MILLENNIUM R #290008 RUBBISH
	14-Feb-20	368028 MILLENNIUM R #290008 RUBBISH
	17-Feb-20	368029 MILLENNIUM R #290008 RUBBISH
	18-Feb-20	368030 MILLENNIUM R #290008 RUBBISH
	19-Feb-20	368031 MILLENNIUM R #290008 RUBBISH
	20-Feb-20	368032 MILLENNIUM R #290008 RUBBISH
	24-Feb-20	368033 MILLENNIUM R #290008 RUBBISH
	25-Feb-20	368034 MILLENNIUM R #290008 RUBBISH
	26-Feb-20	368035 MILLENNIUM R #290008 RUBBISH
	27-Feb-20	368036 MILLENNIUM R #290008 RUBBISH
	28-Feb-20	368037 MILLENNIUM R #290008 RUBBISH
	9-Mar-20	368038 MILLENNIUM R #290008 RUBBISH
	10-Mar-20	368039 MILLENNIUM R #290008 RUBBISH
	11-Mar-20	368040 MILLENNIUM R #290008 RUBBISH
	12-Mar-20	368041 MILLENNIUM R #290008 RUBBISH
	13-Mar-20	368042 MILLENNIUM R #290008 RUBBISH
	20-Mar-20	368043 MILLENNIUM R #290008 RUBBISH
	23-Mar-20	368044 MILLENNIUM R #290008 RUBBISH
	25-Mar-20	368045 MILLENNIUM R #290008 RUBBISH
	25-Mar-20	368046 MILLENNIUM R #290008 RUBBISH

26-Mar-20	368047	MILLENNIUM R #290008	RUBBISH
31-Mar-20	368048	MILLENNIUM R #290008	RUBBISH
6-Apr-20	368049	MILLENNIUM R #290008	RUBBISH
16-Apr-20	368050	MILLENNIUM R #290008	RUBBISH
21-Apr-20	368051	MILLENNIUM R #290008	RUBBISH
28-Apr-20	368052	MILLENNIUM R #290008	RUBBISH
30-Apr-20	368053	MILLENNIUM R #290008	RUBBISH
5-May-20	368054	MILLENNIUM R #290008	RUBBISH
5-May-20	382445	MILLENNIUM R #290008	RUBBISH
7-May-20	382446	MILLENNIUM R #290008	RUBBISH
11-May-20	382447	MILLENNIUM R #290008	RUBBISH
12-May-20	382448	MILLENNIUM R #290008	RUBBISH
14-May-20	382449	MILLENNIUM R #290008	RUBBISH
21-May-20	382450	MILLENNIUM R #290008	RUBBISH
21-May-20	382451	MILLENNIUM R #290008	RUBBISH
27-May-20	382452	MILLENNIUM R #290008	RUBBISH
27-May-20	382453	MILLENNIUM R #290008	RUBBISH
2-Jun-20	382454	MILLENNIUM R #290008	RUBBISH
2-Jun-20	382455	MILLENNIUM R #290008	RUBBISH
8-Jun-20	382456	MILLENNIUM R #290008	RUBBISH
10-Jun-20	382457	MILLENNIUM R #290008	RUBBISH
10-Jun-20	382458	MILLENNIUM R #290008	RUBBISH
15-Jun-20	382459	MILLENNIUM R #290008	RUBBISH
19-Jun-20	382460	MILLENNIUM R #290008	RUBBISH
23-Jun-20	382461	MILLENNIUM R #290008	RUBBISH
26-Jun-20	382462	MILLENNIUM R #290008	RUBBISH
1-Jul-20	382463	MILLENNIUM R #290008	RUBBISH
8-Jul-20	382464	MILLENNIUM R #290008	RUBBISH
8-Jul-20	382465	MILLENNIUM R #290008	RUBBISH
13-Jul-20	382466	MILLENNIUM R #290008	RUBBISH
15-Jul-20	382467	MILLENNIUM R #290008	RUBBISH
20-Jul-20	382468	MILLENNIUM R #290008	RUBBISH
23-Jul-20	382469	MILLENNIUM R #290008	RUBBISH
28-Jul-20	382470	MILLENNIUM R #290008	RUBBISH
3-Aug-20	382471	MILLENNIUM R #290008	RUBBISH
4-Aug-20	382472	MILLENNIUM R #290008	RUBBISH
7-Aug-20	382473	MILLENNIUM R #290008	RUBBISH
12-Aug-20	382474	MILLENNIUM R #290008	RUBBISH
13-Aug-20	382475	MILLENNIUM R #290008	RUBBISH
14-Aug-20	382476	MILLENNIUM R #290008	RUBBISH
19-Aug-20	382477	MILLENNIUM R #290008	RUBBISH
24-Aug-20	382478	MILLENNIUM R #290008	RUBBISH
31-Aug-20	382479	MILLENNIUM R #290008	RUBBISH
31-Aug-20	382480	MILLENNIUM R #290008	RUBBISH
3-Sep-20	382481	MILLENNIUM R #290008	RUBBISH
4-Sep-20	382482	MILLENNIUM R #290008	RUBBISH
11-Sep-20	382483	MILLENNIUM R #290008	RUBBISH

14-Sep-20	382484 MILLENNIUM R #290008	RUBBISH
14-Sep-20	382485 MILLENNIUM R #290008	RUBBISH
16-Sep-20	382486 MILLENNIUM R #290008	RUBBISH
18-Sep-20	382487 MILLENNIUM R #290008	RUBBISH
18-Sep-20	382488 MILLENNIUM R #290008	RUBBISH
22-Sep-20	382489 MILLENNIUM R #290008	RUBBISH
23-Sep-20	382490 MILLENNIUM R #290008	RUBBISH
25-Sep-20	382491 MILLENNIUM R #290008	RUBBISH
28-Sep-20	382492 MILLENNIUM R #290008	RUBBISH
30-Sep-20	382493 MILLENNIUM R #290008	RUBBISH
1-Oct-20	382494 MILLENNIUM R #290008	RUBBISH
1-Oct-20	382495 MILLENNIUM R #290008	RUBBISH
5-Oct-20	382496 MILLENNIUM R #290008	RUBBISH
6-Oct-20	382497 MILLENNIUM R #290008	RUBBISH
8-Oct-20	382498 MILLENNIUM R #290008	RUBBISH
8-Oct-20	382499 MILLENNIUM R #290008	RUBBISH
9-Oct-20	382500 MILLENNIUM R #290008	RUBBISH
19-Oct-20	408921 MILLENNIUM R #290008	RUBBISH
20-Oct-20	382501 MILLENNIUM R #290008	RUBBISH
20-Oct-20	382502 MILLENNIUM R #290008	RUBBISH
20-Oct-20	382503 MILLENNIUM R #290008	RUBBISH
21-Oct-20	408919 MILLENNIUM R #290008	RUBBISH
21-Oct-20	408920 MILLENNIUM R #290008	RUBBISH
22-Oct-20	408918 MILLENNIUM R #290008	RUBBISH
23-Oct-20	382504 MILLENNIUM R #290008	RUBBISH
26-Oct-20	408924 MILLENNIUM R #290008	RUBBISH
28-Oct-20	408925 MILLENNIUM R #290008	RUBBISH
29-Oct-20	408923 MILLENNIUM R #290008	RUBBISH
30-Oct-20	408922 MILLENNIUM R #290008	RUBBISH
3-Nov-20	408926 MILLENNIUM R #290008	RUBBISH
5-Nov-20	408927 MILLENNIUM R #290008	RUBBISH
5-Nov-20	408928 MILLENNIUM R #290008	RUBBISH
10-Nov-20	408929 MILLENNIUM R #290008	RUBBISH
12-Nov-20	408930 MILLENNIUM R #290008	RUBBISH
12-Nov-20	408931 MILLENNIUM R #290008	RUBBISH
17-Nov-20	408932 MILLENNIUM R #290008	RUBBISH
17-Nov-20	408933 MILLENNIUM R #290008	RUBBISH
19-Nov-20	408934 MILLENNIUM R #290008	RUBBISH
20-Nov-20	408935 MILLENNIUM R #290008	RUBBISH
20-Nov-20	408936 MILLENNIUM R #290008	RUBBISH
25-Nov-20	408937 MILLENNIUM R #290008	RUBBISH
25-Nov-20	408938 MILLENNIUM R #290008	RUBBISH
2-Dec-20	408939 MILLENNIUM R #290008	RUBBISH
2-Dec-20	408940 MILLENNIUM R #290008	RUBBISH
4-Dec-20	408941 MILLENNIUM R #290008	RUBBISH
7-Dec-20	408942 MILLENNIUM R #290008	RUBBISH
9-Dec-20	408943 MILLENNIUM R #290008	RUBBISH

9-Dec-20	408944 MILLENNIUM R #290008	RUBBISH
11-Dec-20	408945 MILLENNIUM R #290008	RUBBISH
11-Dec-20	408946 MILLENNIUM R #290008	RUBBISH
14-Dec-20	408947 MILLENNIUM R #290008	RUBBISH
15-Dec-20	408948 MILLENNIUM R #290008	RUBBISH
15-Dec-20	408949 MILLENNIUM R #290008	RUBBISH
16-Dec-20	408950 MILLENNIUM R #290008	RUBBISH
17-Dec-20	408951 MILLENNIUM R #290008	RUBBISH
18-Dec-20	408952 MILLENNIUM R #290008	RUBBISH
21-Dec-20	408953 MILLENNIUM R #290008	RUBBISH
21-Dec-20	408954 MILLENNIUM R #290008	RUBBISH
22-Dec-20	408955 MILLENNIUM R #290008	RUBBISH
23-Dec-20	408956 MILLENNIUM R #290008	RUBBISH
23-Dec-20	408957 MILLENNIUM R #290008	RUBBISH
28-Dec-20	408958 MILLENNIUM R #290008	RUBBISH
30-Dec-20	408959 MILLENNIUM R #290008	RUBBISH

Universal Waste

9,600	22-Jan-20	364114	#170008
8,360	22-Jan-20	364114	#170007
4,700	28-Jan-20	372709	#170004
8,940	31-Jan-20	364119	#170009
6,080	31-Jan-20	364119	#170006
9,600	31-Jan-20	364119	#170001
8,060	31-Jan-20	364119	#170002
6,240	3-Feb-20	373868	#170008
4,200	3-Feb-20	373868	#170007
7,900	17-Feb-20	375844	#170004
7,000	28-Feb-20	377657	#170007
7,580	24-Mar-20	379563	#170004
5,060	30-Mar-20	381573	#170007
8,400	14-Apr-20	383368	#170005
7,800	27-Apr-20	384645	#170007
7,000	30-Apr-20	383715	#170004
7,040	29-May-20	388776	#170007
8,560	10-Jul-20	394531	#170004
7,360	15-Jul-20	388295	#170009
9,460	15-Jul-20	388295	#170006
9,600	31-Jul-20	388289	#170001
5,260	7-Aug-20	398172	#290002
9,460	18-Aug-20	399787	#170004
6,220	14-Sep-20	402648	#170004
7,840	28-Sep-20	404623	#170004
7,840	30-Sep-20	404669	#170007
7,320	22-Oct-20	408319	#170004
5,780	29-Oct-20	409324	#170007
6,940	2-Dec-20	413484	#170008
4,860	2-Dec-20	413484	#170007
3,480	15-Dec-20	415905	#170004
8,220	29-Dec-20	416989	#170007
2,320	29-Jan-21	421610	#170007
6,540	4-Feb-21	421669	#170006
4,100	2-Mar-21	425455	#170007
6,940			
8,340			
9,420			
7,260			
5,180			
6,100			
8,600			
5,400			
1,340			

1,040
7,600
7,420
8,740
6,800
7,440
9,380
7,860
8,300
9,560
5,780
7,140
9,120
10,060
4,040
9,860
6,160
8,160
10,840
9,000
7,960
8,340
8,100
8,780
9,460
9,020
9,960
5,680
6,760
7,500
10,080
7,960
6,320
7,020
7,520
7,000
6,700
7,660
6,560
3,900
7,380
6,800
8,300
9,160
4,980
6,300
7,020

6,540
8,640
10,280
6,740
4,920
7,040
7,040
6,620
5,900
6,560
6,340
5,120
6,280
7,420
7,720
9,100
8,000
5,840
8,280
6,580
9,660
6,780
11,740
7,340
5,220
6,260
7,480
9,020
7,060
5,900
9,040
8,120
7,060
8,940
5,800
11,260
12,360
6,220
9,580
8,220
8,040
7,920
5,980
8,120
15,220
5,780
4,380

11,480
5,080
5,620
7,360
6,220
8,040
5,540
5,560
6,740
5,300
4,720
7,640
7,140
3,880
8,760
5,360

CELL PHONE BATTERIES	1,673
LITHIUM-ION LAPTOP BATTERIES	4,058
ALKALINE BATTERIES	2,506
LITHIUM PRIMARY BATTERIES	7,964
LITHIUM-POLYMER BATTERIES	13,607
NICAD BATTERIES	3,681
NIMH BATTERIES	6,400
CELL PHONE BATTERIES	1,697
LITHIUM-ION LAPTOP BATTERIES	6,561
ALKALINE BATTERIES	2,517
LITHIUM-ION LAPTOP BATTERIES	3,949
ALKALINE BATTERIES	2,492
LITHIUM-ION LAPTOP BATTERIES	1,313
LEAD ACID BATTERIES	42,840
LITHIUM-ION LAPTOP BATTERIES	1,307
ALKALINE BATTERIES	2,599
LITHIUM-ION LAPTOP BATTERIES	1,298
ALKALINE BATTERIES	1,983
LITHIUM PRIMARY BATTERIES	8,887
LITHIUM-POLYMER BATTERIES	9,463
NICAD BATTERIES	3,522
MERCURY LAMPS	15,953
ALKALINE BATTERIES	1,039
ALKALINE BATTERIES	1,167
ALKALINE BATTERIES	1,006
LITHIUM-ION LAPTOP BATTERIES	2,324
ALKALINE BATTERIES	1,364
LITHIUM-ION LAPTOP BATTERIES	1,289
CELL PHONE BATTERIES	1,522
LITHIUM-ION LAPTOP BATTERIES	1,322
ALKALINE BATTERIES	1,988
LITHIUM-ION LAPTOP BATTERIES	1,290
LITHIUM-ION LAPTOP BATTERIES	1,271
LITHIUM-POLYMER BATTERIES	2,496
LITHIUM-ION LAPTOP BATTERIES	1,269

Freight Analysis Sales Shipments

Ticket #	Shipment #	Customer	BR	Grade	Ship Date	Vehicle #	Gross Tare	Adj Net	SO #		
TUJH72	389779	REPUBLIC SERVICES, INC	WP	WASTE	1/9/2020	TK 361	36	13	0	22 32360-REP-01	
TUJI01	390327	REPUBLIC SERVICES, INC	WP	WASTE	1/14/2020	TK 631	35	13	0	21 32360-REP-01	
TUJI13	390613	REPUBLIC SERVICES, INC	WP	WASTE	1/15/2020	TK TUJI13	36	13	0	23 32360-REP-01	
TUJN20	399626	REPUBLIC SERVICES, INC	WP	WASTE	3/27/2020	TK TUJN20	37	13	0	24 32360-REP-02	
TUJP44	402531	REPUBLIC SERVICES, INC	WP	WASTE	5/14/2020	TK 360	32	13	0	19 32360-REP-03	
TUJP50	402658	REPUBLIC SERVICES, INC	WP	WASTE	5/15/2020	TK 360	26	13	0	13 32360-REP-03	
TUJT20	406786	REPUBLIC SERVICES, INC	WP	WASTE	7/17/2020	TK 343	34	13	0	21 32360-REP-04	
TUJT50	407026	REPUBLIC SERVICES, INC	WP	WASTE	7/22/2020	TK 343	33	13	0	20 32360-REP-04	
TUJT81	407473	REPUBLIC SERVICES, INC	WP	WASTE	7/28/2020	TK 343	34	13	0	21 32360-REP-04	
TUJT97	407566	REPUBLIC SERVICES, INC	WP	WASTE	7/29/2020	TK 343	35	13	0	22 32360-REP-04	
TUJV16	409124	REPUBLIC SERVICES, INC	WP	WASTE	8/18/2020	TK 371	31	13	0	18 32360-REP-05	
TUJW88	410755	REPUBLIC SERVICES, INC	WP	WASTE	9/10/2020	TK 371	35	13	0	22 32360-REP-06	
TUJY32	412966	REPUBLIC SERVICES, INC	WP	WASTE	10/7/2020	TK TUJY32	33	13	0	20 32360-REP-07	
TUJY35	413773	REPUBLIC SERVICES, INC	WP	WASTE	10/13/2020	TK 371	32	13	0	19 32360-REP-07	
TUJY90	414527	REPUBLIC SERVICES, INC	WP	WASTE	10/21/2020	TK 371	33	13	0	20 32360-REP-07	
TUJZ08	415035	REPUBLIC SERVICES, INC	WP	WASTE	10/26/2020	TK 371	32	13	0	19 32360-REP-07	
TUJZ38	417519	REPUBLIC SERVICES, INC	WP	WASTE	11/19/2020	TK 371	32	13	0	19 32360-REP-07	
TUKB55	418072	REPUBLIC SERVICES, INC	WP	WASTE	11/30/2020	TK 01	33	13	0	20 32360-REP-08	
TUKB56	418092	REPUBLIC SERVICES, INC	WP	WASTE	11/30/2020	TK TUKB56	34	13	0	20 32360-REP-08	
TUKC09	419269	REPUBLIC SERVICES, INC	WP	WASTE	12/10/2020	TK 1	30	13	0	17 32360-REP-09	
TUKC55	420298	REPUBLIC SERVICES, INC	WP	WASTE	12/18/2020	TK TUKC55	33	13	0	20 32360-REP-09	
TUKD19	420883	REPUBLIC SERVICES, INC	WP	WASTE	12/28/2020	TK TUKD19	33	13	0	19 32360-REP-09	
							Totals:	730	291	0	439

Branch: WP - WASH PLANT NAPUCK

Start date: 01/01/20

End date: 12/31/20

Carrier: REPUBLIC SERVICES INC

Mode: All Vehicle Modes

03/22/2021

Generator Activity by Date Range

Customer: 365562

From: 01/01/2020

To: 12/31/2020

Generator: 423304 RMT MAINTENANCE
11600 S BURLEY AVE
CHICAGO, IL 60617

WO #: 00-00E3AXM **Invoice:** 16082037 **Service Date :** 01/13/2020 **Reimbursement:** Check

Product	Unit #	Qty	Price	Total Cost	Ret Gals	Gals Sold	WS #	Equipment Area
306 - USED OIL SERVICE		2,710	\$0.00	\$0.00			423304-10-54	
310 - TRIP FEE - USED OIL SER		1	\$0.00	\$0.00				
316 - BS&W		140	\$0.00	\$0.00			423304-10-54	
WO Totals				\$0.00				

WO #: 00-00EJDLB **Invoice:** 16228635 **Service Date :** 04/14/2020 **Reimbursement:** Check

Product	Unit #	Qty	Price	Total Cost	Ret Gals	Gals Sold	WS #	Equipment Area
306C - USED OIL PICKUP - CHAR		2,000	\$0.00	\$0.00			423304-10-54	
310 - TRIP FEE - USED OIL SER		1	\$65.00	\$65.00				
WO Totals				\$65.00				

WO #: 00-00G75AL **Invoice:** 16421691 **Service Date :** 08/27/2020 **Reimbursement:** Check

Product	Unit #	Qty	Price	Total Cost	Ret Gals	Gals Sold	WS #	Equipment Area
306C - USED OIL PICKUP - CHAR		700	\$0.00	\$0.00			423304-10-54	
306C - USED OIL PICKUP - CHAR		550	\$0.00	\$0.00			423304-10-54	
310 - TRIP FEE - USED OIL SER		1	\$0.00	\$0.00				
WO Totals				\$0.00				

WO #: 00-00GB3S4 **Invoice:** 16456305 **Service Date :** 09/21/2020 **Reimbursement:** Check

Product	Unit #	Qty	Price	Total Cost	Ret Gals	Gals Sold	WS #	Equipment Area
306C - USED OIL PICKUP - CHAR		375	\$0.00	\$0.00			423304-10-54	
310 - TRIP FEE - USED OIL SER		1	\$0.00	\$0.00				
WO Totals				\$0.00				

Generator Totals \$65.00

**Fugitive Particulate Operating Program
South Chicago Property Management, Ltd.
IEPA ID No.: 031600GYI**

March 17, 2020

**11600 S Burley Avenue
Chicago, Illinois**

Fugitive Particulate Operating Program
South Chicago Property Management, Ltd.

1.0 INTRODUCTION	3
1.1 Facility Location and Contact Information	3
1.2 Illinois Environmental Protection Agency Fugitive Emission Regulatory Requirements	4
1.2.1 General Limitation for Fugitive Particulate Matter – 35 IAC 212.301	4
1.2.2 Requirement to Prepare and Implement a Fugitive Particulate Operating Program	4
1.3 Visible Emissions	4
1.4 Site Boundaries.....	5
2.0 FACILITY SITE MAP	5
3.0 FACILITY OPERATIONS AND APPLICATION OF BEST MANAGEMENT PRACTICES FOR FUGITIVE PARTICULATE CONTROL	5
3.1 Inbound Material Unloading/Handling	7
3.2 Shearing/Breaking	8
3.3 Torch Cutting	9
3.4 Material Transfer Points	10
3.5 Material Stockpiles	11
3.6 Indoor Processing Buildings	12
3.7 Material Loading/Loadout	13
3.8 Barge Loading/Unloading	13
3.9 Paved Areas	14
3.10 Unpaved Areas	15
3.11 Downwind Property Line.....	17
4.0 ADDITIONAL DESCRIPTION OF BEST MANAGEMENT PRACTICES FOR FUGITIVE PARTICULATE CONTROL	17
4.1 Periodic Visible Emissions Observations	18
4.2 Meteorological Data Station	18
4.3 Dust Boss	18
4.4 Paved and Unpaved Areas	19
4.4.1 Water Truck for Paved and Unpaved Areas	19
4.4.2 Sweeper for Paved Areas	19
4.4.3 Posted Speed Limits	19
4.5 Other Particulate Control Measures	19

**Fugitive Particulate Operating Program
South Chicago Property Management, Ltd.**

4.5.1	Dust Collectors	20
4.5.2	Process Line Water Spray	20
4.5.3	Water Curtain	20
4.6	Maintenance of Fugitive Particulate Control Equipment	21
5.0	RECORDKEEPING	21
5.1	Meteorological Data	21
5.2	Visible Emissions Observation and Control Form	21
5.3	Control Measures Log	22
5.3.1	Water Truck Log	22
5.3.2	Sweeper Log	22
5.3.3	Dust Boss Log	22
5.4	Fugitive Particulate Control Equipment Maintenance	22
6.0	PROGRAM AMENDMENT	23
 TABLES		
Table 3-1	Summary of Facility Operations and Best Management Practices for Fugitive Dust Control	7
 FIGURES		
Figure 1	Facility Location Map.....	25
Figure 2	Facility Layout Map	26
Figure 3	SCPM Fugitive Source Locations	27
 FORMS		
	RMT Scrap Yard Daily VEOC Form Preview	29
	RMT Screening Plant Daily VEOC Form Preview.....	30
	NSW Daily VEOC Form Preview	31
	SSR Daily VEOC Form Preview	32
	SCPM Campus Daily VEOC Form Preview.....	33
	Control Measures Log Preview	34

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

1.0 Introduction

This Fugitive Particulate Operating Program (Program) has been prepared for the South Chicago Property Management, Ltd. (SCPM) scrap recycling industrial campus as a voluntary action to ensure it is satisfying requirements set forth in 35 IAC 212 Subpart K. This plan will incorporate parts of 35 IAC 212 Subpart K, satisfying requirements of sections 212.309, 212.310, 212.312, and incorporates requirements of 212.324.

SCPM is the landlord for a group of independent but related scrap recycling facilities located in the heart of an existing established industrial district, well buffered from residential areas. The SCPM campus is configured to process over 500,000 tons per year of recyclable metals in mixed forms to produce various grades of both ferrous and non-ferrous commodities. SCPM is composed of four sources operating as a single source: Reserve FTL, LLC dba Reserve Marine Terminals (RMT), Napuck Salvage of Waupaca, LLC (NSW), South Shore Recycling, LLC (SSR), and RSR Partners, LLC dba Regency Technologies (RSR).

The objective of this Program is to identify, monitor, and treat (as may be necessary) sources of fugitive particulate emissions generated at this campus that could threaten to cross the property line of this campus. SCPM is implementing this Program as part of SCPM's commitment to be a good neighbor, a good steward of the environment, and to meet or exceed applicable environmental standards (identified in Section 1.2) to be protective of human health and the environment.

1.1 Facility Location and Contact Information

<u>Business Name:</u>	South Chicago Property Management, Ltd.
<u>Source Location:</u>	11600 South Burley Ave., Chicago, Illinois 60617 Hyde Park Township, Cook County Illinois
<u>Latitude/Longitude:</u>	41.685201° N / -87.545847° W – Approximate Location of Front Gate
<u>Office/Mailing Address:</u>	11600 South Burley Ave., Chicago, Illinois 60617 Hyde Park Township, Cook County Illinois
<u>Authorized Representative Responsible for this Program:</u>	Mr. Dennis Stropko – Environmental, Health, and Safety Manager 440-287-7216 – dennisstropko@reserve-group.com
<u>IEPA Site ID #:</u>	Issued by IEPA – To Be Determined
<u>SIC Code:</u>	5093 – Scrap and Waste Materials

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

NAICS Code: 423930 – Recyclable Material Merchant
Wholesalers

1.2 Illinois Environmental Protection Agency – Fugitive Emissions Regulatory Requirements

1.2.1 General Limitation for Fugitive Particulate Matter – 35 IAC 212.301

SCPM is subject to the general limitation for fugitive particulate matter identified in 35 IAC 212.301, which requires that:

No Person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity that is visible by an observer looking generally toward the zenith at a point beyond the property line of the source.

1.2.2 Requirements to Prepare and Implement a Fugitive Particulate Operating Program

Pursuant to 35 IAC 212.302, a Fugitive Particulate Operating Program is required for any facility with operations belonging to specified groups of Standard Industrial Classification (SIC) Codes and that are located within a specified area. SCPM is located in Cook County, which is a specified area under 35 IAC 212.302; however, SCPM's SIC Code (5093 Scrap and Waste Materials) is not among the specified SIC codes. Therefore, SCPM is not subject to the requirement to have a Fugitive Particulate Operating Program.

Although not required by IEPA regulations, SCPM has voluntarily agreed to prepare and implement this Fugitive Particulate Operating Program to describe the best management practices that will be used to minimize potential fugitive particulate emissions from crossing facility property lines and to ensure compliance with 35 IAC 212.301.

1.3 Visible Emissions

For the purposes of this Program, the presence of Visible Emissions means the existence of a visible particulate matter that threatens to cross the industrial campus property line pursuant to the following rule under 35 IAC 212.301:

No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity that is

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

visible by an observer looking generally toward the zenith at a point beyond the property line of the source

Fugitive particulate matter does not include steam, engine combustion exhaust, or permitted emissions discharged through a stack.

1.4 Site Boundaries

For the purposes of this Program, the “property line,” as referenced in 35 IAC 212.301, is the Site Boundary identified in Figure 2.

2.0 Facility Site Map

The location of the SCPM campus is shown on Figures 1 and 2. SCPM is the landlord of a 147 acre industrial campus located at 11600 South Burley Avenue in Chicago, Illinois. Within this industrial campus, a 25 acre section is leased to General III, LLC, another affiliate of SCPM.

The property boundaries and location of metal recycling facilities are shown on Figure 2. Surveys of the SCPM property show that the west facility property line extends approximately 69-feet into the River in the areas identified on Figure 2. However, for the purposes of this plan, observations and dust mitigation activities will recognize the physical boundary (seawall) on the west side of the property.

The Fugitive Source Location Map (Figure 3) indicates the locations of buildings, material handling and processing areas, stockpiles, truck scales and facility vehicle routes.

General III has developed a separate Fugitive Operating Program, and this plan is intended to compliment and dove tail with the GIII plan in order to ensure campus-wide observations, coverage and controls, regardless of source location.

In the industrial complex, there are paved and unpaved roadways. Areas that are not paved are covered with compacted gravel and/or asphalt grindings.

3.0 Facility Operations and Application of Best Management Practices for Fugitive Particulate Control

The four entities operating on the SCPM campus are all involved in similar but different activities associated with the recycling of ferrous and non-ferrous scrap metals and electronics. Collectively, scrap handling and processing activities include: material receipt, sorting, shredding, breaking, baling, shearing, torch cutting, metal separation, ferrous/non-ferrous metals recovery, stockpiling, and off-site shipment of finished products.

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

Inbound materials are delivered to the campus from a variety of sources including commercial/industrial accounts via trucks, contract haulers, barge, and rail. Additionally, SSR receives some items from peddlers via peddler vehicles. Peddlers and semi-trucks entering the facility first pass through a truck scale equipped with a fixed radiation detector.

Facility specific activities include the following:

Reserve Marine Terminals operates an indoor foundry sand/scrap recovery operation and also conducts outdoor scrap processing activities including sorting, shearing, breakage and torch cutting. Napuck Salvage of Waupaca operates an indoor aluminum and cast iron recycling processes that utilizes crushing, shredding, screening, and washing. South Shore Recycling operates a small indoor/outdoor ferrous/non-ferrous scrap recycling center and processes scrap metal through sorting, shearing and torch cutting. RSR Partners (Regency Technologies) operates an indoor electronics recycling operation that is limited to manual material breakdown and some limited baling; and has no process emissions.

Fugitive particulate matter does not include particulate matter emitted from a properly permitted process line with or without a pollution control device because each permitted source has a separate emission limit assigned to it. The indoor shredding and crushing processes described above are not considered fugitive emissions as they come from a process source covered under the ROSS permitting system. Equipment and best management practices used to control these processes are addressed in this Program.

The campus-wide fugitive emissions generated at SCPM come from sources including: inbound material unloading/handling, shearing/breaking, torch cutting, material transfer points, material stockpiles, indoor processing emissions that migrate out of the building, material loading/loadout, traffic areas-unpaved and paved, and barge loading/unloading.

Table 1 summarizes facility operations with the potential to generate fugitive particulate and the Best Management Practices (BMPs) that will be utilized to achieve compliance with 35 IAC 212.301. The objective of this Plan is to prevent visible emissions from crossing facility property lines. This is accomplished through a combination of documented and informal observations made throughout the day as well as implementation of appropriate control measures when needed. All areas/operations at the campus are subject to a daily observations and those areas/activities that are deemed to present an elevated potential for the generation of fugitive emissions will be formally observed two time/day. These areas will primarily include material transfer activities and roadways. For the purposes of this Program, compliance with 35 IAC 212.301 is determined at the site boundary (i.e. the property line of the industrial campus as shown on Figure 2). Detailed descriptions of the BMPs are presented in Section 4.0.

**Fugitive Particulate Operating Program
South Chicago Property Management, Ltd.**

**Table 3-1 – Summary of Facility Operations and Best Management Practices
For Fugitive Particulate Control**

Operation	Best Management Practices				
	Periodic Inspections/Observations*	Application of Water ^a	Sweeping/Watering of Paved Areas	Watering of Unpaved Areas	Additional BMPs That May Be Used ^b
Inbound Material Unloading/Handling	X	X	X	X	Minimize drop distances and apply water when required to minimize generation of fugitive dust during material transfers.
Shearing/Breaking	X	X			Water application to material.
Torch Cutting	X	X			Use of shearing or breaking as an alternative to torch cutting for size reduction when appropriate.
Material Transfer Points	X	X	X	X	Minimize drop distance when transferring materials.
Material Stockpiles	X	X			Minimize drop distances and apply water when required to minimize generation of fugitive dust during material transfers.
Indoor Processing at RMT and NSW (not a fugitive emission source)	X	X	X		Enclosed in a building with some processes routed through dust collectors. Daily housekeeping.
Material Loading/Loadout	X	X	X	X	Minimize drop distances and apply water when required to minimize generation of fugitive dust during material transfers.
Barge Loading/Unloading	X	X			Specific observations for fugitive dust during barge loading and unloading.
Traffic Areas – Paved Areas	X	X	X		Clean-up of spilled granular material with the potential of generating fugitive dust.
Traffic Areas – Unpaved Areas	X	X		X	Application of chemical surfactants if necessary, in cold weather months.
Property Lines	X		X	X	Identify the source(s) of Visible Emissions and take corrective actions

* Wind Socks are strategically positioned throughout the campus to assist with evaluating wind speed/direction.

- a. Water may be applied by water atomizing Dust Bosses, sprinklers, hoses, water trucks or other methods.
- b. Additionally, local supervisors and operators are trained to watch for the generation of fugitive dust throughout the course of the day, and are directed to notify management who will implement appropriate controls to minimize the potential for fugitive dust to cross the property line.

3.1 Inbound Material Unloading/Handling

Inbound scrap in bulk trucks (semi-trailers) is off loaded to the ground near the specified process area via dumping, magnet or grapple. For RMT, this may be within

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

the outdoor scrap yard or indoors at the screening operation. RMT does receive some material via rail and vessel. These commodities are typically offloaded via magnet or grapple cranes and then transferred to processing areas. For NSW, some limited material is received outdoors, with most material delivered indoors at/near the appropriate process areas. NSW does receive some material via rail and utilizes magnet/grapple cranes to offload. For SSR, most material is received at an outdoor dock area, with some limited receipt indoors. Most material delivered to SSR is off-loaded by hand via peddlers. With all operations, grapple cranes, magnets, and loaders are utilized to sort through and transfer material to designated areas/piles.

A. Inspections/Observations

- i. Trained personnel will conduct visual observations of the material unloading and handling areas for the presence of Visible Emissions once per day and record the results on a Visible Emissions Observation and Control (VEOC) form. If Visible Emissions are identified, observers will notify the facility manager who will be responsible for deployment of fugitive particulate control measures.

B. Fugitive Particulate Control Measures

- i. Water will be applied to material if/when fugitive dust generated from this activity has the potential to reach/cross the facility property line. Water will be applied using Dust Bosses, sprinklers, hoses, water trucks or other equivalent methods. Temporary curtailing of handling activities may also be used as an additional control.
- ii. Areas adjacent to material handling operations will be included in the watering and sweeping of paved and unpaved areas described in Sections 3.9 and 3.10.
- iii. During seasonally dry or windy periods, Dust Bosses and other watering controls may be implemented proactively in anticipation of dusty conditions.

3.2 Shearing/Breaking

Shearing involves physical size reduction of certain commodities through the use of large hydraulic shears attached to material handlers and designed to cut large ferrous and non-ferrous material into smaller pieces – typically 3' to 5' in length. This process

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

does not generate emissions, however daily observations are conducted to ensure that any potential emissions are managed and controlled. Breaking involves physical size reduction of foundry scrap through the use of drop balls and hydraulic hammers. These processes direct a forceful blow to a point on the material, causing it to fracture into smaller pieces and often at points of non-like materials. This process can generate very limited emissions and water is applied to material on a pro-active basis to minimize dust. Finished material is generally in the size range of 6" – 36".

C. Inspections/Observations

- i. Trained personnel will conduct visual observations of shearing/breaking operations for the presence of Visible Emissions once per day and record the results on a Visible Emissions Observation and Control (VEOC) form. If Visible Emissions are identified, observers will notify the facility manager who will be responsible for deployment of fugitive particulate control measures.

D. Fugitive Particulate Control Measures

- iv. Water will be applied to material if/when fugitive dust generated from this activity has the potential to reach/cross the facility property line. Water will be applied using Dust Bosses, sprinklers, hoses, water trucks or other equivalent methods. Temporary curtailing of handling activities may also be used as an additional control.
- v. Areas adjacent to shearing/breaking operations will be included in the watering and sweeping of paved and unpaved areas described in Sections 3.9 and 3.10.
- vi. During seasonally dry or windy periods, Dust Bosses and other watering controls may be implemented proactively in anticipation of dusty conditions.

3.3 Torch Cutting

Torch cutting involves utilizing oxygen/propane to power flame torches that are used to cut through various grades of scrap metal. This process has the potential to emit fugitive particulates (smoke) from the action of cutting through the metal.

A. Inspections/Observations

- i. Trained personnel will conduct visual observations of torch cutting operations for the presence of Visible Emissions when the torches are being utilized and

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

record the results on a Visible Emissions Observation and Control (VEOC) form. The observations will be made once per day while torches are being operated.

B. Fugitive Particulate Control Measures

- i. Water atomizers will be positioned to mist the area where torch cutting takes place if/when fugitive emissions generated from this activity have the potential to reach/cross the facility property line. Temporary curtailing of torching and material repositioning may also be used as additional controls.

3.4 Material Transfer Points

Material transfer points that have the ability to become windborne outdoors include the transfer of materials through magnets and buckets. Visible emissions may occur at a transfer point when material is dropped or dumped from a large distance to the intended location below (either a hopper/bin, the ground/stockpile, a truck, or a railcar), or when a magnet/bucket is dropped back onto the ground in an unpaved area. Operators are trained to minimize the drop distances by placing work as close to grade/pile as possible.

Inspections/Observations

- i. Trained personnel will conduct visual observations of material transfer operations for the presence of Visible Emissions when material is being transferred and record the results on a Visible Emissions Observation and Control (VEOC) form. The observations will be made once per day. If Visible Emissions are identified, observers will notify the facility manager who will be responsible for deployment of fugitive particulate control measures.
- ii. In the event that observations/conditions indicate an elevated potential for fugitive emissions exists with this activity, a second daily observation will be made to ensure controls are working and potential emissions are being managed.

A. Fugitive Particulate Control Measures

- i. Water will be applied to material if/when fugitive dust generated from this activity has the potential to reach/cross the facility property line. Water will be applied using Dust Bosses, sprinklers, hoses, water trucks or other

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

equivalent methods. Temporary curtailing of transfer activities may also be used as an additional control.

- ii. Areas adjacent to material transfer operations will be included in the watering and sweeping of paved and unpaved areas described in Sections 3.9 and 3.10.

3.5 Material Stockpiles

Material stockpiles are located in various areas throughout the campus. These stockpiles are utilized to store material either pre- or post-processing. Material stockpiles that may be stored for a longer period of time are in RMT's scrap yard. Material stored is generally larger in size and is not prone to windborne erosion and emissions generation; however, the potential exists during high wind conditions.

A. Inspections/Observations

- i. Trained personnel will conduct visual observations of the material stockpile areas for the presence of Visible Emissions once per day and record the results on a Visible Emissions Observation and Control (VEOC) form. If Visible Emissions are identified, observers will notify the facility manager who will be responsible for deployment of fugitive particulate control measures.
- ii. In the event that observations/ conditions indicate an elevated potential for fugitive emissions exists with this activity, a second daily observation will be made to ensure controls are working and potential emissions are being managed.

B. Fugitive Particulate Control Measures

- i. Water will be applied to material stockpiles if/when fugitive dust generated from this activity has the potential to reach/cross the facility property line. Water will be applied using Dust Bosses, sprinklers, hoses, water trucks or other equivalent methods. Temporary curtailing of transfer activities may also be used as an additional control.
- ii. Areas adjacent to material stockpiles will be included in the watering and sweeping of paved and unpaved areas described in Sections 3.9 and 3.10.

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

3.6 Indoor Processing Buildings at RMT and NSW

Particulate matter emitted from these indoor processes is not considered a fugitive emission source because the specific process are associated with permitted sources under the ROSS Program. Indoor Processing Buildings at RMT and NSW are each equipped with dust collectors that capture dust from specific points in the process using a network of duct work and hoods. Dust collected in the collection system is routed to fabric filters. Treated air from the baghouse is exhausted into the indoor atmosphere for RMT and the outdoor atmosphere for NSW. Particulate emissions in the dust collector exhaust stream are not fugitive emissions, and neither are emissions generated from processing material. During operations, NSW also utilizes a water spray to pre-wet material to minimize dust generation while it is being processed. At the RMT screening operation, a water curtain is utilized as needed during operating hours. This water curtain provides a control barrier between RMT Screening Operation and other areas within the building, deterring and preventing dust from migrating past the screening operation. Even though these processes are not considered fugitive, they were voluntarily included in this Program to cover all potential emission sources.

A. Inspections/Observations

- i. Trained personnel will conduct visual observations of conveyors, personnel doors, and bay/garage openings for the presence of Visible Emissions once per day and record the results on a VEOC form. If Visible Emissions are identified, observers will notify the Facility Manager who will be responsible for deployment of fugitive particulate control measures.

B. Fugitive Particulate Control Measures

- i. Water will be applied to material if/when fugitive dust generated from this activity has the potential to reach/cross the facility property line. Water will be applied using Dust Bosses, sprinklers, hoses, water trucks or other equivalent methods. Temporary curtailing of indoor processing may also be used as an additional control.
- ii. If Visible Emissions are observed from the building openings, the building and associated processes will be inspected to identify the emission source. Management will ensure that baghouses and other control measures are

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

functioning properly and may elect to temporarily close doors and other openings to minimize Visible Emissions from leaving the building.

3.7 Material Loading and Loadout

Material loading and loadout occurs when stockpiled material is transferred to trucks or railcars using loaders, magnets, or grapples.

A. Inspections/Observations

- i. Trained personnel will conduct visual observations of material loading and loadout areas for Visible Emissions while material is being loaded and record the results on a VEOC form. The observations will be made once per day. If Visible Emissions are identified, observers will notify the Facility Manager who will be responsible for deployment of fugitive particulate control measures.
- ii. In the event that observations/ conditions indicate an elevated potential for fugitive emissions exists with this activity, a second daily observation will be made to ensure controls are working and potential emissions are being managed.

B. Fugitive Particulate Control Measures

- i. Water will be applied to material if/when fugitive dust generated from this activity has the potential to reach/cross the facility property line. Water will be applied using Dust Bosses, sprinklers, hoses, water trucks or other equivalent methods. Temporary curtailing of material transfer activities may also be used as an additional control.
- ii. Areas adjacent to material loadout activity will be included in the watering and sweeping of paved and unpaved areas described in Sections 3.9 and 3.10.

3.8 Barge Loading/Unloading

Barge loading is performed using a crane, magnet, or grapple to transfer material from an adjacent area into a barge. Barge unloading is performed using a crane, magnet, or grapple to transfer material from a barge directly into trucks or railcars or onto the ground in an adjacent area.

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

The majority of material received by barge consists of large pieces of metal (bars, pipe, plates, etc.), which must be rigged individually or in small groups prior to transfer from the barge to the facility. The potential for these materials to generate Visible Emissions is minimal due to the characteristics of the materials and the slow pace of loading/unloading.

Observations during the start of loading/unloading of each barge will be performed to determine when controls are required and to verify the effectiveness of controls applied.

a. Inspections/Observations

- i. Trained personnel will conduct a visual observation corresponding to the initiation of the loading/unloading activity for each barge. Observations will be recorded on a Barge VEOC form. If the initial observation identifies Visible Emissions, loading/unloading activities will be suspended until controls are implemented. A second observation will then be performed and recorded after implementation of controls to verify the effectiveness of controls applied.

b. Fugitive Particulate Control Measures

- i. Water will be applied to material if/when fugitive dust generated from this activity has the potential to reach/cross the facility property line. Water will be applied using Dust Bosses, sprinklers, hoses, water trucks or other equivalent methods. Temporary curtailing of transfer activities may also be used as an additional control.
- ii. Areas adjacent to barge material loading/unloading activities will be included in the watering and sweeping of paved and unpaved areas described in Sections 3.9 and 3.10.

3.9 Paved Areas

Paved areas are paved with asphalt or concrete. The areas with the highest potential for fugitive particulate are the primary traffic routes used by vehicles transporting materials to or from the site. Application of water will be limited on days when precipitation exceeding ¼" occurs, or when temperatures are near/below freezing, as water application may create unsafe conditions. Paved roads are swept on a daily basis as a preventative measure.

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

A. Inspections/Observations

- i. Trained personnel will conduct visual observations of paved traffic routes for Visible Emissions record the results on a VEOC form. Paved traveled routes will be observed once per day.
- ii. In the event that observations/conditions indicate an elevated potential for fugitive emissions exists with this activity, a second daily observation will be made to ensure controls are working and potential emissions are being managed.

B. Fugitive Particulate Control Measures

- i. Water spray will be applied to campus-wide paved traffic areas at least once per day, subject to weather conditions identified above. Additional treatments may be made in response to employee observation.
- ii. Operation of the water truck will be documented in a water truck log that will identify the areas where water is applied, the approximate amount of water applied, the time of application, the name of the person operating the water truck, and the reason for application (i.e., routine daily application or in response to an employee observation).
- iii. Sweeping of designated traffic areas will occur at least once every day, based on daily observations and subject to the weather conditions identified above.
- iv. Operation of the sweeper will be documented in a sweeper log that will identify the areas swept, the time sweeping was performed, the name of the person operating the sweeper, and the reason for sweeping (i.e, routine daily sweeping or in response to an employee observation).
- v. Speed limit signs are posted at the entrance at facility and also along the traffic routes that state speed must be limited to 5 mph or below. This control is enforced on a daily basis.

3.10 Unpaved Areas

Unpaved areas in the facility are not paved with concrete or asphalt but are covered with compacted slag or asphalt grindings. Fugitive particulate emissions from unpaved areas are associated with vehicle use. Application of water will be limited

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

on days when precipitation exceeding ¼" occurs, or when temperatures are at or near freezing, as water application may create unsafe conditions.

A. Inspections/Observations

- i. Trained personnel will conduct visual observations of unpaved traffic routes for Visible Emissions record the results on a VEOC form. Travel routes will be observed once per day for the presence of fugitive emissions from roads. In the event that observations/conditions indicate an elevated potential for fugitive emissions exists with this activity, a second daily observation will be made to ensure controls are working and potential emissions are being managed.

B. Fugitive Particulate Control Measures

- i. Water will be applied to campus-wide unpaved traffic areas at least once per day, subject to weather conditions identified above. Additional applications may be made in response to observer and/or employee observations.
- ii. As a proactive measure, water applications occur throughout each day during dry periods, independent of visual observations.
- iii. Operation of the water truck will be documented in a water truck log that will identify the areas where water is applied, the approximate amount of water applied, the time of application, the name of the person operating the water truck, and the reason for application (i.e., routine daily application or in response to an employee observation).
- iv. If Visible Emissions are observed from unpaved areas during weather conditions that prohibit water application, other control measures will be evaluated. Evaluation and potential application of alternative control measures will be based on operating experience and routine observations. Alternative control measures may include, but are not limited to, minimizing activity in unpaved areas, application of surfactant or oil-based coatings prior to winter conditions, or placement of additional slag or asphalt grindings.
- v. Speed limit signs are posted at entrance at the facility and also along the traffic routes that state speed must be limited to 5 mph or below.

Fugitive Particulate Operating Program
South Chicago Property Management, Ltd.

3.11 Downwind Property Line

For the purposes of this Program, the “property line”, as referenced in 35 IAC 212.301., is the site boundary identified in Figure 2. Property line observations will be limited to the portion(s) of the industrial campus property lines that are, at the time of observation, downwind from material handling operations. SCPM will coordinate on a daily basis with GIII to ensure that all downwind property lines/boundaries are being monitored daily. Wind direction data used to identify the downwind property line(s) will be obtained from the on-site MET Station required by local regulations. Wind socks are positioned strategically throughout the campus to assist with monitoring wind speed and direction.

A. Inspections/Observations

- i. Trained personnel will conduct visual observations at least once per day of the downwind property line(s) of the industrial campus for the presence for Visible Emissions. Observations will be recorded on VEOC forms.

B. Fugitive Emission Control Measures

- i. Management will investigate the sources of observed emissions and attempt to implement appropriate control measures based on the cause. This may include among other things, pausing an operation until controls are implemented, applying water to roadways, or utilizing other water suppression methods to reduce emissions.
- ii. Daily housekeeping, sweeping and watering of paved and unpaved roadways is an ongoing control measure that proactively maintains a reduced level of dust that would otherwise contribute to fugitive emissions along perimeter roadways.

4.0 Additional Description of Best Management Practices for Fugitive Particulate Control

The following provides an additional description of the BMPs that will be implemented under this Program.

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

4.1 Periodic Visible Emissions Observations

As described in Section 3, designated trained personnel will make periodic observations once per day for the presence of Visible Emissions and have the authority to implement fugitive particulate control measures as may be required. Observations will be made according to the frequencies laid out in Section 3. Records of observations and dust control measures implemented (if any), are recorded on a VEOC form (see Section 5.2).

In the event that observations/conditions indicate an elevated potential for fugitive emissions exists within an area/activity, a second daily observation will be made to ensure controls are working and potential emissions are being managed. Wind socks are positioned strategically throughout the campus to assist with monitoring wind speed and direction.

4.2 Meteorological Data Station

An onsite meteorological data station (MET station) will be installed and operated to record hourly temperature, wind speed, wind direction, barometric pressure, relative humidity, and precipitation amounts. The MET station will be centrally located at a minimum height pursuant to USEPA and CDPH protocols and guidance. MET data will be downloaded and stored electronically at the facility.

4.3 Dust Boss

Dust Bosses are water atomizing cannons. The barrel of the cannon is equipped with a fan to force air through the barrel of the cannon at an elevated velocity. Water is injected into the air stream at the discharge of the barrel through specially designed atomizing nozzles. The velocity of the air stream directs the water droplets toward the source of the fugitive particulate, encapsulating and increasing the density of the particulate matter causing it to fall to the ground via gravity. Dust Bosses are used to control fugitive particulate emissions from conveyors, material transfer, stockpiles, roadways, and torch cutting. The cloud of atomized water above a particulate emission source may be mistaken for particulate matter by uninformed observers. The cloud of water droplets should not be read as particulate matter if crossing the property line. Dust Bosses can be located at ground level, building rooftops, or on supported columns in order to distribute the atomized water over the desired area(s). These units can operate in a stationary or reciprocating mode and

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

are directional. The deployment of Dust Bosses will be modified as needed based on facility operating conditions and experience.

4.4 Paved and Unpaved Areas

Paved and unpaved areas (including traffic routes) are routinely treated using water application and sweeping unless observed pavement conditions indicate it unnecessary, such as following a precipitation event. Application of water will be limited by near or below freezing temperatures in order to maintain safe operating conditions.

4.4.1 Water Truck for Paved and Unpaved Areas

Two water trucks owned and operated by SCPM are used to periodically apply water to accessible paved and unpaved areas. The water trucks make routine rounds in the areas identified in Figure 3. Application of water to paved and unpaved areas will be documented on a log.

4.4.2 Sweeper for Paved Areas

A motorized wet sweeper, owned and operated by SCPM, is used to periodically sweep paved areas. The sweeper makes at least one round every day in accessible areas. Routine sweeping of paved areas will be supplemented by additional sweeping as indicated by Visible Emissions observations detailed in Section 4.1. Sweeping of paved areas will be documented in a log.

4.4.3 Speed Limits

Speed limit signs are posted at the entrance of the facility and throughout the in-plant traffic routes. The speed is limited to 5 mph. This reduced speed limit minimizes dust kick up and thereby helps to reduce emissions associated with paved and unpaved roadways.

4.5 Other Particulate Control Measures

The following identifies other particulate control measures that will be implemented at this facility.

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

4.5.1 RMT Screening Operation and NSW Dust Collectors

These air pollution control systems consist of cartridge style dust collectors ducted to specific processes within the RMT screening operation and the NSW crushing/screening operation. These collectors **do not** control fugitive dust and are part of a permitted indoor process. This information was included in this Program to demonstrate other ways of particulate control utilized by SCPM, beyond fugitive particulate control. The collectors remove particulates released from the shredding, conveying, and crushing processes at these operations. Particulate matter generated in these processes is captured and transported via ducts into the dust collector systems. The captured air stream is then drawn through the fabric filter, where dust accumulates on the media surface. When the pressure drop across the filter increases to a set point, a mechanism shakes the filter to release dust from the dirty side of the filters, which is then deposited into sealed industrial bags, stored, and then shipped downstream to be reprocessed elsewhere. Particulate emissions from the baghouse that exhausts to the outside atmosphere are not considered fugitive emissions because the dust collector is permitted under the ROSS program and emission rates are subject to emission limits under ROSS.

4.5.2 NSW Process Line Water Spray

Before and during NSW's process line, atomizing water nozzles pre-wet material to minimize the dust generated during the process. The wetting of material allows small particles to cling to the material instead of becoming airborne. Particulate matter emitted from this process is not considered a fugitive emission source because the process has a maximum emission rate and specific opacity limits under the ROSS program. This water spray **does not** control fugitive dust and is part of a permitted indoor process. This information was included in this Program to demonstrate other ways of particulate control utilized by SCPM, beyond fugitive particulate control.

4.5.3 RMT Screening Operation Water Curtain

During operating hours, RMT's screening operation utilizes a water curtain. This device delivers a fine water mist that sprays water from the ceiling, effectively creating a water "curtain". This water curtain provides a dust control barrier between RMT screening operation and other areas of the building,

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

detering and preventing dust from migrating past the screening operation. Particulate matter emitted from this process is not considered a fugitive emission source because the process has a maximum emission rate and is subject to specific opacity limits under the ROSS program. This water curtain **does not** control fugitive dust and is part of a permitted indoor process. This information was included in this Program to demonstrate other ways of particulate control utilized by SCPM, beyond fugitive particulate control.

4.6 Maintenance of Fugitive Particulate Control Equipment

Maintenance of equipment used for fugitive particulate control, including Dust Bosses, water truck, and sweeper are performed by on-site personnel in accordance with manufacturers' recommendations.

5.0 Recordkeeping

The following records will be maintained pursuant to this Program in accordance with recordkeeping requirements identified in applicable IEPA air permits for this site.

5.1 Meteorological Data

Meteorological data will be recorded and maintained electronically on site. Data will include hourly temperature, wind speed, wind direction, barometric pressure, relative humidity, and precipitation amounts.

5.2 Visible Emissions Observation and Control Form

A visible Emissions Observation and Control (VEOC) Form will be used to record the results of routine Visible Emissions observations and corresponding control measures applied. Employee observations will not be recorded. The VEOC Forms are located electronically on an Excel document – Tabs 1-5. Previews are located in this Plan behind the Forms section.

The VEOC form includes the following information: the date/time, the name of observer, the areas observed, the time of observation, if Visible Emissions were present, approximate migration distance of emissions (in feet) from the source, if controls were required, and what controls were implemented (if any).

Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

5.3 Control Measures Log

A log of daily control measures has been developed to track the various controls that may be implemented on a daily basis as follows:

5.3.1 Water Truck Log

A log of daily water truck usage is maintained by the operator to record water applications to paved and unpaved areas. The Water Truck Log includes the following information: the date/time, the name of the water truck operator, the reason for water application: scheduled/continuous or corrective action in response to an employee observation, areas of water application, time of water application, and approximate amount of water applied (in gallons). The Water Truck Log form is located in the VEOC spreadsheet – Tab 6.

5.3.2 Sweeper Log

A log of sweeper operation will be maintained by the operator to record sweeping events. The Sweeper Log includes the following information: the date/time, the name of the sweeper operator, the reason for sweeping: scheduled or corrective action in response to an employee observation, areas swept, and time of sweeping. The Sweeper Log form is located in the VEOC spreadsheet – Tab 6.

5.3.3 Dust Boss Log

A log of Dust Boss operations will be maintained. The Dust Boss Log includes the following information: the date/time and the reason for operation: proactive or corrective action in response to an employee observation. The Dust Boss Log form is located in the VEOC spreadsheet – Tab 6.

5.4 Fugitive Particulate Control Equipment Maintenance

Records of maintenance performed on fugitive particulate control equipment will be maintained by the facility in accordance with permit recordkeeping requirements.

Fugitive Particulate Operating Program
South Chicago Property Management, Ltd.

6.0 Program Amendment

This Fugitive Particulate Operating Program shall be amended from time to time so that the operating program is current. Program amendments will be submitted to the Illinois EPA within thirty (30) days of such amendment. Any future revision to this Program made by SCPM is automatically incorporated by reference as an enforceable condition of the Lifetime Operating Permit, unless it is expressly disapproved, in writing, by the Illinois EPA. In the event that the Illinois EPA notifies SCPM of a deficiency with any revision to the Program, SCPM will revise and re-submit the Fugitive Particulate Operating Program within thirty (30) days of receipt of notification to address the deficiency.

Figures

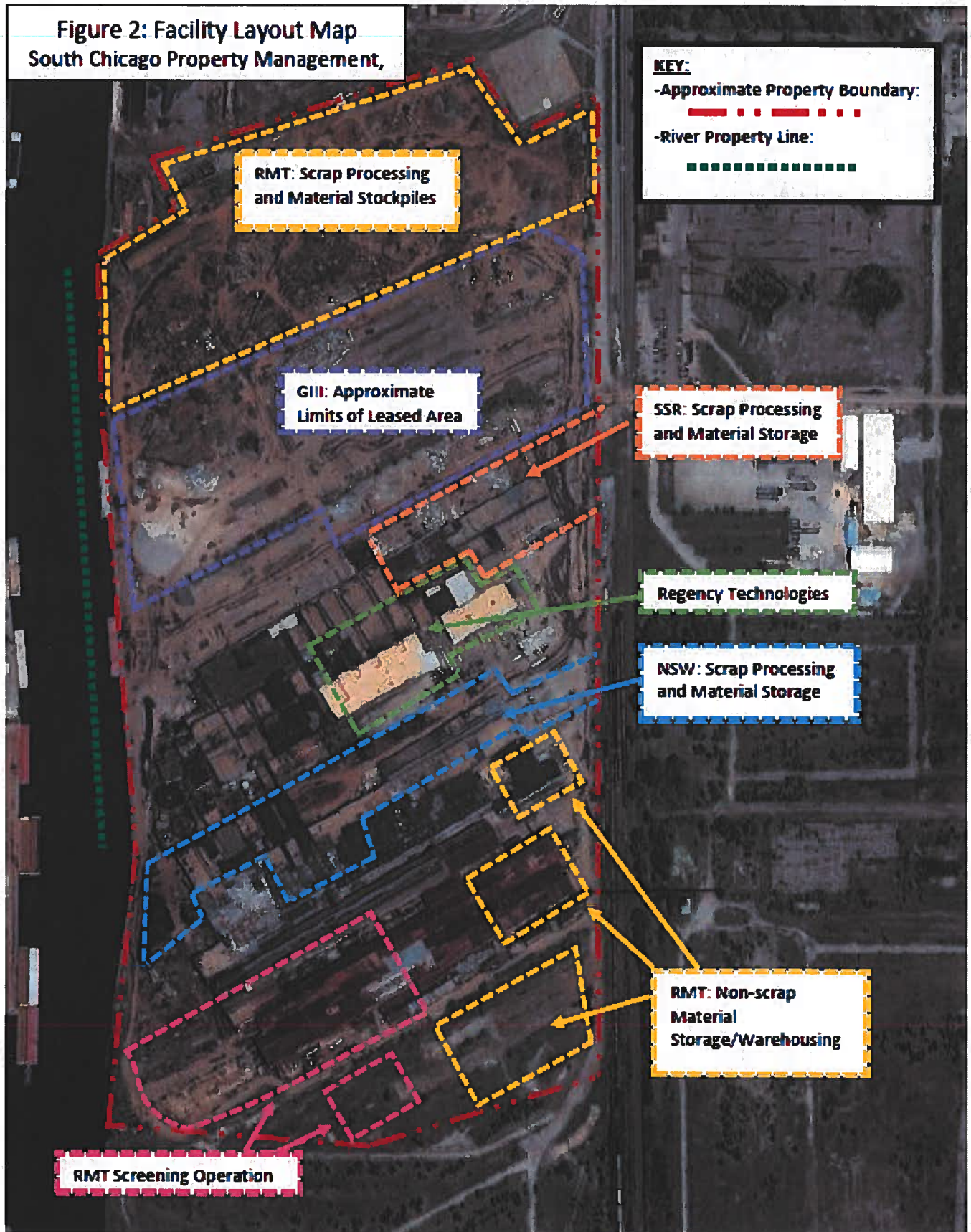
Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

Figure 1: Facility Location Map
South Chicago Property Management,

South Chicago Property Management, Ltd.
11600 South Burley Ave

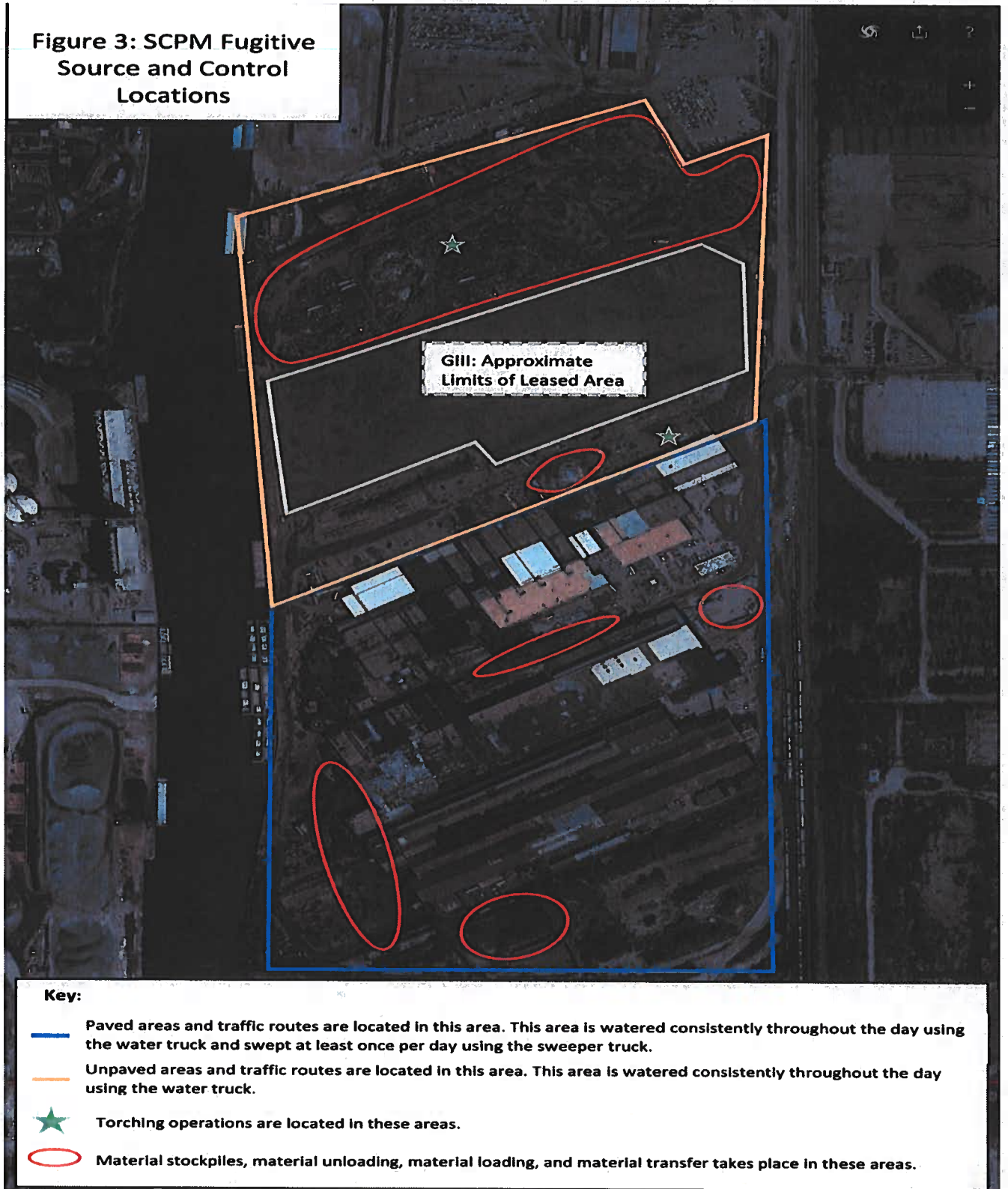


Fugitive Particulate Operating Program
South Chicago Property Management, Ltd.



Fugitive Particulate Operating Program South Chicago Property Management, Ltd.

Figure 3: SCPM Fugitive Source and Control Locations



Forms

The following forms are previews from an Excel document that contains the Daily VEOC forms and Control Measures Logs. Daily VEOC forms will be filled out for each operation and for campus related activities. Control Measure Logs will also be filled out on a daily basis based on demands from daily conditions and activities.

Control Measures Daily Log - SCPM Campus

Use this form to describe the use of control measures utilized each day. If a control measure is used multiple times per day as a continuous measure, explain that in the Reason for Water Application column.

Date:

Control Measure	Name of Operator	Time of Implementation	Area sprayed, swept, or watered?	Approximate amount of water applied from water truck? (gallons)	Reason for water application: proactive, scheduled/continuous, or corrective action in response to an employee observation?	If control measure was not utilized, explain reasoning why (weather not permitting, freezing temperatures, etc.):
Dust Boss	N/A			N/A		
Water Truck						
Sweeper Truck				N/A		



Golden Refrigerant

31800 Industrial Rd.
Livonia MI 48150
United States
(734) 793-1400

Invoice

Date	Invoice #
4/15/2019	51728

Bill To
Attn: Brian Murphy Regency Technologies 1831 E Highland Rd Twinsburg OH 44087 United States

RECEIVED APR 15 2019

Quantity	Units	Description	Rate	Amount	Tax	
		Terms	Due Date	PO #	Project	End Date
		Net 30	5/15/2019	SO325490		
461		Disposal of Mixed Refrigerant	3.50	1,613.50		
ALL COSTS/CREDITS ARE FROM EXCHANGE CYLINDERS PROCESSING IN MARCH 2019				Total	\$1,613.50	

POSTED
4/17

disposal fees.
15,400, 4060
W

SS



regencytechnologies

REGENCY TECHNOLOGIES, INC.
1831 HIGHLAND RD
TWINSBURG OH 44087

(330)474-3531

Invoice
313617

Shipping Address	GOLDEN REFRIGERANT INC 12901 NUBURGH RD
Shipping Instructions	FREIGHT PICKUP

Customer	GOLD001 GOLDEN REFRIGERANT INC 12901 NUBURGH RD
	LIVONIA, MI 4850 -
Telephone	

Sales Order	Invoice Date	Invoice Terms	Order Date	Ship Date	Salesperson	Customer Purchase Order #
325490	02/26/19	Net 30	02/25/19	02/26/19	Saba Salloum	1 of 1

Stock code	Description	Warehouse	Ship Quantity	Unit price	Gross amount
#290013	CFC TANKS	25	1,205.00	0.00	0.00

TRK#: 25073; NONE
 DIM: H: 0 x W: 40 x L: 48
 WHS: 25; LOC: PACK
 LBS: 15842
 BL# 20190228074639500

NOTES

Total gross	:	0.00
Total discount	:	0.00
Total freight	:	0.00
Misc charges	:	0.00
Total tax	:	0.00
Total net amount	:	<u>0.00</u>

The items purchased herein are subject to all applicable U.S. laws and regulations. The use, disposition, export and re-export of this material may also be subject to the following: the Arms Export Control Act (22 CFR 2751 et seq.); the Export Administration Act of 1979 (560 U.S.C. App. 2401 et seq.); International Traffic in Arms Regulations (22 CFR 120 et. seq.); Export Administration Regulations (15 CFR 730 et seq.); Foreign Assets Control Regulations (31 CFR 500 et seq.) the Espionage Act (37 U.S. C. 791 et seq.); and the Food, Drug and Cosmetic Act (21 U.S.C.311 et seq.). On occasion, in the interest of national security, there may be a request to return certain items previously sold.

PRODUCT R1200

STRAIGHT BILL OF LADING—SHORT FORM—ORIGINAL—NOT NEGOTIABLE

DESIGNATE WITH AN (X)
BY TRUCK FREIGHT

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that any service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

From **REGENCY TECHNOLOGIES**
At **CHICAGO, IL**

DATE **2/26/19** SHIPPER'S NO. **25073**
CARRIER **[arrow]** CARRIER'S NO.

CONSIGNEE AND DESTINATION

Golden Refrigerant

BY **Dayton**
ROUTE DELIVERING CARRIER

CAR OR VEHICLE INITIALS & NO.

NO. PACKAGES	HM	DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS	ERG #	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓
		UN 1578 Refrigerant gas, N.O.S. (Fluorinated Hydrocarbons), 2.2		1265 60 1205		
		SO# 325490 T#				

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

Per _____
(Signature of Consignor)

If charges are to be prepaid, write or stamp here, "To be Prepaid."

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier
Per _____

(The signature here acknowledges only the amount prepaid).

Charges Advanced: \$ _____

PLACARDS SUPPLIED YES NO

DRIVER'S SIGNATURE _____

EMERGENCY RESPONSE PHONE NO. _____

SHIPPER'S CERTIFICATION: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SIGNATURE _____ TITLE _____

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight". † Shipper's Imprints in lieu of stamp; not a part of Bill of Lading approved by the U.S. Dept. of Transportation.
Note - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____

C.O.D. SHIPMENT
C.O.D. Amt _____
Collection Fee _____
Total Charges _____

THIS SHIPMENT IS CORRECTLY DESCRIBED.
CORRECT WEIGHT IS _____ LBS.

†The fibre boxes used for this shipment conform to the specifications set forth in the box makers' certificate thereon, and all other requirements of the National Motor Freight Classification.

Per _____ Shipper

11600 SOUTH BURLEY AVE
CHICAGO, IL 60617

Shipper, Per _____

Agent, Per _____

Permanent post-office address of shipper

DV 283756 SA



Golden Refrigerant
31800 Industrial Rd.
Livonia, MI 48150
(734) 793-1400

Cylinder Processing Report for South Shore Recycling 2018 -2019

Date Received	Golden Tag No	Serial No.	New Weight (lbs.)	Type of Refrigerant
---------------	---------------	------------	-------------------	---------------------

On 8/30/2019 we received (24) cylinders from South Shore Recycling that are still in process.
A full report for those cylinders will be available around the end of September 2019.

Make	Model	Tier
SIERRA	T-500-5000LS	4
Komatsu	D58E-1	2
Taylor	Y30WOS	2
Taylor	Y45WO	2
Taylor	Y36WOS	2
Taylor	TY-450M	2
Taylor	Y52WOM	2
Taylor	TY62OL	2
Taylor	Y52WOM	2
Taylor	Y36WOS	2
Taylor	Y52WOM	2
Taylor	TE360L	2
Taylor	TY150	2
Taylor	Y52WOM	2
Taylor	TY36S	2
Toyota	7FGU30	3
Toyota	7FGU30	3
Toyota	7FGU30	3
Caterpillar	DP40K-D2	3
Hyster	H50FT	3
Caterpillar	GC40KLPSTR	3
Yale	GTP040	3
MAGNUM	MLT-3060	4
MAGNUM	MLT-3060	4
INGERSOL RAND		3
MAGNUM		3
Kohler	M#80R0281	3
Caterpillar	XQ200	3
Moxy	MT41	3
Terex	33-05	2
Hitachi	ZX450LCS-3	3
LINK BELT	318 - C	2
Hitachi	EX700	3
Komatsu	PC-300-6	3
Liebherr	A932	4
LINKBELT	318 - E	3
Liebherr	R954	3
Caterpillar	350	2
Komatsu	PC400	3
EXODUS	MX447HDR	4
Liebherr	A944C	3
Komatsu	400 - LC-5	3
Komatsu	PC750LC	3
Komatsu	PC-400-6	3

Liebherr	A934C	4
Liebherr	A934C	4
Liebherr	A954 B	3
Broderson	IC80	3
Sennebogen	830M	4
Sennebogen	830M	4
Komatsu	PC600LC-8	3
Fuchs	MHL340	4
GENIE	S60	4
GENIE	S60	4
Buffalo Turbine	Monsoon BT-MGC2EFI	4
Caterpillar	252B	3
JCB	300 ECO	3
Caterpillar	988B	2
Caterpillar	988B	2
Caterpillar	980C	2
Caterpillar	988B	2
Caterpillar	910K	4
Caterpillar	924H	4
Caterpillar	988G	2
Komatsu	WA380-8	4
Manitowoc	4100 WSII	3
VB 750 DK	720	4

Napuck Equipment

Equipment listing non-road

Make	Model	Tier
Caterpillar	DP45K	3
Caterpillar	DP40K	3
Yale	GLP060	4
Clark	C40	4
Clark	C50	4
Locomotive	LLX 14	2
Hitachi	ZX450 LC	3
Caterpillar	330BL	3
Barko	595MH	3
Liebherr	944B	3
Liebherr	924	3
Liebherr	902	3
Volvo	EW18013	3
Caterpillar	M325D	4
AutoCar	Xspotter	4
Caterpillar	262D	4
Caterpillar	252	4
Caterpillar	252 B3	4
Caterpillar	252 B3	4
Caterpillar	262D	4
Caterpillar	252 B3	4
Caterpillar	252 B3	4
Komatsu	WA200	3
Komatsu	WA200 - 5L	4
Komatsu	WA200	3
Caterpillar	950G	3
Komatsu	WA200	4

RSR Partners

Equipment List non-road

Regency Technologies	Caterpillar	2P6000	4
Regency Technologies	Caterpillar	2P6000	4
Regency Technologies	Caterpillar	GP30N	4
Regency Technologies	Caterpillar	GP30N	4
Regency Technologies	Caterpillar	GP30N	4
Regency Technologies	Caterpillar	GP30N5	4
Regency Technologies	Caterpillar	232D	4
Regency Technologies	Caterpillar	252 B3	4

Southshore Recycling

Equipment list - non road

Make	Model	Tier
Nissan	KUGH02A30V	3
Hyster	H70FT	3
Caterpillar	GPN30N5	4
Caterpillar	252B3	4
YALE	GLC050TFNUAEC82	3

South Chicago Property Management

Elign Pelican Sweeper	Model P	3
-----------------------	---------	---

South Shore Recycling

Safe Operating Procedures Universal Waste Lead Acid Battery Handling

South Shore Recycling – UW ID # ILR000171975
Universal Waste Handling Requirements and Regulations – Lead-Acid Batteries

Large quantity Universal Waste (UW) handlers are required to receive a facility ID number, which was obtained in 2012 and identifies South Shore Recycling as a Large Quantity Handler of UW batteries and mercury devices. Mismanagement of these items will designate the items as Hazardous Waste. There are several requirements for large quantity handlers of UW that must be met:

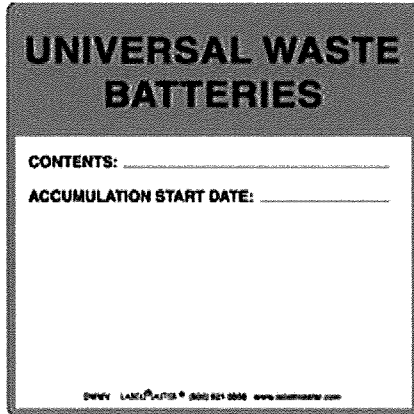
1. **Recordkeeping** – Maintain records of all UW shipments received and sent:
 - a. Records may be in the form of a log, invoice, manifest, bill of lading, or other shipping document. These records must be maintained for all battery shipments.
 - b. The records must be retained for at least three years from the date of a shipment leaving the facility.
2. **Storage time limit and labeling** – Universal waste can be stored for any period of time less than one year. The handler must be able to demonstrate compliance with this time limit by labeling the container with the earliest date of UW placement.
 - a. The date that the first battery is placed on a pallet will be the date that must be listed on the universal waste label, and must remain the listed date until shipment of that specific container/pallet.
3. **Further labeling requirements** – Along with the proper date, universal waste containers/ pallets must be labeled with:
 - a. For batteries: “Universal Waste – Batteries”
4. **Universal Waste Storage and Signage:**
 - a. All Universal Waste pallets are stored in “Universal Waste Storage Area”.
5. **The handler is prohibited from sending or taking the UW to a place other than another UW handler, a destination facility, or a foreign destination.**

South Shore Recycling Employee Safety Precautions
Universal Waste Lead-Acid Battery Handling Procedures

1. Always wear the proper safety equipment
 - o Hard hat
 - o Safety glasses
 - o Safety Gloves
 - o Steel toe Boots
2. All lead acid battery terminals must be protected from incidental contact. Batteries must be palletized in a manner so that terminals cannot contact each other. Cardboard layering is used to protect between layers of batteries.
3. Select a **sturdy pallet with no broken or missing boards**. Be sure there are **no nails sticking up**, which could puncture the batteries.
4. Place a **layer of cardboard on the pallet** to prevent the batteries from sliding off of the pallet.
5. Verify the battery is not leaking or damaged before attempting to handle.
6. If the battery is damaged or leaking, refer #10 instructions below.
7. Make the **first layer of batteries level and as close together as possible**.
 - **Short batteries** should be **placed in the center of layers**.
 - **Taller batteries** should be **placed on the top layer**
8. Place **sufficient cardboard** between all layers, including the top layer of batteries, to prevent the possibility of puncturing the batteries above and short circuit. **Place cardboard on top of pallet**.
9. Layers should be neatly, and tightly stacked, ensuring no batteries are overhanging the sheets of cardboard.
10. Damaged batteries that are not visibly leaking electrolyte, must be put in heavyweight polyethylene plastic bags, sealed with plastic tie, and placed in the middle of the top layer. Damaged batteries in poly bag should **NEVER** be placed along the outer perimeter of a pallet. Damaged or cracked batteries **should be placed at the center of the layer**.
11. All batteries must be secured to the pallet with stretch wrap. Stretch wrap works best if it is pulled tight before stretching it around the corners.
12. For additional clarification, attached packaging guidelines.
13. Apply a Universal Waste Label to all full pallets, Date label with Accumulation Start Date, and place in Universal Waste Battery storage area until shipment to approved battery

recycling facility. Universal wastes must be shipped within one year of Accumulation Start Date.

14. The following are examples of required Universal Waste Labels and Signage required:



THIS DOCUMENT IS TO ACCOMPANY ALL BATTERY LOADS. INCLUDE WITH CONTRACT

REGULAR CARDBOARD MAY BE USED IN PLACE OF HONEYCOMB OR WAFFLEBOARD

BATTERY PREPARATION

How to Properly Stack Used Batteries on Pallets

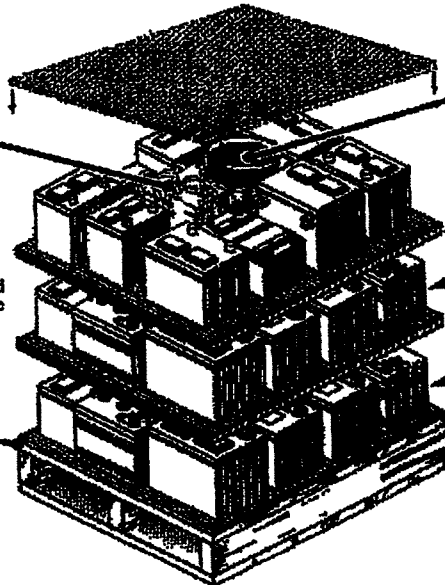
Details



Damaged batteries that are not visibly leaking electrolyte should be placed in strong poly bags and properly closed with an adjustable plastic tie and secured.



Make sure no batteries are overhanging



Cover wheel weight buckets with shrink wrap and place on top layer in the middle of the pallet.

Honeycomb cardboard

Batteries

Honeycomb cardboard

Batteries

Thin cardboard

Pallet

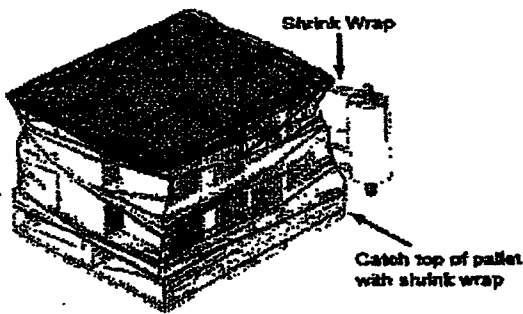


NOTE: Add top layer of batteries after shrink wrapping bottom 2 layers

WARNING: Arrange batteries so terminals do not touch. Terminals touching may cause a short and/or fire!

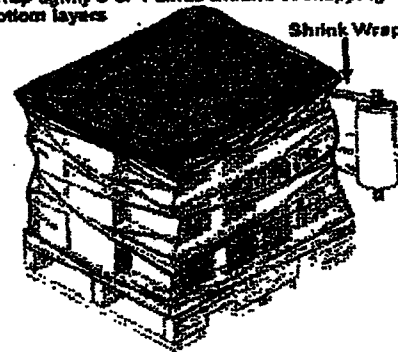
STEP 1

- Load batteries 2 layers high, then shrink wrap
- Wrap tightly 3 or 4 times around, making sure to catch top of pallet to help anchor load



STEP 2

- Load third layer, place cardboard on top, then shrink wrap entire load
- Wrap tightly 3 or 4 times around overlapping bottom layers



Shipper Info

Company Name: _____

Contract #: _____

Date: _____

Shipper Signature: _____

Carrier Info

Carrier Name: _____

Truck #: _____

Trailer #: _____

Driver Signature: _____

FOCUS MATERIALS

OP-46-01

1. Purpose

This procedure provides a system with which all Focus Materials, as defined by the Responsible Recycling Practices (“R2”) managed by Regency Technologies shall be handled.

2. Scope

This procedure applies to all of Regency Technologies facilities that handle focus materials including: Mercury containing components; CRT’s; batteries; toner, ink, toner cartridges and ink cartridges; components containing PCB’s; radioactive materials.

3. Reference Documents

- RIOS Standard
- R2:2013 Standard
- ISO 14001:2015 Standard
- EMS Management Review — OP-560-01
- Vendor Qualification and Evaluation Procedures — OP-741-01
- Breakdown Work Instructions — WI-23
- Dock Receiving Work Instructions –WI-09
- Triage Work Instructions – WI-05
- Legal and Other Requirements – OP-32-01
- QEHS Records Procedures – OP-424-01
- Records Master List – RT-F002
- Battery Handling Manual – RT-F203
- Universal Waste Lamps – RT-F200
- PCB Handling Guidelines – RT-F074
- Focus Materials Poster – RT-F166
- Downstream Audit Package Focus Materials – RT-F171
- Downstream Audit Package Untested Equipment – RT-F173
- Items QEHS Program (Prohibited Items List) List RT-F115

4. Procedure

4.1 All Focus Materials will be removed using safe and effective mechanical or manual processing.

4.2 All Mercury containing items will be manually removed before shredding, recovery, incineration, or land disposal. These items will be packaged according to DOT and any other regulations. See RT-F200 for detailed instructions.

FOCUS MATERIALS

OP-46-01

4.3 All Batteries will be removed by manual processing and packaged according to DOT and other regulations. See RT-F203 Battery Handling Manual for specific guidelines. These are then sent to an approved downstream partners for recycling.

4.4 CRT and other leaded glass will be safely and effectively removed both manually and mechanically from containing items according to WI-023 or will be done through an approved third party. Glass will be handled and transported according to DOT and other regulations. Glass will be sent to an approved down stream partner that meets the requirements of the R2 standard and sections 4.8 and 4.9 below. Downstream partners will have compliance verified using Regency Technologies Vendor Qualification Process OP-741-01

4.5 All PCB containing items will be manually removed before processing and packaged according to DOT and other regulations and transported to an approved downstream vendor. See RT-F074 PCB Handling Guidelines.

4.6 All Printed Circuit Boards will be checked for mercury containing capacitors and batteries during the breakdown phase of our operations. All Focus Materials and hazardous e-waste will be removed and packaged according to DOT and other legal requirements and sent to an approved down stream partner.

4.7 Print cartridges will be removed from printers prior to recycling. All loose print cartridges and cartridges removed from printers will be packaged in accordance with the approved recycler's instructions to preserve product integrity and protect workers and the environment. Only approved downstream recyclers will receive this material.

4.8 All Focus Material will be sent to processing, recovery, or treatment facilities and partners that are properly licensed to receive, and utilize technology designed to safely and effectively manage the Focus Materials. These facilities and partners will have all requirements verified through Regency Technologies Vendor Evaluation Process OP-741-01. These facilities are required to reside in countries where it is legal for them to be accepted.

4.9 Regency Technologies will require that all FM downstream partners adhere to the below requirements. These requirements apply not only to the company to which the material is sold but also all facilities that material is either brokered to or that are in the downstream recycling chain. Each such facility shall complete an independent downstream vendor form with all supporting documentation.

- a. Has a Documented Environmental, Health, and Safety Management System.
- b. Has a list of its environmental permits with all permits current with no serious violations.

FOCUS MATERIALS

OP-46-01

- c. That Reuse is given priority.
- d. Are in compliance with all R2 and other exporting and importing requirements
- e. Has the ability to track throughput.
- f. Complete a 'desk audit' using form RT-F171 or RT-F173 with copies of documents to record compliance with appropriate licenses, certifications, import/export licenses as appropriate and other requirements. This must be completed and approved by VP of Regency before material is shipped to the downstream vendor.
- g. Regency will confirm at least annually and document through audits or other similarly effective means that each downstream facility or facility that material is brokered to, that processes focus materials continues to conform to section 5 of the R2:2013 Standard.

4.10 Regency will ensure through the due-diligence process that downstream recyclers of plastic containing halogenated materials manage the materials using methods in accordance with acceptable processing options which do not liberate the halogenated materials from the plastic material.

4.11 Regency will ensure that no prohibited items are received in the facility through regular communication with suppliers of material that Regency does not accept. The RT-F115 Inbound Items QEHS Program (Prohibited Items List) will be available to Regency personnel who have first contact with inbound material to ensure that any prohibited items received are reported to Management for proper handling.

4.12 Regency will store items and materials that may cause risk to worker health and safety or the environment if in appropriately stored and equipment and components going to reuse in a legal and appropriate manner.

5. Responsibilities

A multidisciplinary team representing various departments and functions in the company is responsible for the initial identification and handling of Focus Materials/hazardous e-waste.

On an ongoing basis, the top management and departmental managers are responsible for identifying changes in activities, products, and services that could impact the companies handling of FM's.

The Environmental Representative is responsible for collecting and coordinating information regarding Focus Materials.

6. Records

- 6.1 All records related to focus materials / hazardous e-waste will be

FOCUS MATERIALS

OP-46-01

maintained by the responsible party in accordance with OP-424-01 QEHS Records Procedures.

6.2 The RT-F002 Records Master List clearly indicates the specific requirements for which documents must be stored, the storage method, the minimum time they must be kept, the general location where they are stored, the destruction disposition, access information and the process owner (record keeping responsibility) for each document.

History of Revisions

Rev	Description of Revision	Date
00	Original release of procedure.	1/12/10
01	Added timetable for On site audits of Downstream FM Vendors	5/18/12
02	Revised requirement for on site auditing of downstream FM Vendors to eliminate requirement for On-site auditing of R2 certified vendors or vendors who receive material through R2 certified brokers	1/3/13
03	Added reference to e-Stewards Standard; added e-Steward hazardous e-waste definitions and references, Changed section, Revised entire section 4 to comply with E Stewards.	5/28/13
04	Updated section 4.8 g to include annual desk audits of FM Vendors	2/19/14
05	Added reference to plastic containing Halogenated material in the Scope section. Added section 4.9 dealing with downstream recycler processing of plastics containing halogenated materials. Added Section 4.10 – Prohibited items. Added section 4.11 Mineral Oil –Glycol based coolant handling procedure RT-F107.	2/20/15
06	Deleted references to Glycol based coolant, Halogenated plastics, copier and printer drums containing selenium and arsenic. These related to E Steward standard which was dropped. Deleted all references to e steward standard throughout.	12/29/15
07	Updated section 4.4 to reference sending CRTs to third parties to remove glass, as the Upper facility was closed.	10/25/16
08	Added Section 4.7 for Toner Recycling. Renumbered rest of section 4 to accommodate. Edited section 4.9 to more closely align with section 5(f) of the R2: 2013 standard.	12/15/16
09	Updated section one to include focus materials managed by Regency that do not enter the facility, updated reference document descriptions, updated 4.4 references to sections 4.8 and 4.9, added section 4.12.	04/14/20
10	Updated section 4.9 to include language that requirements not only apply to the company to which the material is sold but also to all facilities that material is either brokered to or that are in the downstream recycling chain and that each facility shall complete an independent downstream evaluation form with all required documentation and in 4.9 (d) and 4.9 (f) added clarifying language that import/export documentation is required for any material brokered to a second tier DS vendor	1/29/21

Emergency Action and Fire Prevention Plan

Reserve Marine Terminals

11600 South Burley Avenue

Chicago, IL 60617

773-721-8740

Table of Contents

Purpose and Scope of Plan

Fire Prevention Plan

Emergency Action Plan

Appendix A – Floor Plans/Maps/Evacuation Routes

Appendix B – Rally Locations and Severe Weather Shelter(s)

Appendix C – Site-Specific Emergencies and Response Measures

PURPOSE and SCOPE

The purpose of this Plan is to establish written policies and procedures designed to minimize the negative impacts to our employees, business assets and the environment from fires and other emergency situations that could occur at this facility. This Plan has been developed in accordance with Occupational Safety and Health Act (OSHA) requirements as defined in 29 CFR 1910 Subpart E.

The first section of the Plan describes required practices and procedures for all employees in the area of fire prevention. If we can prevent or minimize conditions that produce undesirable fires from starting, we greatly reduce the potential for injury or loss of life and property.

The second section of the Plan describes measures we will take in the event of a reasonably anticipated emergency situation to protect our employees, property and the environment from further damage or loss. These situations may include fires and explosions, hazardous chemical releases, severe weather conditions, and personal injury. The success of this Plan is dependent on the ability of all employees to recognize situations that could lead to an emergency, actual emergencies, and critical response measures including immediate notification and evacuation procedures.

In the event of an emergency, management and employees must know what to do. Some emergency situations will warrant total and immediate evacuation of all employees. In other emergencies, a partial evacuation of nonessential employees, with defensive measures by other employees may be necessary for continued plant operations. In some cases, only those employees in the immediate area of an emergency may be expected to evacuate or move to safe areas. All employees must know what is expected of them in these anticipated emergency situations in order to assure their own safety as well as the safety of others.

Fire Prevention Plan

Undesirable fires are preventable and avoidable – yet they occur every day. And the catastrophic results – loss of life and property – are simply unacceptable. For a fire to occur, certain and predictable conditions must be met. But how many of us are aware of these conditions, and what we can do to eliminate them?

It is the Policy of Reserve Marine Terminals to conduct our business in a manner consistent with this Plan, and to take all reasonable measures necessary to ensure the safety of our employees, minimize potential environmental impacts, and protect the physical assets of our business in the event of a fire. This is accomplished through a program of established work practices, acceptable facility conditions, employee training and drills, and adherence to this Plan in the event of an undesirable fire.

The purpose of this Fire Prevention Plan is to:

- identify conditions and practices that can result in a fire at this facility;
- enhance the awareness of all employees regarding conditions and practices that can lead to a fire;
- ensure that established practices and procedures are followed to minimize or eliminate situations that can lead to an undesirable fire; and
- establish emergency procedures designed to prevent loss of life and limit property damage and environmental impacts in the event of a fire.

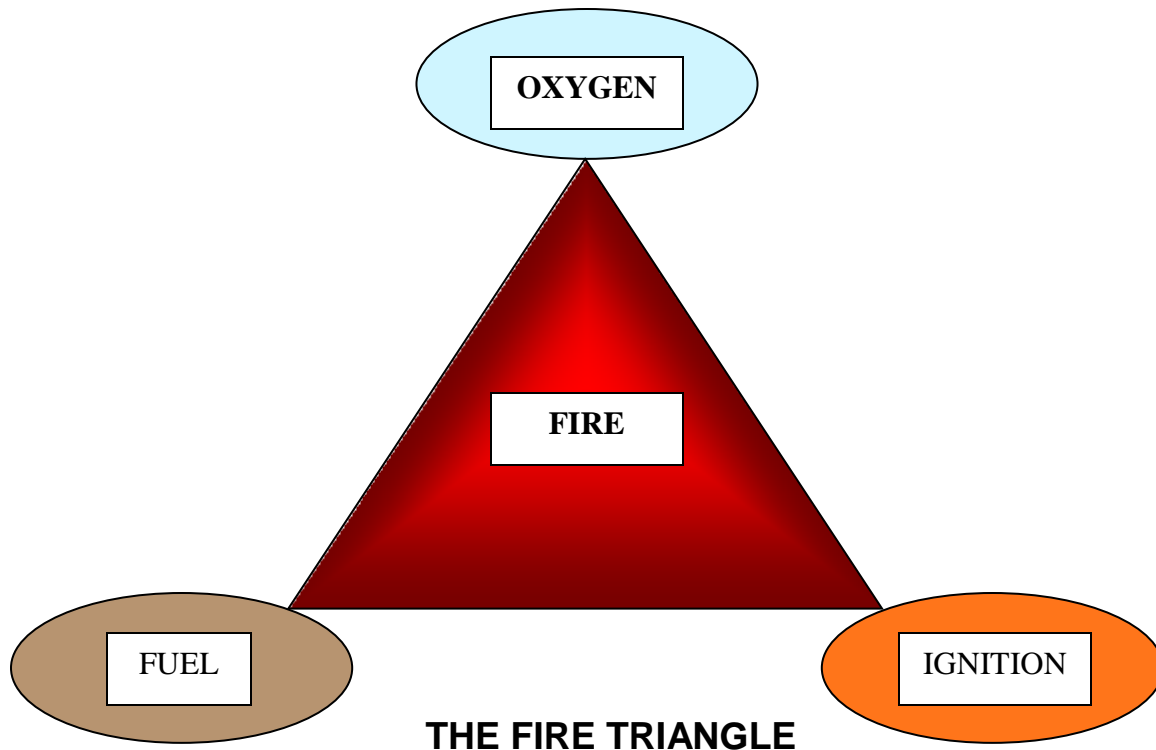
Fires can develop quickly, and a building structure or work area can become fully involved in a matter of minutes, if not seconds. It is not the intent of this Plan to direct employees to aggressively attack or fight a fire – we are not a Fire Brigade. Rather, the procedures described in this Plan are intended to minimize conditions leading to a fire, and guide employees in defensive tactics to remove themselves from harm, and reduce damage and loss to facility assets.

General facts about fire:

- No facility or structure is absolutely fireproof.
- Fire, flame, heat, smoke and toxic gases will spread through a building both vertically and horizontally.
- The spread of heat, smoke, and toxic gases is probably the greatest single danger to life – smoke and toxic gases are responsible for 75% of fire deaths in buildings.
- Early on-site detection of a fire is essential – there are usually only a few minutes between the beginning of combustion and the development of a fully involved destructive fire.
- What happens (or doesn't happen) in the first few minutes of a fire pretty well determines if the fire can be controlled or not.
- People and their actions are key elements – over half of all fires are the result of human element problems – lack of awareness or response.

Fire Prevention

In general, for a fire to occur, three conditions must be present – OXYGEN, a FUEL SOURCE and an IGNITION SOURCE. When these three conditions are met, we have established “THE FIRE TRIANGLE”.



Basically, when all three ingredients are present in sufficient quantity, a chemical reaction takes place, energy is released, and a fire occurs. The whole concept of fire prevention revolves around controlling or eliminating one or more of these ingredients so that the Fire Triangle cannot be completed or sustained – and fire cannot occur.

OXYGEN: Oxygen is present in the atmosphere at approximately 20.8%. Under normal conditions, there isn't much we can do about that – oxygen is present and one third of the fire triangle is satisfied. Depending on the fuel source, combustion can be supported with oxygen concentrations as low as 12-14%. As oxygen concentrations increase to levels above 23.5%, materials not normally prone to rapid combustion become ready fuel sources – like hair and clothing. A good rule of thumb: ***the more oxygen that is present, the more aggressively and rapidly a fire will burn.*** That's why blowing on a campfire helps get it going better – and using compressed oxygen to blow dust off yourself is a BAD idea. One last point about oxygen – there is a group of chemicals known as Oxidizers. These are substances that yield oxygen readily to stimulate the combustion of certain other substances. They are bad actors in that their presence increases

the potential for a fire – they actively supply oxygen and enhance the chemical reaction necessary to support the combustion process.

FUEL SOURCES: Most anything can become a fuel under the right conditions – sufficient/excessive oxygen and/or a strong enough ignition/heat source. There is a huge range for fire potential when discussing fuel sources. Key ingredients for a good fuel source are the hydrogen and carbon content, as well as oxygen, nitrogen and sulfur. For this reason, organic compounds like oils, hydrocarbons, alcohols and coal tars naturally present a greater fire hazard – they are rich in carbon and hydrogen. Organic liquids and gases present an even greater potential as the nature of liquids, vapors and gases offers an elevated opportunity for supplying fuel – evaporation and available surface area increase the interaction with oxygen, and thus enhances the potential for fire. Everyday items like paper and cardboard, oily rags, wood, and the many chemicals that surround us are ready sources of fuel if introduced to the Fire Triangle.

IGNITION SOURCES: Ignition sources are things that provide sufficient heat or energy to initiate the chemical reaction we call combustion. Open flames, electricity and electric arcs, sparks, sufficiently hot surfaces, static buildup, and certain chemical reactions are all good examples of ignition sources. When the other two components of the Fire Triangle are satisfied, the Ignition Source becomes the catalyst that initiates the combustion process.

FIRE PREVENTION AND CONTROL: Fire prevention focuses on managing conditions and practices to ensure that the three components of the Fire Triangle do not exist together. Fire control involves removing one of the three components after a fire has occurred. It is much **easier to manage and control** the three components of the Fire Triangle **before** they meet, rather than to **separate** them **after** a fire has started.

One of the first rules of fire prevention is good housekeeping. By controlling the buildup and accumulation of fuel sources like paper, cardboard and chemicals, we significantly reduce the potential for a fire. **NO FUEL = NO FIRE.** Not only can good housekeeping prevent a fire from starting, good housekeeping can:

- 1) Make evacuation and rescue efforts easier.
- 2) Help prevent the spread of a fire.
- 3) Make fighting a fire an easier and safer task.

Some specific housekeeping rules that directly impact fire prevention are:

- Flammable and Combustible liquids must be stored and covered in approved containers, away from potential ignition sources;
- All chemical spills must be cleaned up immediately;
- Cleanup materials and damaged containers must be properly managed;
- Combustible materials and trash must not be allowed to accumulate, and must be stored away from potential ignition sources;
- Routine cleanup of accumulated debris and dust on floors and around equipment, exhaust systems and electrical units to reduce fuel sources;

- Aisle ways must be kept free of clutter and trash;
- Fire exits must never be blocked.

Major Fire Hazards: There are some basic conditions and hazards present in most industrial settings. The following are common types of hazards and conditions that could result in an undesirable fire at this facility:

1. Electrical equipment is the number one cause of workplace fires. Electrical fires are the result of:
 - Overloaded fuses, circuits, motors, or outlets;
 - Wiring with frayed or worn insulation;
 - Loose ground connections;
 - Lights or machinery coming in contact with combustible materials.
2. Flammable liquids like gasoline, kerosene, solvents, and many chemicals present a fire hazard mainly because of their vapors. When these flammable vapors concentrate, and come in contact with an ignition source, you have a fire and possibly an explosion.
3. Smoking is another cause of fire. Lit cigarettes or matches can easily ignite many things capable of burning, like wood, paper or flammable liquids.
4. Space heaters are another fire source usually due to improper use and close proximity to combustible materials.
5. Welding and cutting operations are a fire hazard because of the flames and sparks (ignition sources) they create.
6. Spontaneous combustion – the slow buildup of heat in combustible materials like oily rags, which eventually erupts into fire.
7. Chemicals that are not a major fire hazard alone may become one when mixed with an incompatible substance such as: air; water; heat; or other chemicals. This is known as reactivity.
8. Exposure from adjoining buildings or neighbors – you may be doing all the right things, but your upwind neighbor just lit a REALLY BIG barbecue.
9. Static buildup and discharge, mainly during flammable liquid transfer.
10. Additional fire hazards associated with this operation are identified in Appendix C of this Plan.

Hazard Control and Minimization: Each of us has the opportunity to protect ourselves and our co-workers from fires by using caution and common sense to avoid conditions that could cause a fire. These common sense principals work at home as well:

1. Electrical equipment and wiring;
 - Never use wiring with insulation that is frayed or worn – replace it.
 - Keep electrical boxes and motor control centers closed at all times.
 - Check that ground connections are sound as this keeps electricity confined to a safe path.
 - Don't overload fuses, circuits, motors, or outlets.
 - Use the correct fuse for the job.
 - Avoid using temporary wiring and minimize extension cords.
2. Do not store items/material near lights or machinery.
3. Watch for over-heated transmission shafts or bearings, especially if in an area with dust, lint or grease which could burn.
4. Flammable/Combustible liquids:
 - Check MSDS to determine if a liquid is flammable before you use it.
 - Only use flammable liquids in well ventilated areas.
 - Avoid using near heat, fire, cigarettes, sparking tools, or anything that could produce an ignition source.
 - Store flammable liquids in approved containers, away from ignition sources.
 - Use bonding and grounding when transferring flammable liquids.
 - Keep containers closed when not in use.
 - Clean up leaks and spills immediately.
 - Don't ignore odors that indicate the presence of chemical vapors.
5. Smoking:
 - This is the easiest ignition source to prevent - restrict smoking to authorized areas and use ashtrays. Obey "No Smoking" signs.
 - Use common sense and don't smoke in areas where something flammable could ignite – like while pumping gasoline.
 - Extinguish matches and cigarettes carefully and properly.
6. Space heaters should only be used when absolutely necessary, with these fire prevention precautions:
 - Use only in well-ventilated areas.
 - Use only the fuel specified for that heater.
 - Position heater away from all combustible materials.

7. Welding, cutting and brazing: These activities naturally generate heat, flames, and sparks.
 - Whenever possible, conduct these operations in a separate room with a fire-resistant floor, or a clean dry wood floor covered with material that won't burn – wetting surfaces down first will also help.
 - Use a welding screen around the operation.
 - Keep welding and cutting operations as far away as possible from flammable liquids, vapors, dusts, and combustible materials.
 - Before welding or cutting on tanks, pipes and other containers, identify prior contents, verify that residual vapors are not present.
 - Use the Hot Work Permit System, including pre-job assessment, control of fuel sources, readily available extinguishing equipment, and a fire watch during and after the project.

8. Spontaneous Combustion is a slow buildup of heat that creates a fire. It occurs often when an accumulation of rags and waste has been saturated with flammable or oily materials.
 - Dispose of flammable/oily waste in closed, airtight metal containers, and empty the containers daily.
 - Keep flammable waste that cannot be put in containers in a cool, dry, well-ventilated area, and dispose of frequently.

9. Practice GOOD HOUSEKEEPING – many of the conditions that result in fires are due to poor housekeeping – a place for everything and everything in its place.

Firefighting Control Measures: Most firefighting is best left to the professionals - the local fire department. Our purpose here is to provide information to help get you out of a bad situation, not to aggressively attack a fire. Firefighting techniques vary depending on type of fire, fuel source, stage of the fire, available extinguishing materials, air flow, and so on. However, the basic principal of removing/eliminating one or more of the three components of the Fire Triangle is critical to extinguishing a fire.

OXYGEN: By removing oxygen, you suffocate or smother the fire. Sand, dirt, wet blankets or inert gases will starve many fires of oxygen and suppress the fire. Foams and other chemicals are also used to smother flammable liquids and vapors by isolating the fuel source from needed oxygen. Put a lit candle in a jar and cover it – the candle will extinguish in a matter of seconds.

FUEL SOURCES: By physically removing the fuel source, you eliminate the fire. However, this is difficult, dangerous and usually not practical.

IGNITION SOURCES: Once a fire has developed, ignition sources don't really matter. But, by removing heat through cooling, the energy needed to support the chemical reaction is no longer available – water is the most common coolant.

Fire Suppression Equipment: Portable fire extinguishers are available throughout the facility for escape purposes and/or for incipient and smoldering stage fires. All employees should have an understanding of the type of fire extinguisher to use for a certain type of fire. Not all fire extinguishers can put out all types of fires. In fact, using the wrong fire extinguisher on some fires can actually spread the fire. All fire extinguishers are identified by type of fire they will put out, as noted below:

Types of Fires and Corresponding Fire Extinguishers:

Class A: Class A extinguishers are used to put out fires involving ordinary burnables like wood, paper, rags, cloth, or trash, when you want to wet down and cool the area. The extinguishers themselves may use water, water base foam, loaded steam, or a multipurpose dry chemical to put out the fire.

Class B: Class B extinguishers are used to put out fires involving gases or flammable liquids such as oil, gasoline, paints, solvents, and grease. The extinguishers may use carbon dioxide, foam, or dry chemicals to put out the fire either by cutting off oxygen or reducing flame.

Class C: Class C extinguishers are used for fires involving or surrounding electrical equipment fires. The extinguishers usually use carbon dioxide or a dry chemical to put out fires. **Note:** Never use water on an electrical fire. Water conducts electricity and using it on an electrical fire could mean a dangerous shock for the person operating the extinguisher.

Combination ABC or BC: Combination ABC or BC extinguishers are used when a fire combines one or more of the three types of fires we have described.

Class D: Class D extinguishers are used for fires in combustible metals including sodium, magnesium, zinc, potassium, powdered aluminum, and titanium.

All employees should have an understanding of proper fire extinguisher use and the various types of extinguishers. Most importantly, people are not replaceable - buildings and equipment are. If a fire cannot be easily controlled by existing fire extinguishers, alert others, leave the area and call for professional assistance. The primary use of fire extinguishers is for escape purposes.

Fire Extinguisher Use: By remembering the simple acronym “**PASS**”, you can use most any fire extinguisher effectively:

P = Pull the pin on the handle of the extinguisher;

A = Aim the nozzle at the base of the fire;

S = Squeeze the handle to begin discharging the contents of the extinguisher;

S = Sweep nozzle across the base of the fire to distribute extinguishing agent.

First Aid

If you are involved in a fire, you may have to administer first aid until medical help arrives. Here are some recommendations:

- If clothing catches fire, **STOP, DROP** to the floor or ground, and **ROLL** to smother the flames – this isn't as easy as it sounds – people panic.
- If someone has inhaled smoke, get the person to fresh air immediately. If they're not breathing and you know CPR, administer it. Otherwise, get someone who can.
- If someone is on fire, wrap the person in a blanket, coat or other preferably wet material that can help smother the flames.
- If someone has been burned, cut away any loose clothing, but don't remove clothing that is stuck to a burn.
- Put cool water on burns, and then if possible, cover them with a moist sterile dressing. If the arms or legs have been burned, elevate them.

And, whatever you do, notify others and get medical attention for any victims.

Specific emergency situations and corresponding response measures for Reserve Marine Terminals are described in the following section – Emergency Action Plan.

SUMMARY: The old adage ***“An ounce of Prevention is worth a pound of Cure”*** certainly holds true in the area of fire prevention. By adhering to the following basic procedures, we will go a long way towards avoiding a fire – at work or at home:

- Practice Good Housekeeping – clean up your work area daily, put things away, and don't allow material and debris to accumulate.
- Routinely inspect equipment and electrical items for damage, wear and buildup of dirt, grease, and other possible fuel sources.
- Routinely perform preventive maintenance – well greased equipment doesn't wear as fast and doesn't generate excessive heat.
- Don't store items near or around electrical equipment, lights, heaters, etc.
- Respect all chemicals you work with or around – follow all handling and storage requirements, keep containers closed, clean up spills promptly.
- Watch for and control/eliminate possible ignition sources.
- Routinely inspect and maintain emergency equipment.
- Always ensure a safe means of escape from your work area.
- **PAY ATTENTION!!!** Be aware of conditions that will produce or support the Fire Triangle.
- Avoid conditions that can lead to fires – and you won't have fires.

Emergency Action Plan

This Emergency Action Plan (EAP) has been developed to ensure employee safety in the event of a fire or other emergency. It establishes notification procedures, describes emergency evacuation and accountability procedures, and identifies potential site-specific emergencies and response measures.

Fires, severe weather, chemical releases, and personal injury are all situations that would constitute an emergency, and will require some level of emergency response including possible evacuation of the facility. Additionally, any of these events may require the need for outside emergency responders. It is critical to establish basic procedures during NON-EMERGENCY times, when we are calm and thinking clearly – and then trust and follow those procedures during an actual emergency, when we may be panicked and disoriented or confused.

At Reserve Marine Terminals, our primary objective is the safety of all employees. To ensure employee and visitor safety, our plan is designed to get personnel away from danger, account for all employees and visitors, and treat injuries. If safe to do so, we will also attempt to take defensive measures designed to minimize potential impacts to the environment and limit business losses.

There are two old sayings that apply to emergencies:

- **Murphy's Law:** Whatever can go wrong, will go wrong.
- **Boy Scout Slogan:** Be prepared.

In most emergencies, the employee's role is limited. One of the keys to handling these situations is to turn them over to people who have received special training and who have the proper equipment for the job. But even if you are not part of an emergency response crew, you still have two important roles to play:

- Quickly and safely get yourself away from the hazard or danger.
- Immediately notify others;

Accidents can and do happen. It is critical that all employees are familiar with the procedures to follow in an emergency. In a real emergency, there is no time to think – if you want to survive, you have to act quickly and correctly. The following is a guide for employees to follow in the event of an emergency. A facility floor plan, evacuation routes, and RALLY POINTS are posted at the facility and attached – Appendices A and B. There is also a list of anticipated emergencies and response measures for this facility – Appendix C. All employees are required to become familiar with evacuation routes and are encouraged to familiarize themselves with the various types of emergencies and appropriate response measures for this site. All employees are required to follow the minimum response procedures, including notification and evacuation.

Emergency Evacuation Procedures and Escape Routes

In the event an emergency alarm is sounded, or you become aware of an emergency, take the following steps:

- **STAY CALM AND DON'T PANIC!!!**
- As you are leaving, shut off equipment and close doors if safe to do so.
- Proceed to the nearest available and safe exit and leave the building as quickly as possible. Go to your designated RALLY POINT and wait.
- If others are in your immediate surroundings (employees or customers), direct them to come with you.
- If you observe an emergency situation unfolding – IMMEDIATELY notify your supervisor and initiate any alarm procedures.
- Floor plans showing the emergency escape routes have been developed and are posted in various areas of the facility – BECOME FAMILIAR with these routes and their proximity to your work area – Appendix A.
- Stairwells are the primary means for evacuation, and elevators should only be used by fire/EMT, or to assist physically handicapped personnel.
- Once at the Rally Point, don't wander around or leave the area. We must be able to account for all employees. Assist with the head count if able.
- Employees must not re-enter a building/area until an ALL-CLEAR has been issued by the Manager or Emergency Response Coordinator (ERC).

Critical Plant Operations Procedures

There are no critical office or yard operations that must be maintained during an evacuation. However, there may be situations where designated response personnel will remain within the facility to perform emergency response measures for which they are trained, provided they can perform these duties in a safe manner. At no time will any employee put him/herself at unnecessary risk.

Employee Head Count Procedures

The Facility Manager or the designated ERC will conduct head counts once evacuation has been completed. Before evacuating the facility, designated employees will check offices, rooms and other enclosed spaces in the workplace for employees who may be trapped or otherwise unable to evacuate the building. Under no circumstances should any employee enter an unsafe area or condition.

Rescue and Medical Duties

In the event of a serious accident or injury, the need for professional medical assistance may be necessary. Emergency Phone Numbers are posted at each phone. The decision to request outside emergency assistance (fire, police, EMS) shall be made by the Facility Manager or designated ERC. Until professional

assistance arrives, provide any medical assistance you are trained and qualified to perform. In general, don't move an injured person.

Outside Notification Procedures: Emergency Phone Numbers are posted at all telephones. In general, the decision to summon outside help will be made by the Facility Manager, ERC or supervisor. However, in the event that you need assistance from emergency services (Fire, EMS, Ambulance/Rescue, Police), do the following:

- Remain calm;
- If possible, use a land line rather than a cell phone;
- Speak clearly and slowly;
- Give the exact location of the emergency;
- Describe the situation with as much detail as possible – type and nature of emergency, victims, any chemical information, etc.;
- Give the phone number and address from where you are calling;
- Do not hang up until told to do so.
- Ensure that a spotter has been sent to the facility entrance to guide outside response personnel to the emergency.

Professional emergency services responding to a call will usually assume responsibility for coordinating response measures, and will direct all rescue and medical duty assignments upon their arrival on-site. The facility manager or ERC should remain available to provide information to emergency responders.

Fire and Emergency Reporting Procedures

In the event of a fire, go to the nearest fire alarm and activate the alarm by pulling the lever. The alarm will notify other facility personnel and the local fire department/emergency response team. In the absence of fire alarms, go to the nearest telephone, two-way radio, CB or walkie-talkie and notify your supervisor. As a last effort, yell as you calmly leave the area. The supervisor or manager will assess the situation and call for emergency assistance. Emergency telephone numbers are posted at all phones. Ensure that a spotter has been sent to the facility entrance to direct fire and rescue services to the emergency location. All other employees are to evacuate the building/area of fire and proceed to the Rally Point. The professional fire fighters will handle the fire.

In the event of severe weather, tornado, etc., the facility manager or his/her designee will make the decision to move employees to the designated Severe Weather Shelter. At the time of this notification, all employees are required to evacuate to their assigned shelters - see Appendix B. Weather reports are monitored anytime bad weather is forecast via weather radios or the internet. In the event of high winds, be aware of flying debris and stay clear of downed power lines.

Other anticipated site-specific emergencies and corresponding response measures are described in Appendix C.

Management Responsibilities and Accountability:

The facility manager and designees are responsible for the following activities:

1. Immediately notify fire, EMS and police as needed in the event of an emergency affecting personnel or the facility.
2. Ensure that medical attention is given to any injured personnel.
3. Make decisions relating to evacuation and other response measures in the event of an emergency.
4. As soon as practical, notify RMG Directors and Health and Safety Mgr.
5. Ensure that an Incident Investigation is initiated as soon as feasible.
6. Ensure that all employees have received training on reporting fires and other emergencies, the location of fire exits and evacuation routes.
7. Ensure that fire/ER drills are conducted annually to acquaint employees with emergency procedures and evaluate plan effectiveness.
8. Ensure that designated employees are trained in the use of fire fighting and other emergency equipment and basic first aid techniques.
9. Maintain contact information for key response personnel in a safe place for immediate use in the event of an emergency.

Emergency Response Coordinator (ERC) Information

Facility Manager/ERC	Contact Info. W/H/C	Duties
Jeff Sullivan/Scrap Yard/ Docks	W: 773-382-0000 C: 773-899-6101	Initiate/oversee evacuation; contact EMS; direct response measures; coordinate with RMG. Oversee investigation.
Steve Popp/Screening	C: 219-869-2924	Initiate/oversee evacuation; contact EMS; direct response measures; coordinate with RMG. Oversee investigation.
Ron Trafton/Maintenance	C: 773-447-0974	Initiate/oversee evacuation; contact EMS; direct response measures; coordinate with RMG. Oversee investigation.
Nicholas Blachuciak	W: 773-966-0673 C: 312-273-0197	Facilitate evacuation; conduct head count; assist with response; contact EMS if needed; investigate incident

Training

Basic Emergency Response procedures must be simple, direct and carried out without confusion. All employees must understand notification procedures, how to get help, emergency equipment locations, escape routes and rally points, and tasks that may be required of them during an emergency. The success of this Plan is dependent on employee knowledge and actions. All employees will

receive training at the time of hire, and annually. Unannounced drills are also conducted to measure training and response effectiveness.

This Plan will be reviewed and amended as conditions change or when drills or actual emergencies uncover discrepancies in the Plan.

Appendix A

Floor Plans/Maps & Emergency Evacuation Routes

Reserve Marine Terminals

11600 South Burley Avenue
Chicago, IL 60617
773-721-8740

Appendix B

Rally Points & Severe Weather Shelter(s)

Reserve Marine Terminals

11600 South Burley Avenue
Chicago, IL 60617
773-721-8740

Appendix C

Site-Specific Potential Emergencies And Response Measures

Reserve Marine Terminals

11600 South Burley Avenue
Chicago, IL 60617
773-721-8740

Appendix C

Emergency Response Procedures

Reserve Marine Terminals

Scrap Yard and Dock Activities

COVERED ACTIVITIES/AREAS INCLUDE:

SCRAP YARD: Torching, Drop Ball, DRI, Scrap Loading/Unloading, Shearing, Hydraulic Breaking.

DOCKS: Vessel Loading/Unloading Activities, Material Transfer and Staging.

Sand Screening: Sand screening plant.

MAINTENANCE: Facility-wide maintenance/servicing of equipment/processes.

Responsible Parties:

Scrapyard Manager: Jeff Sullivan – ERC

Screening Plant Manager: Steve Popp – ERC

Maintenance Manager: Ron Trafton – ERC

HSE Coordinator: Nicholas Blachuciak – Safety/Alternate ERC

Facility Communications:

- Communications via radio between supervision/management and crane/loader operators;
- Communications to burners/laborers/3rd party/Trucks is then verbal

Rally Points:

- **Scrap Yard** – scrap yard employees/3rd party/trucks go to the shanty at south end of yard near back side of South Shore Recycling;
- **Dock** - employees/visitors go to the corner of the building marked “Water Treatment Plant”, west end by river
- **Maintenance** – employees/visitors go to the corner of the building marked “Water Treatment Plant”, west end by river; if within facility, report to local Rally Point; notify local ERC and Maintenance Supervisor.
- **Screening Plant** – go to Rally Point at west end of shop, along river;

Potential Emergencies:

Scrap or debris pile catches fire

Equipment catches fire

Employee/person injured

Water Rescue

Explosion or sudden pressure release

Problem with torching equipment/leaking hose or cylinder damage

Chemical release from equipment or material being torched

Truck/crane/loader flips

Air emissions (smoke, chemical, etc.) from off-site affect area

Severe weather: lightning, high winds, tornado, temp. extremes

General Procedures:

- Upon observing/becoming aware of a problem, immediately notify management.
- Manager/supervisor should immediately assess situation visually, from a safe (upwind/uphill) approach, in addition to info relayed from call.
- If serious fire or personal injury is involved, responding management personnel should immediately call 911 for emergency assistance.
- Dispatch a “Spotter” to main drive at S. Burley and 116th Street to direct response personnel.
- If facility personnel are at risk, immediately initiate Evacuation and direct all employees to designated Rally Points.
- Secure area and ensure that all individuals are accounted for. Keep people upwind of situation.
- Notify RMT security gate, and corporate HSE.

Specific Emergency Procedures:

Scrap or Debris Pile Fire:

- Remove all personnel and equipment (if safe to do so) from area and conduct a head count.
- If fire is small, attempt to extinguish with sand/dirt or water.
- If fire is large, contact local Fire Dept. for emergency assistance – inform EMT of material involved and low risk of loss.
- Send Spotter to main entrance
- Secure area and keep personnel upwind of incident.
- Make appropriate notifications to RMT Security gate and corporate HSE.

Equipment On Fire:

- Immediately notify management.
- If operator is still in control of equipment, and it is safe to do so, attempt to quickly position equipment at least 25 feet from any other structure; otherwise, immediately exit equipment.
- If fire is small, attempt to extinguish without placing self at risk – do not re-board burning equipment – additional extinguishers available on other equipment and mounted in various areas.
- Secure area and ensure all employees are accounted for.
- If needed, call local Fire Dept. for assistance, send Spotter to entrance.
- Begin to establish runoff/discharge control a safe distance downstream/downwind of fire – use equipment to construct earthen or sand berms, or deploy spill control equipment (OilDri/sorbent pads/booms) – attempt to minimize off-site migration of oils/contaminated runoff from fire water.
- Make appropriate notifications to RMT Security gate and corporate HSE.

Revised: March, 2020

Personal Injury:

- Notify management immediately.
- Ensure that victim is not in immediate risk of additional injury.
- Ensure that you are not at risk by attempting to help/attend to victim.
- Secure area and assess victim and nature of injuries.
- Call 911 for emergency assistance if warranted – send Spotter.
- Address any potential blood borne pathogen exposures.
- Begin to conduct investigation.
- Make appropriate notifications to RMT Security gate and corporate HSE.

Water Rescue:

- In the event that an individual falls from the dock or a vessel into the water, immediately notify Facility Safety Officer (FSO) and management.
- Attempt to provide extraction means to assist in rescue of individual from water (Life Ring with 100 ft. of rope on crane and vessel gangways).
- Depending on activity, employees wear Personal Flotation Devices (PFD), this equipment will assist in keeping individual afloat during rescues.
- Self-rescue should be the first measure taken unless individual is unable to help him/herself as untrained, would-be rescuers can quickly become additional victims.
- Attempt to keep any other equipment away from individual during extraction.
- Stop all local operations until situation is resolved.
- Refer to Water Rescue Procedures in DOCK OPERATIONS MANUAL.
- If warranted, FSO may seek assistance from local EMT – follow notification and Spotter requirements.
- Conduct investigation and notify corporate HSE.

Explosion/Sudden Pressure Release:

- Notify management, if warranted, evacuate all personnel to rally point and conduct head count.
- If there are injuries or missing personnel, follow personal injury procedures and immediately call 911 for assistance.
- If no injuries or missing personnel, assess situation and conditions surrounding explosion/pressure relief – IF SAFE TO DO SO.
- Approach from upwind direction and attempt to determine nature and cause of incident.
- IF hazardous conditions still exist, contact 911 for assistance.
- If incident has passed, no residual chemicals are present, and hazards no longer exist, conduct thorough investigation – notify corporate HSE.

Leaking Welding/Cutting/Torching Equipment:

Revised: March, 2020

- Under normal circumstances, this situation should not constitute an emergency. Routine monitoring of all associated equipment will minimize the potential for catastrophic incident.
- Upon discovering a leak, immediately extinguish torch and close supply valves at oxy/fuel source (cylinder or tank).
- Notify management of situation and severity.
- Follow LOTO procedure for repair to hose or torch.
- If a problem exists with a tank or cylinder, immediately contact supplier for assistance. **DO NOT ATTEMPT TO REPAIR OR OTHERWISE WORK ON A LEAKING TANK OR CYLINDER.**

Chemical Release:

- Notify management and remove all personnel from immediate area.
- Secure area and keep personnel upwind/uphill from release.
- If material is known (oil from equipment, etc), follow spill response procedures.
- If material is unknown, contact corporate HSE for guidance, contact local FD/HazMat and or Emergency Response spill contractor if warranted.
- If personal injury or fire is involved, follow applicable procedures.

Equipment Tips/Flips Over:

- Notify management and ensure that no personnel are injured.
- If there are victims, follow Injury Procedure.
- Secure area and ensure there are no ignition sources present.
- Dike or otherwise contain any spilled material.
- Investigate cause of tip – take pictures to document and support.
- Using standard methods and practices, attempt to upright equipment, only if it can be done so safely. Ensure there are no overhead lines or other conditions that could create additional problems.
- Seek outside assistance if warranted. Notify corporate HSE.

Off-Site Emissions:

- In the event that an airborne noxious or otherwise hazardous emission source migrates towards/onto this facility, immediately notify RMT management as other personnel/operations could also be at risk.
- Evacuate employees to Rally Point and conduct head count.
- If plume is approaching, move sidewind and upwind from the plume.
- Attempt to get inside a closed building and stay there until plume has passed.
- If injuries occur, follow Injury Procedures.
- Notify Corporate HSE.

SEVERE WEATHER: The Facility can monitor weather conditions via the internet. During periods when severe weather is imminent, facility personnel will monitor local weather conditions in real time and respond accordingly.

Lightning and thunderstorms – these events typically pass through an area rather quickly.

- Contact management and seek shelter until event passes – usually within 15-30 minutes.
- If in a crane, exit crane if still safe to do so, if lightning is imminent, stay in crane and avoid using any electronic devices or contacting metal surfaces, wait for lightning to pass.

High winds – high winds can create hazardous conditions due to excessive dust, the possibility of small and often sharp material becoming airborne, and loss of control of equipment (especially crane booms and hatch covers). This condition should be assessed by management with input from local weather forecast.

- If winds are excessive, stop work and remove personnel from high hazard areas until conditions subside.
- Secure any loose items that may become airborne (hatch covers, etc.).

Tornado –

- Immediately evacuate all personnel to Safe Haven and conduct head count
- Notify management and ensure that warning has been relayed to all other on-site operations. If possible, notify corporate HSE.
- Wait for event to pass.

Temperature extremes – there is a potential for hazardous temperature extremes (severe cold and excessive heat). These conditions should be monitored on a daily basis by all personnel. Employees are expected to come to work prepared to deal with daily conditions. Employees are trained in recognizing hazardous conditions and symptoms of heat/cold stress. Failing to address these conditions can lead to personal injury/ medical emergencies and should be monitored by all on a daily basis. This type of emergency is predictable and should not happen. If an individual does experience a temperature extreme-related injury, follow Injury Procedure – severe cases can be Life Threatening.

POST-EMERGENCY PROCEDURES:

After an emergency has occurred, and all conditions have stabilized, it is critical that a thorough and complete Incident Investigation be completed. This investigation should not only address the causes of the emergency, but should focus on the response and reaction times as well as effectiveness of response measures. Depending on the type and nature of an emergency, additional reporting requirements to various government agencies and insurance carriers may be required. Seek guidance and assistance from Corporate HSE. In

Revised: March, 2020

addition to an Incident Investigation, it is necessary to generate the following information:

- An accurate and thorough account of all incurred physical property damages and losses (equipment, structures, property, environment),
- Photographs, drawings, etc. that document and portray the type, nature and degree of losses/damage.
- Detailed account of response/mitigation measures and associated costs.
- Costs associated with lost/damaged equipment and property.

These findings must be evaluated by management and lessons learned must be integrated into revised Emergency Response Procedures for potential future events. Training with all personnel covering the causes, investigation findings, and any procedural changes shall be conducted as warranted.

These emergency response procedures be reviewed annually, and associated training will be then be conducted annually and/or after an even that triggers use of this Emergency Response Plan.

Emergency Action and Fire Prevention Plan

South Shore Recycling
11600 South Burley Avenue
Chicago, IL 60617
773-374-0299

Table of Contents

Purpose and Scope of Plan

Fire Prevention Plan

Emergency Action Plan

Appendix A – Floor Plans/Maps/Evacuation Routes

Appendix B – Rally Locations and Severe Weather Shelter(s)

Appendix C – Site Specific Emergencies and Response Measures

PURPOSE and SCOPE

The purpose of this Plan is to establish written policies and procedures designed to minimize the negative impacts to our employees, business assets and the environment from fires and other emergency situations that could occur at this facility. This Plan has been developed in accordance with Occupational Safety and Health Act (OSHA) requirements as defined in 29 CFR 1910 Subpart E.

The first section of the Plan describes required practices and procedures for all employees in the area of fire prevention. If we can prevent or minimize conditions that produce undesirable fires from starting, we greatly reduce the potential for injury or loss of life and property.

The second section of the Plan describes measures we will take in the event of a reasonably anticipated emergency situation to protect our employees, property and the environment from further damage or loss. These situations may include fires and explosions, hazardous chemical releases, severe weather conditions, and personal injury. The success of this Plan is dependent on the ability of all employees to recognize situations that could lead to an emergency, actual emergencies, and critical response measures including immediate notification and evacuation procedures.

In the event of an emergency, management and employees must know what to do. Some emergency situations will warrant total and immediate evacuation of all employees. In other emergencies, a partial evacuation of nonessential employees, with defensive measures by other employees may be necessary for continued plant operations. In some cases, only those employees in the immediate area of an emergency may be expected to evacuate or move to safe areas. All employees must know what is expected of them in these anticipated emergency situations in order to assure their own safety as well as the safety of others.

Fire Prevention Plan

Undesirable fires are preventable and avoidable – yet they occur every day. And the catastrophic results – loss of life and property – are simply unacceptable. For a fire to occur, certain and predictable conditions must be met. But how many of us are aware of these conditions, and what we can do to eliminate them?

It is the Policy of South Shore Recycling, to conduct our business in a manner consistent with this Plan, and to take all reasonable measures necessary to ensure the safety of our employees, minimize potential environmental impacts, and protect the physical assets of our business in the event of a fire. This is accomplished through a program of established work practices, acceptable facility conditions, employee training and drills, and adherence to this Plan in the event of an undesirable fire.

The purpose of this Fire Prevention Plan is to:

- identify conditions and practices that can result in a fire at this facility;
- enhance the awareness of all employees regarding conditions and practices that can lead to a fire;
- ensure that established practices and procedures are followed to minimize or eliminate situations that can lead to an undesirable fire; and
- establish emergency procedures designed to prevent loss of life and limit property damage and environmental impacts in the event of a fire.

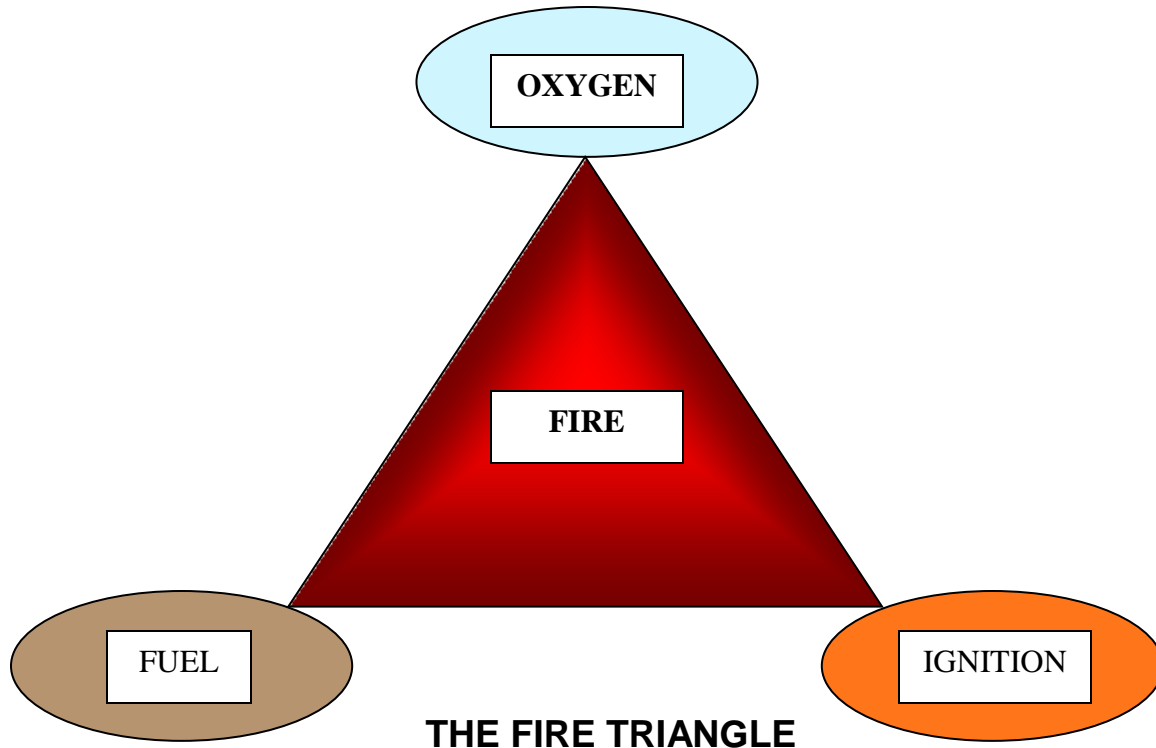
Fires can develop quickly, and a building structure or work area can become fully involved in a matter of minutes, if not seconds. It is not the intent of this Plan to direct employees to aggressively attack or fight a fire – we are not a Fire Brigade. Rather, the procedures described in this Plan are intended to minimize conditions leading to a fire, and guide employees in defensive tactics to remove themselves from harm, and reduce damage and loss to facility assets.

General facts about fire:

- No facility or structure is absolutely fireproof.
- Fire, flame, heat, smoke and toxic gases will spread through a building both vertically and horizontally.
- The spread of heat, smoke, and toxic gases is probably the greatest single danger to life – smoke and toxic gases are responsible for 75% of fire deaths in buildings.
- Early on-site detection of a fire is essential – there are usually only a few minutes between the beginning of combustion and the development of a fully involved destructive fire.
- What happens (or doesn't happen) in the first few minutes of a fire pretty well determines if the fire can be controlled or not.
- People and their actions are key elements – over half of all fires are the result of human element problems – lack of awareness or response.

Fire Prevention

In general, for a fire to occur, three conditions must be present – OXYGEN, a FUEL SOURCE and an IGNITION SOURCE. When these three conditions are met, we have established “THE FIRE TRIANGLE”.



Basically, when all three ingredients are present in sufficient quantity, a chemical reaction takes place, energy is released, and a fire occurs. The whole concept of fire prevention revolves around controlling or eliminating one or more of these ingredients so that the Fire Triangle cannot be completed or sustained – and fire cannot occur.

OXYGEN: Oxygen is present in the atmosphere at approximately 20.8%. Under normal conditions, there isn't much we can do about that – oxygen is present and one third of the fire triangle is satisfied. Depending on the fuel source, combustion can be supported with oxygen concentrations as low as 12-14%. As oxygen concentrations increase to levels above 23.5%, materials not normally prone to rapid combustion become ready fuel sources – like hair and clothing. A good rule of thumb: ***the more oxygen that is present, the more aggressively and rapidly a fire will burn.*** That's why blowing on a campfire helps get it going better – and using compressed oxygen to blow dust off yourself is a BAD idea. One last point about oxygen – there is a group of chemicals known as Oxidizers. These are substances that yield oxygen readily to stimulate the combustion of certain other substances. They are bad actors in that their presence increases

the potential for a fire – they actively supply oxygen and enhance the chemical reaction necessary to support the combustion process.

FUEL SOURCES: Most anything can become a fuel under the right conditions – sufficient/excessive oxygen and/or a strong enough ignition/heat source. There is a huge range for fire potential when discussing fuel sources. Key ingredients for a good fuel source are the hydrogen and carbon content, as well as oxygen, nitrogen and sulfur. For this reason, organic compounds like oils, hydrocarbons, alcohols and coal tars naturally present a greater fire hazard – they are rich in carbon and hydrogen. Organic liquids and gases present an even greater potential as the nature of liquids, vapors and gases offers an elevated opportunity for supplying fuel – evaporation and available surface area increase the interaction with oxygen, and thus enhances the potential for fire. Everyday items like paper and cardboard, oily rags, wood, and the many chemicals that surround us are ready sources of fuel if introduced to the Fire Triangle.

IGNITION SOURCES: Ignition sources are things that provide sufficient heat or energy to initiate the chemical reaction we call combustion. Open flames, electricity and electric arcs, sparks, sufficiently hot surfaces, static buildup, and certain chemical reactions are all good examples of ignition sources. When the other two components of the Fire Triangle are satisfied, the Ignition Source becomes the catalyst that initiates the combustion process.

FIRE PREVENTION AND CONTROL: Fire prevention focuses on managing conditions and practices to ensure that the three components of the Fire Triangle do not exist together. Fire control involves removing one of the three components after a fire has occurred. It is much **easier to manage and control** the three components of the Fire Triangle **before** they meet, rather than to **separate** them **after** a fire has started.

One of the first rules of fire prevention is good housekeeping. By controlling the buildup and accumulation of fuel sources like paper, cardboard and chemicals, we significantly reduce the potential for a fire. **NO FUEL = NO FIRE.** Not only can good housekeeping prevent a fire from starting, good housekeeping can:

- 1) Make evacuation and rescue efforts easier.
- 2) Help prevent the spread of a fire.
- 3) Make fighting a fire an easier and safer task.

Some specific housekeeping rules that directly impact fire prevention are:

- Flammable and Combustible liquids must be stored and covered in approved containers, away from potential ignition sources;
- All chemical spills must be cleaned up immediately;
- Cleanup materials and damaged containers must be properly managed;
- Combustible materials and trash must not be allowed to accumulate, and must be stored away from potential ignition sources;
- Routine cleanup of accumulated debris and dust on floors and around equipment, exhaust systems and electrical units to reduce fuel sources;

- Aisle ways must be kept free of clutter and trash;
- Fire exits must never be blocked.

Major Fire Hazards: There are some basic conditions and hazards present in most industrial settings. The following are common types of hazards and conditions that could result in an undesirable fire at this facility:

1. Electrical equipment is the number one cause of workplace fires. Electrical fires are the result of:
 - Overloaded fuses, circuits, motors, or outlets;
 - Wiring with frayed or worn insulation;
 - Loose ground connections;
 - Lights or machinery coming in contact with combustible materials.
2. Flammable liquids like gasoline, kerosene, solvents, and many chemicals present a fire hazard mainly because of their vapors. When these flammable vapors concentrate, and come in contact with an ignition source, you have a fire and possibly an explosion.
3. Smoking is another cause of fire. Lit cigarettes or matches can easily ignite many things capable of burning, like wood, paper or flammable liquids.
4. Space heaters are another fire source usually due to improper use and close proximity to combustible materials.
5. Welding and cutting operations are a fire hazard because of the flames and sparks (ignition sources) they create.
6. Spontaneous combustion – the slow buildup of heat in combustible materials like oily rags, which eventually erupts into fire.
7. Chemicals that are not a major fire hazard alone may become one when mixed with an incompatible substance such as: air; water; heat; or other chemicals. This is known as reactivity.
8. Exposure from adjoining buildings or neighbors – you may be doing all the right things, but your upwind neighbor just lit a REALLY BIG barbecue.
9. Static buildup and discharge, mainly during flammable liquid transfer.
10. Additional fire hazards associated with this operation are identified in Appendix C of this Plan.

Hazard Control and Minimization: Each of us has the opportunity to protect ourselves and our co-workers from fires by using caution and common sense to avoid conditions that could cause a fire. These common sense principals work at home as well:

1. Electrical equipment and wiring;
 - Never use wiring with insulation that is frayed or worn – replace it.
 - Keep electrical boxes and motor control centers closed at all times.
 - Check that ground connections are sound as this keeps electricity confined to a safe path.
 - Don't overload fuses, circuits, motors, or outlets.
 - Use the correct fuse for the job.
 - Avoid using temporary wiring and minimize extension cords.
2. Do not store items/material near lights or machinery.
3. Watch for over-heated transmission shafts or bearings, especially if in an area with dust, lint or grease which could burn.
4. Flammable/Combustible liquids:
 - Check MSDS to determine if a liquid is flammable before you use it.
 - Only use flammable liquids in well ventilated areas.
 - Avoid using near heat, fire, cigarettes, sparking tools, or anything that could produce an ignition source.
 - Store flammable liquids in approved containers, away from ignition sources.
 - Use bonding and grounding when transferring flammable liquids.
 - Keep containers closed when not in use.
 - Clean up leaks and spills immediately.
 - Don't ignore odors that indicate the presence of chemical vapors.
5. Smoking:
 - This is the easiest ignition source to prevent - restrict smoking to authorized areas and use ashtrays. Obey "No Smoking" signs.
 - Use common sense and don't smoke in areas where something flammable could ignite – like while pumping gasoline.
 - Extinguish matches and cigarettes carefully and properly.
6. Space heaters should only be used when absolutely necessary, with these fire prevention precautions:
 - Use only in well-ventilated areas.
 - Use only the fuel specified for that heater.
 - Position heater away from all combustible materials.

7. Welding, cutting and brazing: These activities naturally generate heat, flames, and sparks.
 - Whenever possible, conduct these operations in a separate room with a fire-resistant floor, or a clean dry wood floor covered with material that won't burn – wetting surfaces down first will also help.
 - Use a welding screen around the operation.
 - Keep welding and cutting operations as far away as possible from flammable liquids, vapors, dusts, and combustible materials.
 - Before welding or cutting on tanks, pipes and other containers, identify prior contents, verify that residual vapors are not present.
 - Use the Hot Work Permit System, including pre-job assessment, control of fuel sources, readily available extinguishing equipment, and a fire watch during and after the project.

8. Spontaneous Combustion is a slow buildup of heat that creates a fire. It occurs often when an accumulation of rags and waste has been saturated with flammable or oily materials.
 - Dispose of flammable/oily waste in closed, airtight metal containers, and empty the containers daily.
 - Keep flammable waste that cannot be put in containers in a cool, dry, well-ventilated area, and dispose of frequently.

9. Practice GOOD HOUSEKEEPING – many of the conditions that result in fires are due to poor housekeeping – a place for everything and everything in its place.

Firefighting Control Measures: Most firefighting is best left to the professionals - the local fire department. Our purpose here is to provide information to help get you out of a bad situation, not to aggressively attack a fire. Firefighting techniques vary depending on type of fire, fuel source, stage of the fire, available extinguishing materials, air flow, and so on. However, the basic principal of removing/eliminating one or more of the three components of the Fire Triangle is critical to extinguishing a fire.

OXYGEN: By removing oxygen, you suffocate or smother the fire. Sand, dirt, wet blankets or inert gases will starve many fires of oxygen and suppress the fire. Foams and other chemicals are also used to smother flammable liquids and vapors by isolating the fuel source from needed oxygen. Put a lit candle in a jar and cover it – the candle will extinguish in a matter of seconds.

FUEL SOURCES: By physically removing the fuel source, you eliminate the fire. However, this is difficult, dangerous and usually not practical.

IGNITION SOURCES: Once a fire has developed, ignition sources don't really matter. But, by removing heat through cooling, the energy needed to support the chemical reaction is no longer available – water is the most common coolant.

Fire Suppression Equipment: Portable fire extinguishers are available throughout the facility for escape purposes and/or for incipient and smoldering stage fires. All employees should have an understanding of the type of fire extinguisher to use for a certain type of fire. Not all fire extinguishers can put out all types of fires. In fact, using the wrong fire extinguisher on some fires can actually spread the fire. All fire extinguishers are identified by type of fire they will put out, as noted below:

Types of Fires and Corresponding Fire Extinguishers:

Class A: Class A extinguishers are used to put out fires involving ordinary burnables like wood, paper, rags, cloth, or trash, when you want to wet down and cool the area. The extinguishers themselves may use water, water base foam, loaded steam, or a multipurpose dry chemical to put out the fire.

Class B: Class B extinguishers are used to put out fires involving gases or flammable liquids such as oil, gasoline, paints, solvents, and grease. The extinguishers may use carbon dioxide, foam, or dry chemicals to put out the fire either by cutting off oxygen or reducing flame.

Class C: Class C extinguishers are used for fires involving or surrounding electrical equipment fires. The extinguishers usually use carbon dioxide or a dry chemical to put out fires. **Note:** Never use water on an electrical fire. Water conducts electricity and using it on an electrical fire could mean a dangerous shock for the person operating the extinguisher.

Combination ABC or BC: Combination ABC or BC extinguishers are used when a fire combines one or more of the three types of fires we have described.

Class D: Class D extinguishers are used for fires in combustible metals including sodium, magnesium, zinc, potassium, powdered aluminum, and titanium.

All employees should have an understanding of proper fire extinguisher use and the various types of extinguishers. Most importantly, people are not replaceable - buildings and equipment are. If a fire cannot be easily controlled by existing fire extinguishers, alert others, leave the area and call for professional assistance. The primary use of fire extinguishers is for escape purposes.

Fire Extinguisher Use: By remembering the simple acronym “**PASS**”, you can use most any fire extinguisher effectively:

P = Pull the pin on the handle of the extinguisher;

A = Aim the nozzle at the base of the fire;

S = Squeeze the handle to begin discharging the contents of the extinguisher;

S = Sweep nozzle across the base of the fire to distribute extinguishing agent.

First Aid

If you are involved in a fire, you may have to administer first aid until medical help arrives. Here are some recommendations:

- If clothing catches fire, **STOP, DROP** to the floor or ground, and **ROLL** to smother the flames – this isn't as easy as it sounds – people panic.
- If someone has inhaled smoke, get the person to fresh air immediately. If they're not breathing and you know CPR, administer it. Otherwise, get someone who can.
- If someone is on fire, wrap the person in a blanket, coat or other preferably wet material that can help smother the flames.
- If someone has been burned, cut away any loose clothing, but don't remove clothing that is stuck to a burn.
- Put cool water on burns, and then if possible, cover them with a moist sterile dressing. If the arms or legs have been burned, elevate them.

And, whatever you do, notify others and get medical attention for any victims.

Specific emergency situations and corresponding response measures for Napuck Salvage are described in the following section – Emergency Action Plan.

SUMMARY: The old adage ***“An ounce of Prevention is worth a pound of Cure”*** certainly holds true in the area of fire prevention. By adhering to the following basic procedures, we will go a long way towards avoiding a fire – at work or at home:

- Practice Good Housekeeping – clean up your work area daily, put things away, and don't allow material and debris to accumulate.
- Routinely inspect equipment and electrical items for damage, wear and buildup of dirt, grease, and other possible fuel sources.
- Routinely perform preventive maintenance – well greased equipment doesn't wear as fast and doesn't generate excessive heat.
- Don't store items near or around electrical equipment, lights, heaters, etc.
- Respect all chemicals you work with or around – follow all handling and storage requirements, keep containers closed, clean up spills promptly.
- Watch for and control/eliminate possible ignition sources.
- Routinely inspect and maintain emergency equipment.
- Always ensure a safe means of escape from your work area.
- **PAY ATTENTION!!!** Be aware of conditions that will produce or support the Fire Triangle.
- Avoid conditions that can lead to fires – and you won't have fires.

Emergency Action Plan

This Emergency Action Plan (EAP) has been developed to ensure employee safety in the event of a fire or other emergency. It establishes notification procedures, describes emergency evacuation and accountability procedures, and identifies potential site-specific emergencies and response measures.

Fires, severe weather, chemical releases, and personal injury are all situations that would constitute an emergency, and will require some level of emergency response including possible evacuation of the facility. Additionally, any of these events may require the need for outside emergency responders. It is critical to establish basic procedures during NON-EMERGENCY times, when we are calm and thinking clearly – and then trust and follow those procedures during an actual emergency, when we may be panicked and disoriented or confused.

Our primary objective is the safety of all employees. To ensure employee and visitor safety, our plan is designed to get personnel away from danger, account for all employees and visitors, and treat injuries. If safe to do so, we will also attempt to take defensive measures designed to minimize potential impacts to the environment and limit business losses.

There are two old sayings that apply to emergencies:

- **Murphy's Law:** Whatever can go wrong, will go wrong.
- **Boy Scout Slogan:** Be prepared.

In most emergencies, the employee's role is limited. One of the keys to handling these situations is to turn them over to people who have received special training and who have the proper equipment for the job. But even if you are not part of an emergency response crew, you still have two important roles to play:

- Quickly and safely get yourself away from the hazard or danger.
- Immediately notify others;

Accidents can and do happen. It is critical that all employees are familiar with the procedures to follow in an emergency. In a real emergency, there is no time to think – if you want to survive, you have to act quickly and correctly. The following is a guide for employees to follow in the event of an emergency. A facility floor plan, evacuation routes, and RALLY POINTS are posted at the facility and attached – Appendices A and B. There is also a list of anticipated emergencies and response measures for this facility – Appendix C. All employees are required to become familiar with evacuation routes and are encouraged to familiarize themselves with the various types of emergencies and appropriate response measures for this site. All employees are required to follow the minimum response procedures, including notification and evacuation.

Emergency Evacuation Procedures and Escape Routes

In the event an emergency alarm is sounded, or you become aware of an emergency, take the following steps:

- **STAY CALM AND DON'T PANIC!!!**
- As you are leaving, shut off equipment and close doors if safe to do so.
- Proceed to the nearest available and safe exit and leave the building as quickly as possible. Go to your designated RALLY POINT and wait.
- If others are in your immediate surroundings (employees or customers), direct them to come with you.
- If you observe an emergency situation unfolding – IMMEDIATELY notify your supervisor and initiate any alarm procedures.
- Floor plans showing the emergency escape routes have been developed and are posted in various areas of the facility – BECOME FAMILIAR with these routes and their proximity to your work area – Appendix A.
- Stairwells are the primary means for evacuation, and elevators should only be used by fire/EMT, or to assist physically handicapped personnel.
- Once at the Rally Point, don't wander around or leave the area. We must be able to account for all employees. Assist with the head count if able.
- Employees must not re-enter a building/area until an ALL-CLEAR has been issued by the Manager or Emergency Response Coordinator (ERC).

Critical Plant Operations Procedures

There are no critical office or yard operations that must be maintained during an evacuation. However, there may be situations where designated response personnel will remain within the facility to perform emergency response measures for which they are trained, provided they can perform these duties in a safe manner. At no time will any employee put him/herself at unnecessary risk.

Employee Head Count Procedures

The Facility Manager or the designated ERC will conduct head counts once evacuation has been completed. Before evacuating the facility, designated employees will check offices, rooms and other enclosed spaces in the workplace for employees who may be trapped or otherwise unable to evacuate the building. Under no circumstances should any employee enter an unsafe area or condition.

Rescue and Medical Duties

In the event of a serious accident or injury, the need for professional medical assistance may be necessary. Emergency Phone Numbers are posted at each phone. The decision to request outside emergency assistance (fire, police, EMS) shall be made by the Facility Manager or designated ERC. Until professional

assistance arrives, provide any medical assistance you are trained and qualified to perform. In general, don't move an injured person.

Outside Notification Procedures: Emergency Phone Numbers are posted at all telephones. In general, the decision to summon outside help will be made by the Facility Manager, ERC or supervisor. However, in the event that you need assistance from emergency services (Fire, EMS, Ambulance/Rescue, Police), do the following:

- Remain calm;
- If possible, use a land line rather than a cell phone;
- Speak clearly and slowly;
- Give the exact location of the emergency;
- Describe the situation with as much detail as possible – type and nature of emergency, victims, any chemical information, etc.;
- Give the phone number and address from where you are calling;
- Do not hang up until told to do so.
- Ensure that a spotter has been sent to the facility entrance to guide outside response personnel to the emergency.

Professional emergency services responding to a call will usually assume responsibility for coordinating response measures, and will direct all rescue and medical duty assignments upon their arrival on-site. The facility manager or ERC should remain available to provide information to emergency responders.

Fire and Emergency Reporting Procedures

In the event of a fire, go to the nearest fire alarm and activate the alarm by pulling the lever. The alarm will notify other facility personnel and the local fire department/emergency response team. In the absence of fire alarms, go to the nearest telephone, two-way radio, CB or walkie-talkie and notify your supervisor. As a last effort, yell as you calmly leave the area. The supervisor or manager will assess the situation and call for emergency assistance. Emergency telephone numbers are posted at all phones. Ensure that a spotter has been sent to the facility entrance to direct fire and rescue services to the emergency location. All other employees are to evacuate the building/area of fire and proceed to the Rally Point. The professional fire fighters will handle the fire.

In the event of severe weather, tornado, etc., the facility manager or his/her designee will make the decision to move employees to the designated Severe Weather Shelter. At the time of this notification, all employees are required to evacuate to their assigned shelters - see Appendix B. Weather reports are monitored anytime bad weather is forecast via weather radios or the internet. In the event of high winds, be aware of flying debris and stay clear of downed power lines.

Other anticipated site-specific emergencies and corresponding response measures are described in Appendix C.

Management Responsibilities and Accountability:

The facility manager and designees are responsible for the following activities:

1. Immediately notify fire, EMS and police as needed in the event of an emergency affecting personnel or the facility.
2. Ensure that medical attention is given to any injured personnel.
3. Make decisions relating to evacuation and other response measures in the event of an emergency.
4. As soon as practical, notify RMG Directors and Health and Safety Mgr.
5. Ensure that an Incident Investigation is initiated as soon as feasible.
6. Ensure that all employees have received training on reporting fires and other emergencies, the location of fire exits and evacuation routes.
7. Ensure that fire/ER drills are conducted annually to acquaint employees with emergency procedures and evaluate plan effectiveness.
8. Ensure that designated employees are trained in the use of fire fighting and other emergency equipment and basic first aid techniques.
9. Maintain contact information for key response personnel in a safe place for immediate use in the event of an emergency.

Emergency Response Coordinator (ERC) Information

Facility Manager/ERC	Contact Info. W/H/C	Duties
Jeff Handelman	W: 773-382-0110 H: C: 773-491-1696	Initiate/oversee evacuation; contact EMS; direct response measures; coordinate with RMG. Oversee investigation.
Supervisor/Alternate ERC Juan Padilla	W: 773-382-0001 H: C: 312-350-3528	Facilitate evacuation; conduct head counts; assist with response; contact EMS if needed; investigate incident
Alternate ERC/Safety Nicholas Blachuciak	W: 773-966-0673 C: 312-273-0197	Facilitate evacuation; conduct head count; assist with response; contact EMS if needed; investigate incident

Training

Basic Emergency Response procedures must be simple, direct and carried out without confusion. All employees must understand notification procedures, how to get help, emergency equipment locations, escape routes and rally points, and tasks that may be required of them during an emergency. The success of this Plan is dependent on employee knowledge and actions. All employees will receive training at the time of hire, and annually. Unannounced drills are also conducted to measure training and response effectiveness.

This Plan will be reviewed and amended as conditions change or when drills or actual emergencies uncover discrepancies in the Plan.

Appendix A

Floor Plans/Maps & Emergency Evacuation Routes

South Shore Recycling
11600 South Burley Avenue
Chicago, IL 60617
773-374-0299

Revised: January, 2007

Revised: March, 2020

Appendix B

Rally Points & Severe Weather Shelter(s)

South Shore Recycling
11600 South Burley Avenue
Chicago, IL 60617
773-374-0299

Appendix C

Site-Specific Potential Emergencies And Response Measures

South Shore Recycling
11600 South Burley Avenue
Chicago, IL 60617
773-374-0299

Appendix C

Emergency Response Procedures

South Shore Recycling

Responsible Parties:

Facility Manager: Jeff Handelman – ERC
Yard Manager: Juan Padilla – Alternate ERC

Facility Communications:

- Communications via 2-way radio between supervision/management and employees/operators;
- Communications to 3rd party/Trucks is then verbal

Rally Points:

- **All Operations** – All employees/drivers/peddlers meet at the bottom of entrance ramp between South Shore Recycling and RMT offices.

Potential Emergencies:

Fire in building
Outside scrap pile catches fire
Equipment catches fire
Employee/person injured
Explosion or sudden pressure release
Leaking torching equipment/leaking hose or cylinder damage
Chemical release from equipment or material being torched
Mobile Equipment flips
Air emissions (smoke, chemical, etc.) from off-site affect area
Robbery
Severe weather: lightning, high winds, tornado, temp. extremes

General Procedures:

- Upon observing/becoming aware of a problem, immediately notify management.
- Manager/supervisor should immediately assess situation visually, from a safe (upwind/uphill) approach, in addition to info relayed from call.
- If serious fire or personal injury is involved, responding management personnel should immediately call 911 for emergency assistance.
- Dispatch a “Spotter” to main drive at S. Burley and 116th Street to direct response personnel.
- If facility personnel are at risk, immediately initiate Evacuation and direct all employees to designated Rally Points.
- Secure area and ensure that all individuals are accounted for. Keep people upwind of situation.
- Notify RMT security gate, and corporate HSE.

Specific Emergency Procedures:

Building Fire:

- If fire is observed, immediately notify manager/supervisor for assessment/evacuate local personnel to Rally Point and conduct head count.
- If fire is large, unconfined, or producing smoke, evacuate all personnel to Rally Point and conduct head count; contact local Fire Dept for assistance.
- Control local traffic in area and await FD assistance.
- If fire is incipient and local fire extinguishers can be use to suppress, attempt to extinguish – Do not actively attack fire or place self at risk.
- Send Spotter to entrance; notify RMT Security Gate and Corporate HSE.

Scrap or Residue Pile Fire - Outside:

- Remove all personnel and equipment (if safe to do so) from area and conduct a head count.
- If fire is small, attempt to separate material from rest of pile with loader – DO NOT PLACE SELF OR EQUIPMENT AT RISK – attempt to create remote fire break and reduce fuel source.
- If fire is large, contact local Fire Dept. for emergency assistance – smoke from burning plastic can be noxious/toxic.
- Send Spotter to main entrance
- Secure area and keep personnel upwind of incident.
- Make appropriate notifications to RMT Security gate and corporate HSE.

Equipment On Fire:

- Immediately notify management.
- If operator is still in control of equipment, and it is safe to do so, attempt to quickly position equipment outside and at least 25 feet from any other structure; otherwise, immediately exit equipment.
- If fire is small, attempt to extinguish without placing self at risk – do not re-board burning equipment – additional extinguishers available on other equipment and mounted in various areas.
- Secure area and ensure all employees are accounted for.
- If needed, call local Fire Dept. for assistance, send Spotter to entrance.
- Create remote dirt/FloorDri containment berm/dike if necessary to minimize off-site migration of oils/contaminated runoff from fire water.
- Make appropriate notifications to RMT Security gate and corporate HSE.

Personal Injury:

- Notify management immediately.
- Ensure that victim is not in immediate risk of additional injury.
- Ensure that you are not at risk by attempting to help/attend to victim.
- Secure area and assess victim and nature of injuries.
- Call 911 for emergency assistance if warranted – send Spotter.

- If corrosive chemical exposure is involved, immediately flush victim with copious amounts of water and neutralizing agent – remove contaminated clothing; avoid chemical exposures to responders.
- Address any potential blood borne pathogen exposures.
- Begin to conduct investigation.
- Make appropriate notifications to RMT Security gate and corporate HSE.

Explosion/Sudden Pressure Release:

- Notify management, if warranted, evacuate all personnel to Rally Point and conduct head count.
- If there are injuries or missing personnel, follow personal injury procedures and immediately call 911 for assistance.
- If no injuries or missing personnel, assess situation and conditions surrounding explosion/pressure relief – IF SAFE TO DO SO.
- Approach from upwind direction and attempt to determine nature and cause of incident.
- IF hazardous conditions still exist, contact 911 for assistance.
- If incident has passed, no residual chemicals are present, and hazards no longer exist, conduct thorough investigation – notify corporate HSE.

Leaking Welding/Cutting/Torching Equipment:

- Under normal circumstances, this situation should not constitute an emergency. Routine monitoring of all associated equipment will minimize the potential for catastrophic incident.
- Upon discovering a leak, immediately extinguish torch and close supply valves at oxy/fuel source (cylinder or tank).
- Notify management of situation and severity.
- Follow LOTO procedure for repair to hose or torch.
- If a problem exists with a tank or cylinder, immediately contact supplier for assistance. DO NOT ATTEMPT TO REPAIR OR OTHERWISE WORK ON A LEAKING TANK OR CYLINDER.

Chemical Release:

- Notify management and remove all personnel from immediate area.
- Secure area and keep personnel upwind/uphill from release.
- If material is known (oil from equipment, etc), follow spill response procedures.
- If propane fuel leak is discovered – shut down equipment, extinguish any ignition sources, close valve on propane cylinder and disconnect if safe to do so.
- If propane cylinder is damaged, move equipment outdoors and evacuate area – contact supplier for assistance – DO NOT ATTEMPT TO REPAIR CYLINDERS.
- If material is corrosive (damaged batteries, ect), establish remote containment with FloorDri, dirt or other containing media. For small spills, slowly neutralize contained material AFTER release has been stopped and employees accounted for.

- If large or uncontrolled release, evacuate local personnel and contact corporate HSE, local emergency response spill contractor and/or local Fire Dept/HazMat for assistance.
- If material is unknown, contact corporate HSE for guidance, contact local FD/HazMat and/or Emergency Response spill contractor if warranted.
- If personal injury or fire is involved, follow applicable procedures.

Equipment Tips/Flips Over:

- Notify management and ensure that no personnel are injured.
- If there are victims, follow Injury Procedure.
- Secure area and ensure there are no ignition sources present.
- Dike or otherwise contain any spilled material.
- Investigate cause of tip – take pictures to document and support.
- Using standard methods and practices, attempt to upright equipment, only if it can be done so safely. Ensure there are no overhead lines or other conditions that could create additional problems.
- Seek outside assistance if warranted. Notify corporate HSE.

Off-Site Emissions:

- In the event that an airborne noxious or otherwise hazardous emission source migrates towards/onto this facility, immediately notify RMT management as other personnel/operations could also be at risk.
- Relocate Rally Point inside building and conduct head count – stay inside if possible until plume passes.
- If outdoors and plume is approaching, move sidewind/upwind from plume.
- If injuries occur, follow Injury Procedures.
- Notify Corporate HSE and local Fire Dept/HazMat for assistance.

Attempted Robbery: The scale house/cash pay window is equipped with surveillance cameras, bullet-proof glass, two panic buttons that activate a loud audible alarm, and an electronic security system. In the event that individuals attempt to rob this operation, personnel should attempt to remain calm. If you can activate panic button without placing self at risk, do so. Disruptions to a planned robbery can quickly cause perpetrators to abandon plan and leave.

- Do not compromise established barriers (don't open the door) but be cooperative – we can replace cash, we cannot replace an individual.
- If demanded, hand over cash from cash drawer only.
- Do not volunteer cash from safe or provide any other information or options for perpetrator.
- Attempt to notify employees so that they can quietly exit facility through remote doors on north end and remove themselves from potential harm.
- Do not attempt to apprehend or otherwise subdue perpetrators as this can quickly elevate hazards of the situation.
- Observe individuals and make note of physical appearances and vehicle description. We also have video footage to assist in descriptions.

- RMT Security gate should also be notified and should get personal and vehicle descriptions, but make no attempt to subdue or detain fleeing perpetrator.

By practicing good security measures at all times (locked doors, visible surveillance cameras, limiting view of cash, 3rd party delivery of cash) the potential for a robbery can be minimized. The more barriers that are in place, the less likely a robbery attempt will occur.

SEVERE WEATHER: The Facility can monitor weather conditions via the internet. During periods when severe weather is imminent, facility personnel will monitor local weather conditions in real time and respond accordingly.

Lightning and thunderstorms – these events typically pass through an area rather quickly.

- Contact management and seek shelter until event passes – usually within 15-30 minutes.

High winds – high winds can create hazardous conditions due to excessive dust, the possibility of small and often sharp material becoming airborne, and loss of control of equipment (crane booms). This condition should be assessed by management with input from local weather forecast.

- If winds are excessive, stop work and remove personnel from high hazard areas until conditions subside.
- Avoid areas where loose material could become airborne (building or roof panels).

Tornado –

- Immediately evacuate all personnel to Safe Haven and conduct head count.
- Notify management and ensure that warning has been relayed to all other on-site operations. If possible, notify corporate HSE.
- Wait for event to pass.

Temperature extremes – although these operations are primarily in buildings, there is a potential for hazardous temperature extremes (severe cold and excessive heat). These conditions should be monitored on a daily basis by all personnel. Employees are expected to come to work prepared to deal with daily conditions. Employees are trained in recognizing hazardous conditions and symptoms of heat/cold stress. Failing to address these conditions can lead to personal injury/ medical emergencies and should be monitored by all on a daily basis. This type of emergency is predictable and should not happen. If an individual does experience a temperature extreme-related injury, follow Injury Procedure – severe cases can be Life Threatening.

POST-EMERGENCY PROCEDURES:

After an emergency has occurred, and all conditions have stabilized, it is critical that a thorough and complete Incident Investigation be completed. This investigation should not only address the causes of the emergency, but should focus on the response and reaction times as well as effectiveness of response measures. Depending on the type and nature of an emergency, additional reporting requirements to various government agencies and insurance carriers may be required. Seek guidance and assistance from Corporate HSE. In addition to an Incident Investigation, it is necessary to generate the following information:

- An accurate and thorough account of all incurred physical property damages and losses (equipment, structures, property, environment),
- Photographs, drawings, etc. that document and portray the type, nature and degree of losses/damage.
- Detailed account of response/mitigation measures and associated costs.
- Costs associated with lost/damaged equipment and property.

These findings must be evaluated by management and lessons learned must be integrated into revised Emergency Response Procedures for potential future events. Training with all personnel covering the causes, investigation findings, and any procedural changes shall be conducted as warranted.

These emergency response procedures be reviewed annually, and associated training will be then be conducted annually and/or after an even that triggers use of this Emergency Response Plan.

Emergency Action and Fire Prevention Plan

Regency Technologies

**11600 S Burley Ave.
Chicago IL 60617**

Table of Contents

Purpose and Scope of Plan

Fire Prevention Plan

Emergency Action Plan

Appendix A – Floor Plans/Maps/Evacuation Routes

Appendix B – Rally Locations and Severe Weather Shelter(s)

Appendix C – Site Specific Emergencies and Response Measures

PURPOSE and SCOPE

The purpose of this Plan is to establish written policies and procedures designed to minimize the negative impacts to our employees, business assets and the environment from fires and other emergency situations that could occur at this facility. This Plan has been developed in accordance with Occupational Safety and Health Act (OSHA) requirements as defined in 29 CFR 1910 Subpart E.

The first section of the Plan describes required practices and procedures for all employees in the area of fire prevention. If we can prevent or minimize conditions that produce undesirable fires from starting, we greatly reduce the potential for injury or loss of life and property.

The second section of the Plan describes measures we will take in the event of a reasonably anticipated emergency situation to protect our employees, property and the environment from further damage or loss. These situations may include fires and explosions, hazardous chemical releases, severe weather conditions, and personal injury. The success of this Plan is dependent on the ability of all employees to recognize situations that could lead to an emergency, actual emergencies, and critical response measures including immediate notification and evacuation procedures.

In the event of an emergency, management and employees must know what to do. Some emergency situations will warrant total and immediate evacuation of all employees. In other emergencies, a partial evacuation of nonessential employees, with defensive measures by other employees may be necessary for continued plant operations. In some cases, only those employees in the immediate area of an emergency may be expected to evacuate or move to safe areas. All employees must know what is expected of them in these anticipated emergency situations in order to assure their own safety as well as the safety of others.

Fire Prevention Plan

Undesirable fires are preventable and avoidable – yet they occur every day. And the catastrophic results – loss of life and property – are simply unacceptable. For a fire to occur, certain and predictable conditions must be met. But how many of us are aware of these conditions, and what we can do to eliminate them?

It is the Policy of Regency Technologies to conduct our business in a manner consistent with this Plan, and to take all reasonable measures necessary to ensure the safety of our employees, minimize potential environmental impacts, and protect the physical assets of our business in the event of a fire. This is accomplished through a program of established work practices, acceptable facility conditions, employee training and drills, and adherence to this Plan in the event of an undesirable fire.

The purpose of this Fire Prevention Plan is to:

- identify conditions and practices that can result in a fire at this facility;
- enhance the awareness of all employees regarding conditions and practices that can lead to a fire;
- ensure that established practices and procedures are followed to minimize or eliminate situations that can lead to an undesirable fire; and
- establish emergency procedures designed to prevent loss of life and limit property damage and environmental impacts in the event of a fire.

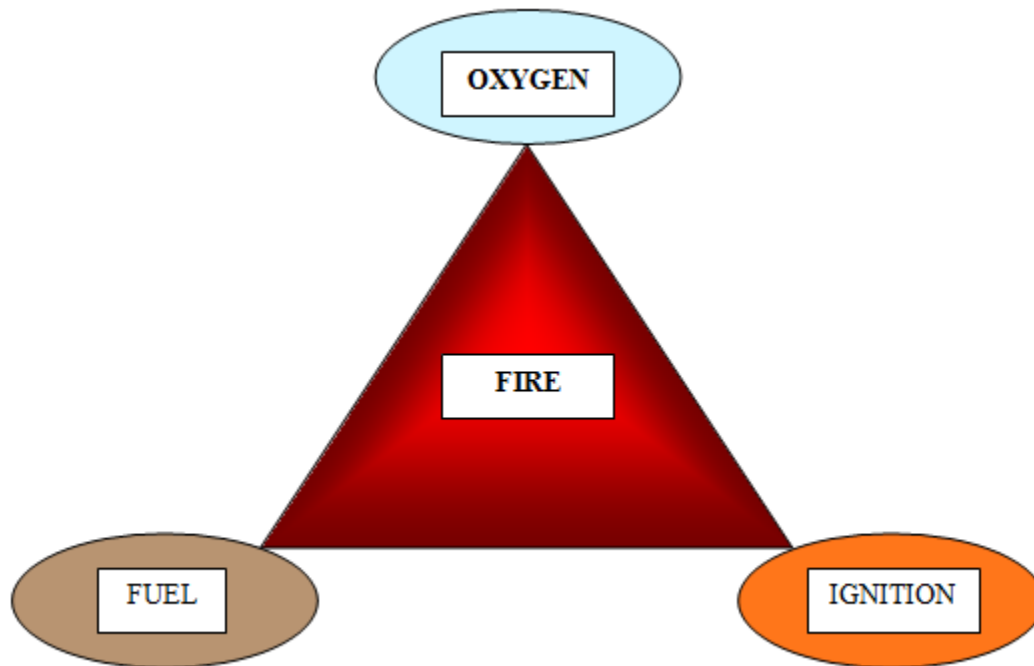
Fires can develop quickly, and a building structure or work area can become fully involved in a matter of minutes, if not seconds. It is not the intent of this Plan to direct employees to aggressively attack or fight a fire – we are not a Fire Brigade. Rather, the procedures described in this Plan are intended to minimize conditions leading to a fire, and guide employees in defensive tactics to remove themselves from harm, and reduce damage and loss to facility assets.

General facts about fire:

- No facility or structure is absolutely fireproof.
- Fire, flame, heat, smoke and toxic gases will spread through a building both vertically and horizontally.
- The spread of heat, smoke, and toxic gases is probably the greatest single danger to life – smoke and toxic gases are responsible for 75% of fire deaths in buildings.
- Early on-site detection of a fire is essential – there are usually only a few minutes between the beginning of combustion and the development of a fully involved destructive fire.
- What happens (or doesn't happen) in the first few minutes of a fire pretty well determines if the fire can be controlled or not.
- People and their actions are key elements – over half of all fires are the result of human element problems – lack of awareness or response.

Fire Prevention

In general, for a fire to occur, three conditions must be present – OXYGEN, a FUEL SOURCE and an IGNITION SOURCE. When these three conditions are met, we have established “THE FIRE TRIANGLE”.



THE FIRE TRIANGLE

Basically, when all three ingredients are present in sufficient quantity, a chemical reaction takes place, energy is released, and a fire occurs. The whole concept of fire prevention revolves around controlling or eliminating one or more of these ingredients so that the Fire Triangle cannot be completed or sustained – and fire cannot occur.

OXYGEN: Oxygen is present in the atmosphere at approximately 20.8%. Under normal conditions, there isn't much we can do about that – oxygen is present and one third of the fire triangle is satisfied. Depending on the fuel source, combustion can be supported with oxygen concentrations as low as 12-14%. As oxygen concentrations increase to levels above 23.5%, materials not normally prone to rapid combustion become ready fuel sources – like hair and clothing. A good rule of thumb: ***the more oxygen that is present, the more aggressively and rapidly a fire will burn.*** That's why blowing on a campfire helps get it going better – and using compressed oxygen to blow dust off yourself is a BAD idea. One last point about oxygen – there is a group of chemicals known as Oxidizers. These are substances that yield oxygen readily to stimulate the combustion of certain other substances. They are bad actors in that their presence increases the potential for a fire – they actively supply oxygen and enhance the chemical reaction necessary to support the combustion process.

FUEL SOURCES: Most anything can become a fuel under the right conditions – sufficient/excessive oxygen and/or a strong enough ignition/heat source. There is a huge range for fire potential when discussing fuel sources. Key ingredients for a good fuel source are the

hydrogen and carbon content, as well as oxygen, nitrogen and sulfur. For this reason, organic compounds like oils, hydrocarbons, alcohols and coal tars naturally present a greater fire hazard – they are rich in carbon and hydrogen. Organic liquids and gases present an even greater potential as the nature of liquids, vapors and gases offers an elevated opportunity for supplying fuel – evaporation and available surface area increase the interaction with oxygen, and thus enhances the potential for fire. Everyday items like paper and cardboard, oily rags, wood, and the many chemicals that surround us are ready sources of fuel if introduced to the Fire Triangle.

IGNITION SOURCES: Ignition sources are things that provide sufficient heat or energy to initiate the chemical reaction we call combustion. Open flames, electricity and electric arcs, sparks, sufficiently hot surfaces, static buildup, and certain chemical reactions are all good examples of ignition sources. When the other two components of the Fire Triangle are satisfied, the Ignition Source becomes the catalyst that initiates the combustion process.

FIRE PREVENTION AND CONTROL: Fire prevention focuses on managing conditions and practices to ensure that the three components of the Fire Triangle do not exist together. Fire control involves removing one of the three components after a fire has occurred. It is much **easier to manage and control** the three components of the Fire Triangle **before** they meet, rather than to **separate** them **after** a fire has started.

One of the first rules of fire prevention is good housekeeping. By controlling the buildup and accumulation of fuel sources like paper, cardboard and chemicals, we significantly reduce the potential for a fire. **NO FUEL = NO FIRE.** Not only can good housekeeping prevent a fire from starting, good housekeeping can:

- 1) Make evacuation and rescue efforts easier.
- 2) Help prevent the spread of a fire.
- 3) Make fighting a fire an easier and safer task.

Some specific housekeeping rules that directly impact fire prevention are:

- Flammable and Combustible liquids must be stored and covered in approved containers, away from potential ignition sources;
- All chemical spills must be cleaned up immediately;
- Cleanup materials and damaged containers must be properly managed;
- Combustible materials and trash must not be allowed to accumulate, and must be stored away from potential ignition sources;
- Routine cleanup of accumulated debris and dust on floors and around equipment, exhaust systems and electrical units to reduce fuel sources;
- Aisle ways must be kept free of clutter and trash;
- Fire exits must never be blocked.

Major Fire Hazards: There are some basic conditions and hazards present in most industrial settings. The following are common types of hazards and conditions that could result in an undesirable fire at this facility:

1. Electrical equipment is the number one cause of workplace fires. Electrical fires are the result of:
 - Overloaded fuses, circuits, motors, or outlets;
 - Wiring with frayed or worn insulation;
 - Loose ground connections;
 - Lights or machinery coming in contact with combustible materials.
2. Flammable liquids like gasoline, kerosene, solvents, and many chemicals present a fire hazard mainly because of their vapors. When these flammable vapors concentrate, and come in contact with an ignition source, you have a fire and possibly an explosion.
3. Smoking is another cause of fire. Lit cigarettes or matches can easily ignite many things capable of burning, like wood, paper or flammable liquids.
4. Space heaters are another fire source usually due to improper use and close proximity to combustible materials.
5. Welding and cutting operations are a fire hazard because of the flames and sparks (ignition sources) they create.
6. Spontaneous combustion – the slow buildup of heat in combustible materials like oily rags, which eventually erupts into fire.
7. Chemicals that are not a major fire hazard alone may become one when mixed with an incompatible substance such as: air; water; heat; or other chemicals. This is known as reactivity.
8. Exposure from adjoining buildings or neighbors – you may be doing all the right things, but your upwind neighbor just lit a REALLY BIG barbecue.

Printed copies are not controlled unless they are printed on yellow paper

9. Static buildup and discharge, mainly during flammable liquid transfer.
10. Additional fire hazards associated with this operation are identified in Appendix C of this Plan.

Hazard Control and Minimization: Each of us has the opportunity to protect ourselves and our co-workers from fires by using caution and common sense to avoid conditions that could cause a fire. These common sense principals work at home as well:

1. Electrical equipment and wiring;
 - Never use wiring with insulation that is frayed or worn – replace it.
 - Keep electrical boxes and motor control centers closed at all times.
 - Check that ground connections are sound as this keeps electricity confined to a safe path.
 - Don't overload fuses, circuits, motors, or outlets.
 - Use the correct fuse for the job.
 - Avoid using temporary wiring and minimize extension cords.
2. Do not store items/material near lights or machinery.
3. Watch for over-heated transmission shafts or bearings, especially if in an area with dust, lint or grease which could burn.
4. Flammable/Combustible liquids:
 - Check SDS to determine if a liquid is flammable before you use it.
 - Only use flammable liquids in well ventilated areas.
 - Avoid using near heat, fire, cigarettes, sparking tools, or anything that could produce an ignition source.
 - Store flammable liquids in approved containers, away from ignition sources.
 - Use bonding and grounding when transferring flammable liquids.
 - Keep containers closed when not in use.
 - Clean up leaks and spills immediately.
 - Don't ignore odors that indicate the presence of chemical vapors.
5. Smoking:
 - This is the easiest ignition source to prevent - restrict smoking to authorized areas and use ashtrays. Obey "No Smoking" signs.
 - Use common sense and don't smoke in areas where something flammable could ignite – like while pumping gasoline.
 - Extinguish matches and cigarettes carefully and properly.
6. Space heaters should only be used when absolutely necessary, with these fire prevention precautions:
 - Use only in well-ventilated areas.
 - Use only the fuel specified for that heater.
 - Position heater away from all combustible materials.

7. Welding, cutting and brazing: These activities naturally generate heat, flames, and sparks.
 - Whenever possible, conduct these operations in a separate room with a fire-resistant floor, or a clean dry wood floor covered with material that won't burn – wetting surfaces down first will also help.
 - Use a welding screen around the operation.
 - Keep welding and cutting operations as far away as possible from flammable liquids, vapors, dusts, and combustible materials.
 - Before welding or cutting on tanks, pipes and other containers, identify prior contents; verify that residual vapors are not present.
 - Use the Hot Work Permit System, including pre-job assessment, control of fuel sources, readily available extinguishing equipment, and a fire watch during and after the project.

8. Spontaneous Combustion is a slow buildup of heat that creates a fire. It occurs often when an accumulation of rags and waste has been saturated with flammable or oily materials.
 - Dispose of flammable/oily waste in closed, airtight metal containers, and empty the containers daily.
 - Keep flammable waste that cannot be put in containers in a cool, dry, well-ventilated area, and dispose of frequently.

9. Practice GOOD HOUSEKEEPING – many of the conditions that result in fires are due to poor housekeeping – a place for everything and everything in its place.

Firefighting Control Measures: Most firefighting is best left to the professionals - the local fire department. Our purpose here is to provide information to help get you out of a bad situation, not to aggressively attack a fire. Firefighting techniques vary depending on type of fire, fuel source, stage of the fire, available extinguishing materials, air flow, and so on. However, the basic principal of removing/eliminating one or more of the three components of the Fire Triangle is critical to extinguishing a fire.

OXYGEN: By removing oxygen, you suffocate or smother the fire. Sand, dirt, wet blankets or inert gases will starve many fires of oxygen and suppress the fire. Foams and other chemicals are also used to smother flammable liquids and vapors by isolating the fuel source from needed oxygen. Put a lit candle in a jar and cover it – the candle will extinguish in a matter of seconds.

FUEL SOURCES: By physically removing the fuel source, you eliminate the fire. However, this is difficult, dangerous and usually not practical.

IGNITION SOURCES: Once a fire has developed, ignition sources don't really matter. But, by removing heat through cooling, the energy needed to support the chemical reaction is no longer available – water is the most common coolant.

Fire Suppression Equipment: The facility is equipped with a water sprinkler system. Portable fire extinguishers are also available throughout the facility for escape purposes and/or for incipient and smoldering stage fires. All employees should have an understanding of the type of

fire extinguisher to use for a certain type of fire. Not all fire extinguishers can put out all types of fires. In fact, using the wrong fire extinguisher on some fires can actually spread the fire. All fire extinguishers are identified by type of fire they will put out, as noted below:

Types of Fires and Corresponding Fire Extinguishers:

Class A: Class A extinguishers are used to put out fires involving ordinary burnables like wood, paper, rags, cloth, or trash, when you want to wet down and cool the area. The extinguishers themselves may use water, water base foam, loaded steam, or a multipurpose dry chemical to put out the fire.

Class B: Class B extinguishers are used to put out fires involving gases or flammable liquids such as oil, gasoline, paints, solvents, and grease. The extinguishers may use carbon dioxide, foam, or dry chemicals to put out the fire either by cutting off oxygen or reducing flame.

Class C: Class C extinguishers are used for fires involving or surrounding electrical equipment fires. The extinguishers usually use carbon dioxide or a dry chemical to put out fires.

Note: Never use water on an electrical fire. Water conducts electricity and using it on an electrical fire could mean a dangerous shock for the person operating the extinguisher.

Combination ABC or BC: Combination ABC or BC extinguishers are used when a fire combines one or more of the three types of fires we have described.

Class D: Class D extinguishers are used for fires in combustible metals including sodium, magnesium, zinc, potassium, powdered aluminum, and titanium.

All employees should have an understanding of proper fire extinguisher use and the various types of extinguishers. Most importantly, people are not replaceable - buildings and equipment are. If a fire cannot be easily controlled by existing fire extinguishers, alert others, leave the area and call for professional assistance. The primary use of fire extinguishers is for escape purposes.

Fire Extinguisher Use: By remembering the simple acronym "PASS", you can use most any fire extinguisher effectively:

P = Pull the pin on the handle of the extinguisher;

A = Aim the nozzle at the base of the fire;

S = Squeeze the handle to begin discharging the contents of the extinguisher;

S = Sweep nozzle across the base of the fire to distribute extinguishing agent.

First Aid

If you are involved in a fire, you may have to administer first aid until medical help arrives. Here are some recommendations:

- If clothing catches fire, **STOP, DROP** to the floor or ground, and **ROLL** to smother the flames – this isn't as easy as it sounds – people panic.
- If someone has inhaled smoke, get the person to fresh air immediately. If they're not breathing and you know CPR, administer it. Otherwise, get someone who can.
- If someone is on fire, wrap the person in a blanket, coat or other preferably wet material that can help smother the flames.
- If someone has been burned, cut away any loose clothing, but don't remove clothing that is stuck to a burn.
- Put cool water on burns, and then if possible, cover them with a moist sterile dressing. If the arms or legs have been burned, elevate them.

And, whatever you do, notify others and get medical attention for any victims.

Specific emergency situations and corresponding response measures for Regency Technologies are described in the following section – Emergency Action Plan.

SUMMARY: The old adage ***“An ounce of Prevention is worth a pound of Cure”*** certainly holds true in the area of fire prevention. By adhering to the following basic procedures, we will go a long way towards avoiding a fire – at work or at home:

- Practice Good Housekeeping – clean up your work area daily, put things away, and don't allow material and debris to accumulate.
- Routinely inspect equipment and electrical items for damage, wear and buildup of dirt, grease, and other possible fuel sources.
- Routinely perform preventive maintenance – well greased equipment doesn't wear as fast and doesn't generate excessive heat.
- Don't store items near or around electrical equipment, lights, heaters, etc.
- Respect all chemicals you work with or around – follow all handling and storage requirements, keep containers closed, clean up spills promptly.
- Watch for and control/eliminate possible ignition sources.
- Routinely inspect and maintain emergency equipment.
- Always ensure a safe means of escape from your work area.
- PAY ATTENTION!!! Be aware of conditions that will produce or support the Fire Triangle.
- Avoid conditions that can lead to fires – and you won't have fires.

Emergency Action Plan

This Emergency Action Plan (EAP) has been developed to ensure employee safety in the event of a fire or other emergency. It establishes notification procedures, describes emergency evacuation and accountability procedures, and identifies potential site-specific emergencies and response measures.

Fires, severe weather, chemical releases, and personal injury are all situations that would constitute an emergency, and will require some level of emergency response including possible evacuation of the facility. Additionally, any of these events may require the need for outside emergency responders. It is critical to establish basic procedures during NON-EMERGENCY times, when we are calm and thinking clearly – and then trust and follow those procedures during an actual emergency, when we may be panicked and disoriented or confused.

Our primary objective is the safety of all employees. To ensure employee and visitor safety, our plan is designed to get personnel away from danger, account for all employees and visitors, and treat injuries. If safe to do so, we will also attempt to take defensive measures designed to minimize potential impacts to the environment and limit business losses.

There are two old sayings that apply to emergencies:

- **Murphy's Law:** Whatever can go wrong, will go wrong.
- **Boy Scout Slogan:** Be prepared.

In most emergencies, the employee's role is limited. One of the keys to handling these situations is to turn them over to people who have received special training and who have the proper equipment for the job. But even if you are not part of an emergency response crew, you still have two important roles to play:

- Quickly and safely get yourself away from the hazard or danger.
- Immediately notify others;

Accidents can and do happen. It is critical that all employees are familiar with the procedures to follow in an emergency. In a real emergency, there is no time to think – if you want to survive, you have to act quickly and correctly. The following is a guide for employees to follow in the event of an emergency. A facility floor plan, evacuation routes, and RALLY POINTS are posted at the facility and attached – Appendices A and B. There is also a list of anticipated emergencies and response measures for this facility – Appendix C. All employees are required to become familiar with evacuation routes and are encouraged to familiarize themselves with the various types of emergencies and appropriate response measures for this site. All employees are required to follow the minimum response procedures, including notification and evacuation.

Emergency Evacuation Procedures and Escape Routes

In the event an emergency alarm is sounded, or you become aware of an emergency, take the following steps:

- **STAY CALM AND DON'T PANIC!**

Printed copies are not controlled unless they are printed on yellow paper

- As you are leaving, shut off equipment and close doors if safe to do so.
- Proceed to the nearest available and safe exit and leave the building as quickly as possible. Go to your designated RALLY POINT and wait.
- If others are in your immediate surroundings (employees or customers), direct them to come with you.
- If you observe an emergency situation unfolding – IMMEDIATELY notify your supervisor and initiate any alarm procedures.
- Floor plans showing the emergency escape routes have been developed and are posted in various areas of the facility – BECOME FAMILIAR with these routes and their proximity to your work area – Appendix A.
- Stairwells are the primary means for evacuation, and elevators should only be used by fire/EMT, or to assist physically handicapped personnel.
- Once at the Rally Point, don't wander around or leave the area. We must be able to account for all employees. Assist with the head count if able.
- Employees must not re-enter a building/area until an ALL-CLEAR has been issued by the Manager or Emergency Response Coordinator (ERC).

Critical Plant Operations Procedures

There are no critical office or warehouse operations that must be maintained during an evacuation. However, there may be situations where designated response personnel will remain within the facility to perform emergency response measures for which they are trained, provided they can perform these duties in a safe manner. At no time will any employee put him/herself at unnecessary risk.

Employee Head Count Procedures

The Facility Manager or the designated ERC will conduct head counts once evacuation has been completed. Before evacuating the facility, designated employees will check offices, rooms and other enclosed spaces in the workplace for employees who may be trapped or otherwise unable to evacuate the building. Under no circumstances should any employee enter an unsafe area or condition.

Rescue and Medical Duties

In the event of a serious accident or injury, the need for professional medical assistance may be necessary. The decision to request outside emergency assistance (fire, police, EMS) shall be made by the Facility Manager or designated ERC. Until professional assistance arrives, provide any medical assistance you are trained and qualified to perform. In general, don't move an injured person.

Outside Notification Procedures: In general, the decision to summon outside help will be made by the Facility Manager, ERC or supervisor. However, in the event that you need assistance from emergency services (Fire, EMS, Ambulance/Rescue, Police), do the following:

- Remain calm;
- If possible, use a land line rather than a cell phone;
- Speak clearly and slowly;
- Give the exact location of the emergency;

Printed copies are not controlled unless they are printed on yellow paper

- Describe the situation with as much detail as possible – type and nature of emergency, victims, any chemical information, etc.;
- Give the phone number and address from where you are calling;
- Do not hang up until told to do so.
- Ensure that a spotter has been sent to the facility entrance to guide outside response personnel to the emergency.

Professional emergency services responding to a call will usually assume responsibility for coordinating response measures, and will direct all rescue and medical duty assignments upon their arrival on-site. The facility manager or ERC should remain available to provide information to emergency responders.

Fire and Emergency Reporting Procedures

In the absence of fire alarms, go to the nearest telephone or notify your supervisor. There are Air Horns located throughout the facility – 3 long horn blasts indicates an emergency. As a last effort, notify others as you calmly leave the area. The supervisor or manager will assess the situation and call for emergency assistance. Ensure that a spotter has been sent to the facility entrance to direct fire and rescue services to the emergency location. All other employees are to evacuate the building/area of fire and proceed to the Rally Point. The professional fire fighters will handle the fire.

In the event of severe weather, tornado, etc., the facility manager or his/her designee will make the decision to move employees to the designated Severe Weather Shelter. At the time of this notification, all employees are required to evacuate to their assigned shelters - see Appendix B. Weather reports are monitored anytime bad weather is forecast via weather radios or the internet. In the event of high winds, be aware of flying debris and stay clear of downed power lines.

Other anticipated site-specific emergencies and corresponding response measures are described in Appendix C.

Management Responsibilities and Accountability:

The facility manager and designees are responsible for the following activities:

1. Immediately notify fire, EMS and police as needed in the event of an emergency affecting personnel or the facility.
2. Ensure that medical attention is given to any injured personnel.
3. Make decisions relating to evacuation and other response measures in the event of an emergency.
4. Notify your Manager/Director and Health and Safety rep via call or text within 15 minutes.
5. Ensure that an Incident Investigation is initiated as soon as feasible.
6. Ensure that all employees have received training on reporting fires and other emergencies, the location of fire exits and evacuation routes.
7. Ensure that fire/ER drills are conducted annually to acquaint employees with emergency procedures and evaluate plan effectiveness.
8. Ensure that designated employees are trained in the use of fire fighting and other emergency equipment and basic first aid techniques.
9. Maintain contact information for key response personnel in a safe place for immediate use in the event of an emergency.

Emergency Response Coordinator (ERC) Information

Facility Manager/ERC	Contact Info. W/H/C	Duties
Raymie Sowa III	W: (773) 382-0134 C: (773) 595-5532	Initiate/oversee evacuation; contact EMS; direct response measures; coordinate with RMG. Oversee investigation.
Alternate ERC Jose Pardo	W: (773) 382-0135 C: (312) 515-1072	Facilitate evacuation; conduct head counts; assist with response; contact EMS if needed; investigate incident
Alternate ERC (Tech) Leo Delgadillo		Facilitate evacuation; conduct head counts; assist with response; contact EMS if needed; investigate incident
Alternate / Safety ERC Nicholas Blachuciak	W: (773) 966-0673 C: (312) 273-0197	Facilitate evacuation; conduct head count; assist with response; contact EMS if needed; investigate incident

Training

Basic Emergency Response procedures must be simple, direct and carried out without confusion. All employees must understand notification procedures, how to get help, emergency equipment locations, escape routes and rally points, and tasks that may be required of them during an emergency. The success of this Plan is dependent on employee knowledge and

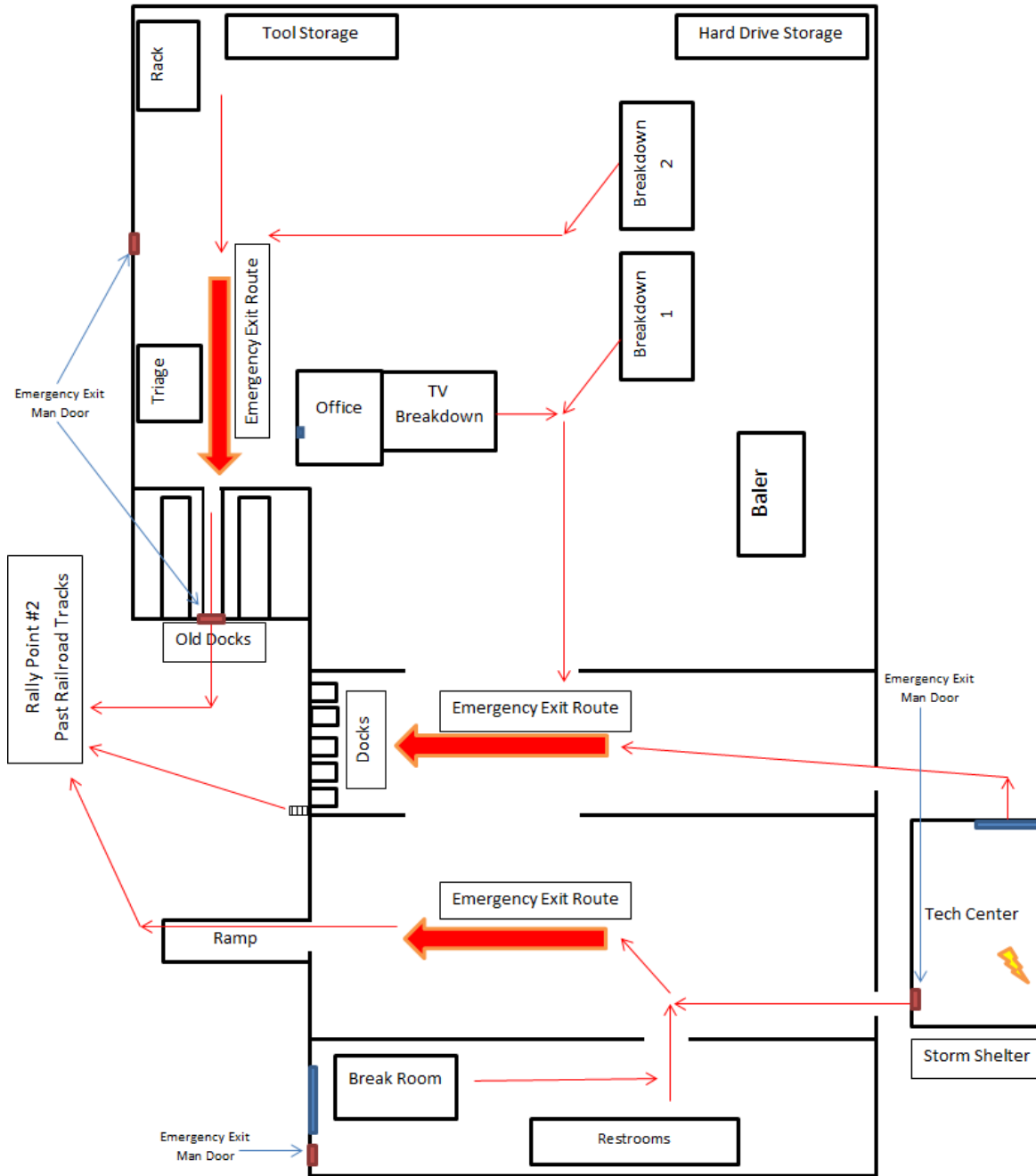
Printed copies are not controlled unless they are printed on yellow paper

actions. All employees will receive training at the time of hire, and annually. Unannounced drills are also conducted to measure training and response effectiveness.

This Plan will be reviewed and amended as conditions change or when drills or actual emergencies uncover discrepancies in the Plan.

Appendix A

Chicago Floor Plans/Maps & Emergency Evacuation Routes



Appendix B

Rally Points & Severe Weather Shelter(s)

Rally Point is located across the dock area in front of the NSW building. See Floor Plan/Evacuation Routes for exact locations.

Severe Weather Shelter is located in the Tech Center, Center Bay of Chicago Facility. (See Floor Plan/Evacuation Routes for exact locations)

Appendix C

Site-Specific Potential Emergencies And Response Measures

Appendix C

Emergency Response Procedures

Regency Technologies

Responsible Parties:

Facility Manager: Raymie Sowa III – Emergency Response Coordinator (ERC)

Supervisor: Jose Pardo – Alternate ERC

Tech Supervisor: Leo Delgadillo – Alternate ERC

Environmental Health and Safety Manager: Nicholas Blachuciak – Alternate ERC

Facility Communications:

- Communications via cell phone/verbal between supervision/management;
- Communications to employees and 3rd party/Trucks is then verbal;
- Three Long Blasts on Air Horn in office/warehouse indicates evacuation;

Rally Points:

- All Operations – All employees are to exit through the nearest Exit Door at South and/or East sides of building. Rally Point is located across the dock area in front of the NSW building.

Potential Emergencies:

- Fire in building
- Equipment catches fire
- Employee/person injured
- Explosion or sudden pressure release
- Chemical release from equipment or materials
- Mobile Equipment flips
- Severe weather: lightning, high winds, tornado, temp. extremes

General Procedures:

- Upon observing/becoming aware of a problem, immediately notify your supervisor or management.
- Manager/supervisor should immediately assess situation visually, from a safe (upwind/uphill) approach, in addition to info relayed from call.
- If serious fire or personal injury is involved, responding management personnel should immediately call 911 for emergency assistance.
- Notify guard at main gate and send a “Spotter” to main drive at to direct response personnel.
- If facility personnel are at risk, immediately initiate Evacuation and direct all employees to designated Rally Points.
- Secure area and ensure that all individuals are accounted for. Keep people upwind of situation.
- Notify office personnel and corporate Safety/Environmental Manager.
- Refer to RMT Facility Response Flow Chart for additional guidance – attached.

Specific Emergency Procedures:

Building Fire:

- If fire is observed, immediately notify manager/supervisor for assessment/ evacuate local personnel to Rally Point and conduct head count.
- If fire is uncontrolled, unconfined, or producing smoke – Initiate Alarm Measures, evacuate all personnel to Rally Point and conduct Head Count.
- If fire is incipient and local fire extinguishers can be use to suppress, attempt to extinguish. Do not actively attack fire or place self at risk.
- Send Spotter to gate/entrance and make other required notifications.

Equipment Fire:

- Immediately notify management.
- If operator is still in control of equipment, and it is safe to do so, attempt to quickly position equipment at least 25 feet away from any other structure; otherwise, immediately exit equipment.
- If Baler catches fire, shut unit off and attempt to extinguish from safe distance.
- If fire is small, management may attempt to extinguish without placing self at risk
- Do not re-board burning equipment – additional extinguishers are mounted in various areas throughout facility.
- Secure area and ensure all employees are accounted for.
- If needed, call Fire Dept. for assistance
- Send Spotter to gate/entrance and make other required notifications.

Personal Injury:

- Notify management immediately.
- Ensure that victim is not in immediate risk of additional injury.
- Ensure that you are not at risk by attempting to help/attend to victim.
- Secure area and assess victim and nature of injuries.
- Call 911 for emergency assistance if warranted – send Spotter.
- If corrosive chemical exposure is involved, immediately flush victim with copious amounts of water and neutralizing agent – remove contaminated clothing; avoid chemical exposures to responders.
- Address any potential blood borne pathogen exposures.
- Begin to conduct investigation.
- Make other required notifications.

Explosion/Sudden Pressure Release:

- Notify management, if warranted, evacuate all personnel to Rally Point and conduct head count.
- If there are injuries or missing personnel, follow personal injury procedures and immediately call 911 for assistance.

Printed copies are not controlled unless they are printed on yellow paper

- If no injuries or missing personnel, assess situation and conditions surrounding explosion/pressure relief – IF SAFE TO DO SO.
- Approach from upwind direction and attempt to determine nature and cause of incident.
- If hazardous conditions still exist, contact 911 for assistance.
- If incident has passed, no residual chemicals are present, and hazards no longer exist, conduct thorough investigation – make required notifications.

Chemical Release:

- Notify management and remove all personnel from immediate area.
- Secure area and keep personnel away from release.
- If material is known (oil from equipment, liquid toner etc.), follow spill response procedures; refer to SDS for additional procedures.
- If material is corrosive (damaged batteries, etc), establish remote containment with Floor-Dri, dirt or other containing media.
- For small spills of known corrosives, slowly neutralize contained material AFTER release has been stopped and employees accounted for.
- For Mercury Spills – remove all non-essential personnel from immediate area –use Mercury Spill Cleanup Kit for containment and collection of mercury spill in accordance with Spill Kit instructions – these spills generally contain less than 2 grams of mercury.
- If large or uncontrolled release, evacuate all personnel and contact Corporate SE Mgr., local emergency response spill contractor and Fire Dept. for assistance.
- If material is unknown, contact Corporate SE Mgr. for guidance, contact Fire Dept., HazMat and/or Emergency Response spill contractor if warranted.
- If personal injury or fire is involved, follow applicable procedures.
- Disposal of contained spill material shall be in accordance with State and Federal waste regulations – SE Mgr. will oversee characterization and disposal of spill materials.

Natural Gas Leaks:

- Notify management and remove all personnel from immediate area.
- Secure area and keep personnel away from release.
- Instruct maintenance to immediately shut off the gas at the main valve and any secondary valves if necessary.
- Evacuate the building following the fire evacuation procedures.
- Call 911 once evacuated from the building.
- Call Gas Company once evacuated from the building.

Electrical Power Outage:

- Notify management of power outage and affected areas.
- Hit emergency stop buttons on equipment and park mobile equipment in a safe area.
- If safe to do so, remain in area and await further instruction from management.
- Management should direct employees to a safe area where there is sufficient light, or direct employees to exit building and meet at designated rally point.

Printed copies are not controlled unless they are printed on yellow paper

- Management should conduct a head count to ensure all employees are accounted for.
- Management should call appropriate individuals to notify them of the power outage, additionally notification should be made to the power company.

Carbon Monoxide Exposure:

- If management believes there is a possibility that occupants have or could be exposed to CO they should evacuate the building immediately.
- Management should call 911 and notify them of the situation.
- Seek medical attention for those that need help, paying particular attention to those with respiratory ailments (e.g. asthma).
- Wait to re-enter the building until an all clear has been given and CO issue has been corrected.

Equipment Tips/Flips Over:

- Notify management and ensure that no personnel are injured.
- If there are victims, follow Injury Procedure.
- Secure area and ensure there are no ignition sources present.
- Dike or otherwise contain any spilled material.
- Investigate cause of tip – take pictures to document and support.
- Using standard methods and practices, attempt to upright equipment, only if it can be done so safely.
- Ensure there are no overhead lines or other conditions that could create additional problems.
- Seek outside assistance if warranted. Make required notifications.

SEVERE WEATHER: This is an indoor operation and severe weather does not normally affect operations.

Lightning and thunderstorms – these events typically pass through an area rather quickly.

- Contact management and stay in building until event passes – usually within 15-30 minutes.

Tornado:

- Immediately evacuate all personnel to the designated Severe Weather Shelter and conduct head count.
- Notify management and ensure that warning has been relayed to all other on-site operations. If possible, notify Corporate HSE rep.
- Wait for event to pass.

Severe Weather Shelters are located in the following areas:

1. Tech Center in Center Bay of Building

Temperature extremes – although these operations are primarily in buildings, there is a potential for hazardous temperature extremes (severe cold and excessive heat). These conditions should be monitored on a daily basis by all personnel. Employees are expected to come to work prepared to deal with daily conditions. Employees are trained in recognizing hazardous conditions and symptoms of heat/cold stress. Failing to address these conditions can lead to personal injury/ medical emergencies and should be monitored by all on a daily basis. This type of emergency is predictable and should not happen. If an individual does experience a temperature extreme-related injury, follow Injury Procedure – severe cases can be Life Threatening.

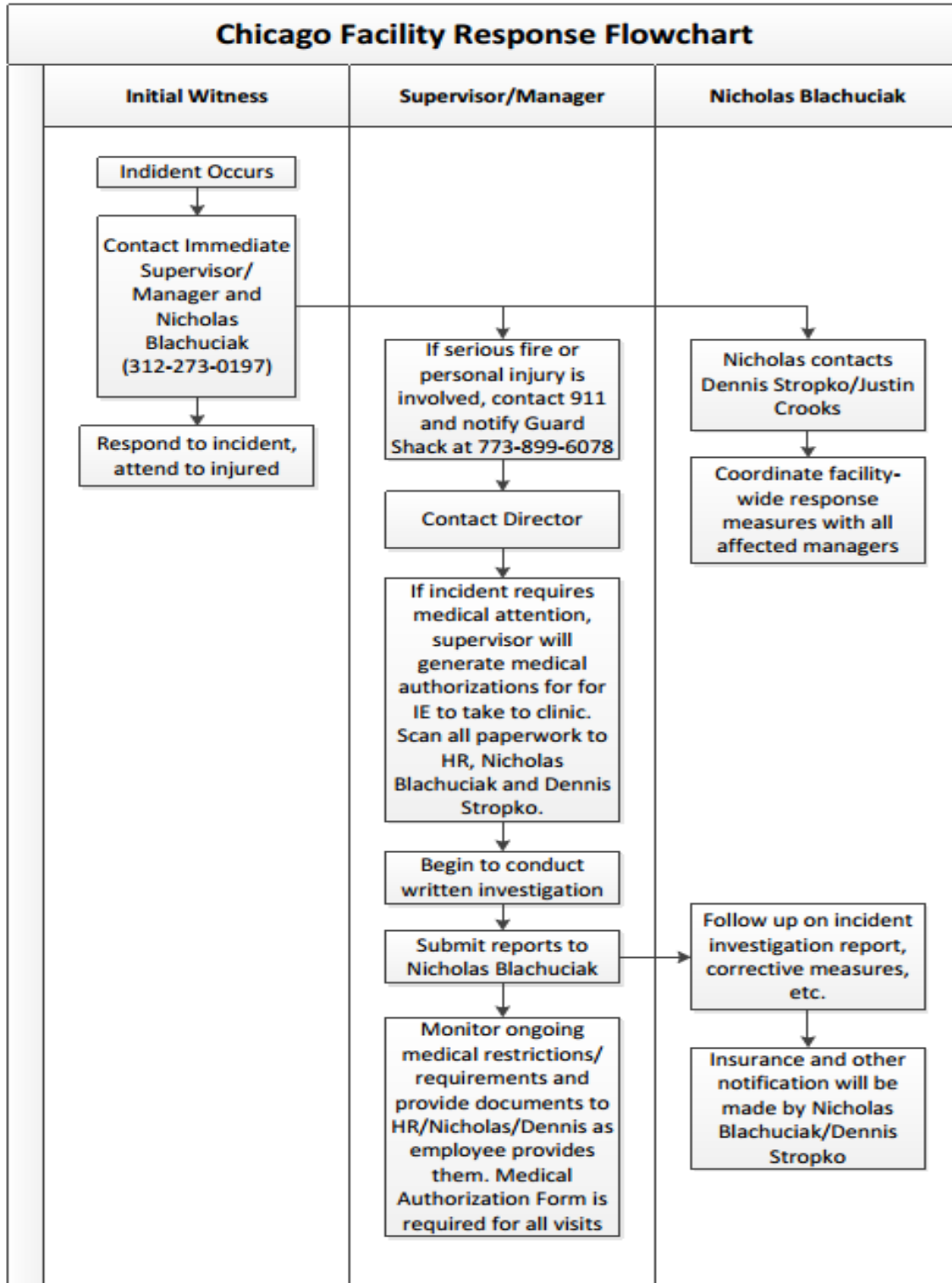
POST-EMERGENCY PROCEDURES:

After an emergency has occurred, and all conditions have stabilized, it is critical that a thorough and complete Incident Investigation be completed. This investigation should not only address the causes of the emergency, but should focus on the response and reaction times as well as effectiveness of response measures. Depending on the type and nature of an emergency, additional reporting requirements to various government agencies and insurance carriers may be required. Seek guidance and assistance from Corporate SE Manager. In addition to an Incident Investigation, it is necessary to generate the following information:

- An accurate and thorough account of all incurred physical property damages and losses (equipment, structures, property, environment),
- Photographs, drawings, etc. that document and portray the type, nature and degree of losses/damage.
- Detailed account of response/mitigation measures and associated costs.
- Costs associated with lost/damaged equipment and property.

These findings must be evaluated by management and lessons learned must be integrated into revised Emergency Response Procedures for potential future events. Training with all personnel covering the causes, investigation findings, and any procedural changes shall be conducted as warranted. These emergency response procedures be reviewed annually, and associated training will be then be conducted annually and/or after an even that triggers use of this Emergency Response Plan.

Incident/Emergency Notification Flow Chart Chicago Campus



Emergency Action and Fire Prevention Plan

*Napuck Salvage
of Waupaca, LLC*
11600 South Burley Avenue
Chicago, IL 60617

Table of Contents

Purpose and Scope of Plan

Fire Prevention Plan

Emergency Action Plan

Appendix A – Floor Plans/Maps/Evacuation Routes

Appendix B – Rally Locations and Severe Weather Shelter(s)

Appendix C – Site Specific Emergencies and Response Measures

PURPOSE and SCOPE

The purpose of this Plan is to establish written policies and procedures designed to minimize the negative impacts to our employees, business assets and the environment from fires and other emergency situations that could occur at this facility. This Plan has been developed in accordance with Occupational Safety and Health Act (OSHA) requirements as defined in 29 CFR 1910 Subpart E.

The first section of the Plan describes required practices and procedures for all employees in the area of fire prevention. If we can prevent or minimize conditions that produce undesirable fires from starting, we greatly reduce the potential for injury or loss of life and property.

The second section of the Plan describes measures we will take in the event of a reasonably anticipated emergency situation to protect our employees, property and the environment from further damage or loss. These situations may include fires and explosions, hazardous chemical releases, severe weather conditions, and personal injury. The success of this Plan is dependent on the ability of all employees to recognize situations that could lead to an emergency, actual emergencies, and critical response measures including immediate notification and evacuation procedures.

In the event of an emergency, management and employees must know what to do. Some emergency situations will warrant total and immediate evacuation of all employees. In other emergencies, a partial evacuation of nonessential employees, with defensive measures by other employees may be necessary for continued plant operations. In some cases, only those employees in the immediate area of an emergency may be expected to evacuate or move to safe areas. All employees must know what is expected of them in these anticipated emergency situations in order to assure their own safety as well as the safety of others.

Fire Prevention Plan

Undesirable fires are preventable and avoidable – yet they occur every day. And the catastrophic results – loss of life and property – are simply unacceptable. For a fire to occur, certain and predictable conditions must be met. But how many of us are aware of these conditions, and what we can do to eliminate them?

It is the Policy of Napuck Salvage of Waupaca, LLC, to conduct our business in a manner consistent with this Plan, and to take all reasonable measures necessary to ensure the safety of our employees, minimize potential environmental impacts, and protect the physical assets of our business in the event of a fire. This is accomplished through a program of established work practices, acceptable facility conditions, employee training and drills, and adherence to this Plan in the event of an undesirable fire.

The purpose of this Fire Prevention Plan is to:

- identify conditions and practices that can result in a fire at this facility;
- enhance the awareness of all employees regarding conditions and practices that can lead to a fire;
- ensure that established practices and procedures are followed to minimize or eliminate situations that can lead to an undesirable fire; and
- establish emergency procedures designed to prevent loss of life and limit property damage and environmental impacts in the event of a fire.

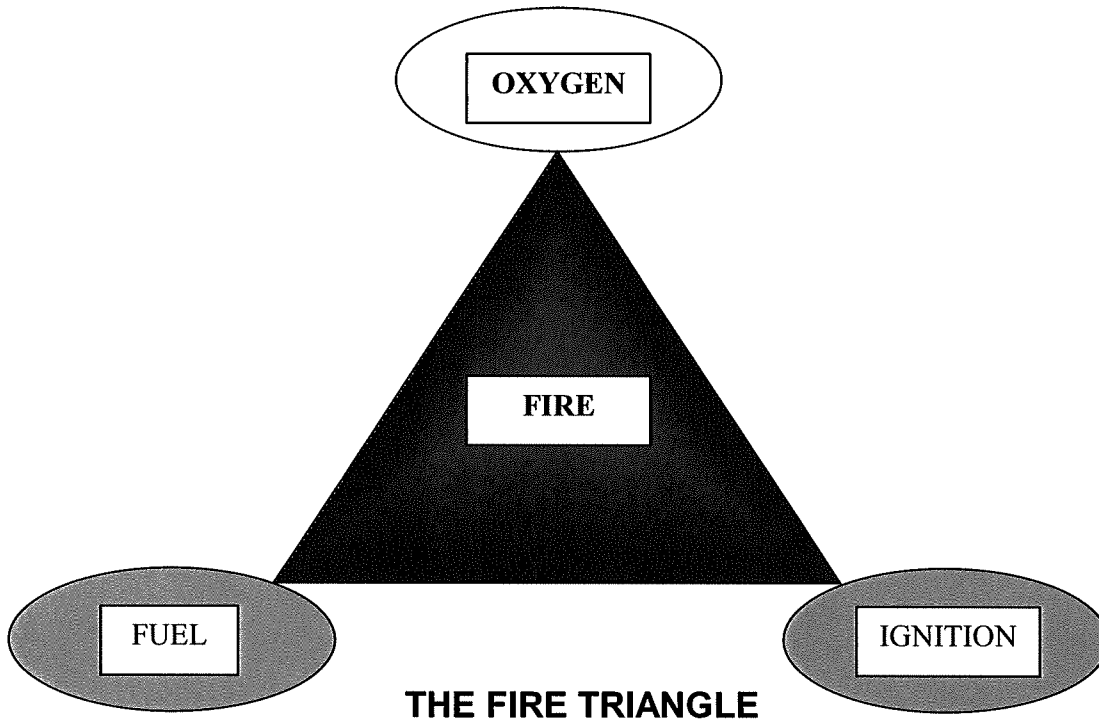
Fires can develop quickly, and a building structure or work area can become fully involved in a matter of minutes, if not seconds. It is not the intent of this Plan to direct employees to aggressively attack or fight a fire – we are not a Fire Brigade. Rather, the procedures described in this Plan are intended to minimize conditions leading to a fire, and guide employees in defensive tactics to remove themselves from harm, and reduce damage and loss to facility assets.

General facts about fire:

- No facility or structure is absolutely fireproof.
- Fire, flame, heat, smoke and toxic gases will spread through a building both vertically and horizontally.
- The spread of heat, smoke, and toxic gases is probably the greatest single danger to life – smoke and toxic gases are responsible for 75% of fire deaths in buildings.
- Early on-site detection of a fire is essential – there are usually only a few minutes between the beginning of combustion and the development of a fully involved destructive fire.
- What happens (or doesn't happen) in the first few minutes of a fire pretty well determines if the fire can be controlled or not.
- People and their actions are key elements – over half of all fires are the result of human element problems – lack of awareness or response.

Fire Prevention

In general, for a fire to occur, three conditions must be present – OXYGEN, a FUEL SOURCE and an IGNITION SOURCE. When these three conditions are met, we have established “THE FIRE TRIANGLE”.



Basically, when all three ingredients are present in sufficient quantity, a chemical reaction takes place, energy is released, and a fire occurs. The whole concept of fire prevention revolves around controlling or eliminating one or more of these ingredients so that the Fire Triangle cannot be completed or sustained – and fire cannot occur.

OXYGEN: Oxygen is present in the atmosphere at approximately 20.8%. Under normal conditions, there isn't much we can do about that – oxygen is present and one third of the fire triangle is satisfied. Depending on the fuel source, combustion can be supported with oxygen concentrations as low as 12-14%. As oxygen concentrations increase to levels above 23.5%, materials not normally prone to rapid combustion become ready fuel sources – like hair and clothing. A good rule of thumb: ***the more oxygen that is present, the more aggressively and rapidly a fire will burn.*** That's why blowing on a campfire helps get it going better – and using compressed oxygen to blow dust off yourself is a BAD idea. One last point about oxygen – there is a group of chemicals known as Oxidizers. These are substances that yield oxygen readily to stimulate the combustion of certain other substances. They are bad actors in that their presence increases the potential for a fire – they actively supply oxygen and enhance the chemical reaction necessary to support the combustion process.

FUEL SOURCES: Most anything can become a fuel under the right conditions – sufficient/excessive oxygen and/or a strong enough ignition/heat source. There is a huge range for fire potential when discussing fuel sources. Key ingredients for a good fuel source are the hydrogen and carbon content, as well as oxygen, nitrogen and sulfur. For this reason, organic compounds like oils, hydrocarbons, alcohols and coal tars naturally present a greater fire hazard – they are rich in carbon and hydrogen. Organic liquids and gases present an even greater potential as the nature of liquids, vapors and gases offers an elevated opportunity for supplying fuel – evaporation and available surface area increase the interaction with oxygen, and thus enhances the potential for fire. Everyday items like paper and cardboard, oily rags, wood, and the many chemicals that surround us are ready sources of fuel if introduced to the Fire Triangle.

IGNITION SOURCES: Ignition sources are things that provide sufficient heat or energy to initiate the chemical reaction we call combustion. Open flames, electricity and electric arcs, sparks, sufficiently hot surfaces, static buildup, and certain chemical reactions are all good examples of ignition sources. When the other two components of the Fire Triangle are satisfied, the Ignition Source becomes the catalyst that initiates the combustion process.

FIRE PREVENTION AND CONTROL: Fire prevention focuses on managing conditions and practices to ensure that the three components of the Fire Triangle do not exist together. Fire control involves removing one of the three components after a fire has occurred. It is much **easier to manage and control** the three components of the Fire Triangle **before** they meet, rather than to **separate** them **after** a fire has started.

One of the first rules of fire prevention is good housekeeping. By controlling the buildup and accumulation of fuel sources like paper, cardboard and chemicals, we significantly reduce the potential for a fire. **NO FUEL = NO FIRE.** Not only can good housekeeping prevent a fire from starting, good housekeeping can:

- 1) Make evacuation and rescue efforts easier.
- 2) Help prevent the spread of a fire.
- 3) Make fighting a fire an easier and safer task.

Some specific housekeeping rules that directly impact fire prevention are:

- Flammable and Combustible liquids must be stored and covered in approved containers, away from potential ignition sources;
- All chemical spills must be cleaned up immediately;
- Cleanup materials and damaged containers must be properly managed;
- Combustible materials and trash must not be allowed to accumulate, and must be stored away from potential ignition sources;
- Routine cleanup of accumulated debris and dust on floors and around equipment, exhaust systems and electrical units to reduce fuel sources;
- Aisle ways must be kept free of clutter and trash;
- Fire exits must never be blocked.

Major Fire Hazards: There are some basic conditions and hazards present in most industrial settings. The following are common types of hazards and conditions that could result in an undesirable fire at this facility:

1. Electrical equipment is the number one cause of workplace fires. Electrical fires are the result of:
 - Overloaded fuses, circuits, motors, or outlets;
 - Wiring with frayed or worn insulation;
 - Loose ground connections;
 - Lights or machinery coming in contact with combustible materials.
2. Flammable liquids like gasoline, kerosene, solvents, and many chemicals present a fire hazard mainly because of their vapors. When these flammable vapors concentrate, and come in contact with an ignition source, you have a fire and possibly an explosion.
3. Smoking is another cause of fire. Lit cigarettes or matches can easily ignite many things capable of burning, like wood, paper or flammable liquids.
4. Space heaters are another fire source usually due to improper use and close proximity to combustible materials.
5. Welding and cutting operations are a fire hazard because of the flames and sparks (ignition sources) they create.
6. Spontaneous combustion – the slow buildup of heat in combustible materials like oily rags, which eventually erupts into fire.
7. Chemicals that are not a major fire hazard alone may become one when mixed with an incompatible substance such as: air; water; heat; or other chemicals. This is known as reactivity.
8. Exposure from adjoining buildings or neighbors – you may be doing all the right things, but your upwind neighbor just lit a REALLY BIG barbecue.
9. Static buildup and discharge, mainly during flammable liquid transfer.
10. Additional fire hazards associated with this operation are identified in Appendix C of this Plan.

Hazard Control and Minimization: Each of us has the opportunity to protect ourselves and our co-workers from fires by using caution and common sense to avoid conditions that could cause a fire. These common sense principals work at home as well:

1. Electrical equipment and wiring;
 - Never use wiring with insulation that is frayed or worn – replace it.
 - Keep electrical boxes and motor control centers closed at all times.
 - Check that ground connections are sound as this keeps electricity confined to a safe path.
 - Don't overload fuses, circuits, motors, or outlets.
 - Use the correct fuse for the job.
 - Avoid using temporary wiring and minimize extension cords.
2. Do not store items/material near lights or machinery.
3. Watch for over-heated transmission shafts or bearings, especially if in an area with dust, lint or grease which could burn.
4. Flammable/Combustible liquids:
 - Check MSDS to determine if a liquid is flammable before you use it.
 - Only use flammable liquids in well ventilated areas.
 - Avoid using near heat, fire, cigarettes, sparking tools, or anything that could produce an ignition source.
 - Store flammable liquids in approved containers, away from ignition sources.
 - Use bonding and grounding when transferring flammable liquids.
 - Keep containers closed when not in use.
 - Clean up leaks and spills immediately.
 - Don't ignore odors that indicate the presence of chemical vapors.
5. Smoking:
 - This is the easiest ignition source to prevent - restrict smoking to authorized areas and use ashtrays. Obey "No Smoking" signs.
 - Use common sense and don't smoke in areas where something flammable could ignite – like while pumping gasoline.
 - Extinguish matches and cigarettes carefully and properly.
6. Space heaters should only be used when absolutely necessary, with these fire prevention precautions:
 - Use only in well-ventilated areas.
 - Use only the fuel specified for that heater.
 - Position heater away from all combustible materials.

7. Welding, cutting and brazing: These activities naturally generate heat, flames, and sparks.
 - Whenever possible, conduct these operations in a separate room with a fire-resistant floor, or a clean dry wood floor covered with material that won't burn – wetting surfaces down first will also help.
 - Use a welding screen around the operation.
 - Keep welding and cutting operations as far away as possible from flammable liquids, vapors, dusts, and combustible materials.
 - Before welding or cutting on tanks, pipes and other containers, identify prior contents, verify that residual vapors are not present.
 - Use the Hot Work Permit System, including pre-job assessment, control of fuel sources, readily available extinguishing equipment, and a fire watch during and after the project.

8. Spontaneous Combustion is a slow buildup of heat that creates a fire. It occurs often when an accumulation of rags and waste has been saturated with flammable or oily materials.
 - Dispose of flammable/oily waste in closed, airtight metal containers, and empty the containers daily.
 - Keep flammable waste that cannot be put in containers in a cool, dry, well-ventilated area, and dispose of frequently.

9. Practice GOOD HOUSEKEEPING – many of the conditions that result in fires are due to poor housekeeping – a place for everything and everything in its place.

Firefighting Control Measures: Most firefighting is best left to the professionals - the local fire department. Our purpose here is to provide information to help get you out of a bad situation, not to aggressively attack a fire. Firefighting techniques vary depending on type of fire, fuel source, stage of the fire, available extinguishing materials, air flow, and so on. However, the basic principal of removing/eliminating one or more of the three components of the Fire Triangle is critical to extinguishing a fire.

OXYGEN: By removing oxygen, you suffocate or smother the fire. Sand, dirt, wet blankets or inert gases will starve many fires of oxygen and suppress the fire. Foams and other chemicals are also used to smother flammable liquids and vapors by isolating the fuel source from needed oxygen. Put a lit candle in a jar and cover it – the candle will extinguish in a matter of seconds.

FUEL SOURCES: By physically removing the fuel source, you eliminate the fire. However, this is difficult, dangerous and usually not practical.

IGNITION SOURCES: Once a fire has developed, ignition sources don't really matter. But, by removing heat through cooling, the energy needed to support the chemical reaction is no longer available – water is the most common coolant.

Fire Suppression Equipment: Portable fire extinguishers are available throughout the facility for escape purposes and/or for incipient and smoldering stage fires. All employees should have an understanding of the type of fire extinguisher to use for a certain type of fire. Not all fire extinguishers can put out all types of fires. In fact, using the wrong fire extinguisher on some fires can actually spread the fire. All fire extinguishers are identified by type of fire they will put out, as noted below:

Types of Fires and Corresponding Fire Extinguishers:

Class A: Class A extinguishers are used to put out fires involving ordinary burnables like wood, paper, rags, cloth, or trash, when you want to wet down and cool the area. The extinguishers themselves may use water, water base foam, loaded steam, or a multipurpose dry chemical to put out the fire.

Class B: Class B extinguishers are used to put out fires involving gases or flammable liquids such as oil, gasoline, paints, solvents, and grease. The extinguishers may use carbon dioxide, foam, or dry chemicals to put out the fire either by cutting off oxygen or reducing flame.

Class C: Class C extinguishers are used for fires involving or surrounding electrical equipment fires. The extinguishers usually use carbon dioxide or a dry chemical to put out fires. **Note:** Never use water on an electrical fire. Water conducts electricity and using it on an electrical fire could mean a dangerous shock for the person operating the extinguisher.

Combination ABC or BC: Combination ABC or BC extinguishers are used when a fire combines one or more of the three types of fires we have described.

Class D: Class D extinguishers are used for fires in combustible metals including sodium, magnesium, zinc, potassium, powdered aluminum, and titanium.

All employees should have an understanding of proper fire extinguisher use and the various types of extinguishers. Most importantly, people are not replaceable - buildings and equipment are. If a fire cannot be easily controlled by existing fire extinguishers, alert others, leave the area and call for professional assistance. The primary use of fire extinguishers is for escape purposes.

Fire Extinguisher Use: By remembering the simple acronym “**PASS**”, you can use most any fire extinguisher effectively:

P = Pull the pin on the handle of the extinguisher;

A = Aim the nozzle at the base of the fire;

S = Squeeze the handle to begin discharging the contents of the extinguisher;

S = Sweep nozzle across the base of the fire to distribute extinguishing agent.

First Aid

If you are involved in a fire, you may have to administer first aid until medical help arrives. Here are some recommendations:

- If clothing catches fire, **STOP**, **DROP** to the floor or ground, and **ROLL** to smother the flames – this isn't as easy as it sounds – people panic.
- If someone has inhaled smoke, get the person to fresh air immediately. If they're not breathing and you know CPR, administer it. Otherwise, get someone who can.
- If someone is on fire, wrap the person in a blanket, coat or other preferably wet material that can help smother the flames.
- If someone has been burned, cut away any loose clothing, but don't remove clothing that is stuck to a burn.
- Put cool water on burns, and then if possible, cover them with a moist sterile dressing. If the arms or legs have been burned, elevate them.

And, whatever you do, notify others and get medical attention for any victims.

Specific emergency situations and corresponding response measures for Napuck Salvage are described in the following section – Emergency Action Plan.

SUMMARY: The old adage *“An ounce of Prevention is worth a pound of Cure”* certainly holds true in the area of fire prevention. By adhering to the following basic procedures, we will go a long way towards avoiding a fire – at work or at home:

- Practice Good Housekeeping – clean up your work area daily, put things away, and don't allow material and debris to accumulate.
- Routinely inspect equipment and electrical items for damage, wear and buildup of dirt, grease, and other possible fuel sources.
- Routinely perform preventive maintenance – well greased equipment doesn't wear as fast and doesn't generate excessive heat.
- Don't store items near or around electrical equipment, lights, heaters, etc.
- Respect all chemicals you work with or around – follow all handling and storage requirements, keep containers closed, clean up spills promptly.
- Watch for and control/eliminate possible ignition sources.
- Routinely inspect and maintain emergency equipment.
- Always ensure a safe means of escape from your work area.
- **PAY ATTENTION!!!** Be aware of conditions that will produce or support the Fire Triangle.
- Avoid conditions that can lead to fires – and you won't have fires.

Emergency Action Plan

This Emergency Action Plan (EAP) has been developed to ensure employee safety in the event of a fire or other emergency. It establishes notification procedures, describes emergency evacuation and accountability procedures, and identifies potential site-specific emergencies and response measures.

Fires, severe weather, chemical releases, and personal injury are all situations that would constitute an emergency, and will require some level of emergency response including possible evacuation of the facility. Additionally, any of these events may require the need for outside emergency responders. It is critical to establish basic procedures during NON-EMERGENCY times, when we are calm and thinking clearly – and then trust and follow those procedures during an actual emergency, when we may be panicked and disoriented or confused.

Our primary objective is the safety of all employees. To ensure employee and visitor safety, our plan is designed to get personnel away from danger, account for all employees and visitors, and treat injuries. If safe to do so, we will also attempt to take defensive measures designed to minimize potential impacts to the environment and limit business losses.

There are two old sayings that apply to emergencies:

- **Murphy's Law:** Whatever can go wrong, will go wrong.
- **Boy Scout Slogan:** Be prepared.

In most emergencies, the employee's role is limited. One of the keys to handling these situations is to turn them over to people who have received special training and who have the proper equipment for the job. But even if you are not part of an emergency response crew, you still have two important roles to play:

- Quickly and safely get yourself away from the hazard or danger.
- Immediately notify others;

Accidents can and do happen. It is critical that all employees are familiar with the procedures to follow in an emergency. In a real emergency, there is no time to think – if you want to survive, you have to act quickly and correctly. The following is a guide for employees to follow in the event of an emergency. A facility floor plan, evacuation routes, and RALLY POINTS are posted at the facility and attached – Appendices A and B. There is also a list of anticipated emergencies and response measures for this facility – Appendix C. All employees are required to become familiar with evacuation routes and are encouraged to familiarize themselves with the various types of emergencies and appropriate response measures for this site. All employees are required to follow the minimum response procedures, including notification and evacuation.

Emergency Evacuation Procedures and Escape Routes

In the event an emergency alarm is sounded, or you become aware of an emergency, take the following steps:

- **STAY CALM AND DON'T PANIC!!!**
- As you are leaving, shut off equipment and close doors if safe to do so.
- Proceed to the nearest available and safe exit and leave the building as quickly as possible. Go to your designated RALLY POINT and wait.
- If others are in your immediate surroundings (employees or customers), direct them to come with you.
- If you observe an emergency situation unfolding – IMMEDIATELY notify your supervisor and initiate any alarm procedures.
- Floor plans showing the emergency escape routes have been developed and are posted in various areas of the facility – BECOME FAMILIAR with these routes and their proximity to your work area – Appendix A.
- Stairwells are the primary means for evacuation, and elevators should only be used by fire/EMT, or to assist physically handicapped personnel.
- Once at the Rally Point, don't wander around or leave the area. We must be able to account for all employees. Assist with the head count if able.
- Employees must not re-enter a building/area until an ALL-CLEAR has been issued by the Manager or Emergency Response Coordinator (ERC).

Critical Plant Operations Procedures

There are no critical office or yard operations that must be maintained during an evacuation. However, there may be situations where designated response personnel will remain within the facility to perform emergency response measures for which they are trained, provided they can perform these duties in a safe manner. At no time will any employee put him/herself at unnecessary risk.

Employee Head Count Procedures

The Facility Manager or the designated ERC will conduct head counts once evacuation has been completed. Before evacuating the facility, designated employees will check offices, rooms and other enclosed spaces in the workplace for employees who may be trapped or otherwise unable to evacuate the building. Under no circumstances should any employee enter an unsafe area or condition.

Rescue and Medical Duties

In the event of a serious accident or injury, the need for professional medical assistance may be necessary. Emergency Phone Numbers are posted at each phone. The decision to request outside emergency assistance (fire, police, EMS) shall be made by the Facility Manager or designated ERC. Until professional

assistance arrives, provide any medical assistance you are trained and qualified to perform. In general, don't move an injured person.

Outside Notification Procedures: Emergency Phone Numbers are posted at all telephones. In general, the decision to summon outside help will be made by the Facility Manager, ERC or supervisor. However, in the event that you need assistance from emergency services (Fire, EMS, Ambulance/Rescue, Police), do the following:

- Remain calm;
- If possible, use a land line rather than a cell phone;
- Speak clearly and slowly;
- Give the exact location of the emergency;
- Describe the situation with as much detail as possible – type and nature of emergency, victims, any chemical information, etc.;
- Give the phone number and address from where you are calling;
- Do not hang up until told to do so.
- Ensure that a spotter has been sent to the facility entrance to guide outside response personnel to the emergency.

Professional emergency services responding to a call will usually assume responsibility for coordinating response measures, and will direct all rescue and medical duty assignments upon their arrival on-site. The facility manager or ERC should remain available to provide information to emergency responders.

Fire and Emergency Reporting Procedures

In the event of a fire, go to the nearest fire alarm and activate the alarm by pulling the lever. The alarm will notify other facility personnel and the local fire department/emergency response team. In the absence of fire alarms, go to the nearest telephone, two-way radio, CB or walkie-talkie and notify your supervisor. As a last effort, yell as you calmly leave the area. The supervisor or manager will assess the situation and call for emergency assistance. Emergency telephone numbers are posted at all phones. Ensure that a spotter has been sent to the facility entrance to direct fire and rescue services to the emergency location. All other employees are to evacuate the building/area of fire and proceed to the Rally Point. The professional fire fighters will handle the fire.

In the event of severe weather, tornado, etc., the facility manager or his/her designee will make the decision to move employees to the designated Severe Weather Shelter. At the time of this notification, all employees are required to evacuate to their assigned shelters - see Appendix B. Weather reports are monitored anytime bad weather is forecast via weather radios or the internet. In the event of high winds, be aware of flying debris and stay clear of downed power lines.

Other anticipated site-specific emergencies and corresponding response measures are described in Appendix C.

Management Responsibilities and Accountability:

The facility manager and designees are responsible for the following activities:

1. Immediately notify fire, EMS and police as needed in the event of an emergency affecting personnel or the facility.
2. Ensure that medical attention is given to any injured personnel.
3. Make decisions relating to evacuation and other response measures in the event of an emergency.
4. As soon as practical, notify RMG Directors and Health and Safety Mgr.
5. Ensure that an Incident Investigation is initiated as soon as feasible.
6. Ensure that all employees have received training on reporting fires and other emergencies, the location of fire exits and evacuation routes.
7. Ensure that fire/ER drills are conducted annually to acquaint employees with emergency procedures and evaluate plan effectiveness.
8. Ensure that designated employees are trained in the use of fire fighting and other emergency equipment and basic first aid techniques.
9. Maintain contact information for key response personnel in a safe place for immediate use in the event of an emergency.

Emergency Response Coordinator (ERC) Information

ERC/Area	Contact Info. W/H/C	Duties
Ron Trivisonno/Crusher	W: 773-382-0118 C: 773-842-0894	Initiate/oversee evacuation; contact EMS; direct response measures; coordinate with SCPM. Oversee investigation.
Silvestre Cortez/Block Breaker	C: 773-726-4163	Initiate/oversee evacuation; contact EMS; direct response measures; coordinate with SCPM. Oversee investigation.
Dimitri Henley/Media Plant	W: 773-530-2404 C: 773-726-4223	Initiate/oversee evacuation; contact EMS; direct response measures; coordinate with SCPM. Oversee investigation.
Nicholas Blachuciak/Safety Manager	W: 773-966-0673 O: 312-273-0197	Facilitate evacuation; conduct head count; assist with response; contact EMS if needed; investigate incident

Training

Basic Emergency Response procedures must be simple, direct and carried out without confusion. All employees must understand notification procedures, how to get help, emergency equipment locations, escape routes and rally points, and tasks that may be required of them during an emergency. The success of this

Plan is dependent on employee knowledge and actions. All employees will receive training at the time of hire, and annually. Unannounced drills are also conducted to measure training and response effectiveness.

This Plan will be reviewed and amended as conditions change or when drills or actual emergencies uncover discrepancies in the Plan.

Appendix A

Floor Plans/Maps & Emergency Evacuation Routes

***Napuck Salvage
of Waupaca, LLC***

11600 South Burley Avenue
Chicago, IL 60617
773-721-8740

Appendix B

Rally Points & Severe Weather Shelter(s)

***Napuck Salvage
of Waupaca, LLC***

11600 South Burley Avenue
Chicago, IL 60617
773-721-8740

Appendix C

Site-Specific Potential Emergencies And Response Measures

Appendix C

Emergency Response Procedures

Napuck Salvage of Waupaca, LLC

COVERED ACTIVITIES/AREAS INCLUDE:

BLOCK BREAKER: Aluminum Cast Breaking, Sorting, Torching, Cast Washing.

CRUSHER: Crushing of Assorted Aluminum Cast and White Goods; Material Transfer and Staging.

MEDIA PLANT: Aluminum/Zorba Sizing

Responsible Parties:

Crusher Manager: Ron Trivisonno – Emergency Response Coordinator (ERC)

Block Breaker Manager: Silvestre Cortez – ERC

Media Plant Manager: Dimitri Henley – ERC

Nicholas Blachuciak: Facility HSE Manager/Alternate ERC

Facility Communications:

- Communications via radio between supervision/management and crane/loader operators;
- Communications to laborers/3rd party/Trucks is then verbal

Rally Points:

- **Block Breaker** – Employee parking lot at east end of Crusher building;
- **Crusher** – Employee parking lot at east end of Crusher building.
- **Media Plant** – Employee parking lot at east end of Crusher building.

Potential Emergencies:

Building Fire

Scrap or residue pile catches fire

Equipment catches fire

Employee/person injured

Explosion or sudden pressure release

Problem with torching equipment/leaking hose or cylinder damage

Chemical release from equipment or cast washing operation

Truck/crane/loader flips

Air emissions (smoke, chemical, etc.) from off-site affect area

Severe weather: lightning, high winds, tornado, temp. extremes

General Procedures:

- Upon observing/becoming aware of a problem, immediately notify management.
- Manager/supervisor should immediately assess situation visually, from a safe (upwind/uphill) approach, in addition to info relayed from call.
- If serious fire or personal injury is involved, responding management personnel should immediately call 911 for emergency assistance.
- Dispatch a "Spotter" to main drive at S. Burley and 116th Street to direct response personnel.
- If facility personnel are at risk, immediately initiate Evacuation and direct all employees to designated Rally Points.
- Secure area and ensure that all individuals are accounted for. Keep people upwind of situation.
- Notify RMT security gate, and corporate HSE.

Specific Emergency Procedures:

Building Fire:

- If fire is observed, immediately notify manager/supervisor for assessment/evacuate local personnel to Rally Point and conduct head count.
- If fire is large, unconfined, or producing smoke, evacuate all personnel to Rally Point and conduct head count; contact local Fire Dept for assistance.
- If fire is incipient and local fire extinguishers can be use to suppress, attempt to extinguish – Do not actively attack fire or place self at risk.
- Send Spotter to entrance; notify RMT Security Gate and Corporate HSE.

Scrap or Residue Pile Fire:

- Remove all personnel and equipment (if safe to do so) from area and conduct a head count.
- If fire is small, attempt to separate material from rest of pile with loader – DO NOT PLACE SELF OR EQUIPMENT AT RISK – attempt to create remote fire break and reduce fuel source.
- If fire is large, contact local Fire Dept. for emergency assistance – smoke from burning plastic can be noxious/toxic.
- Send Spotter to main entrance
- Secure area and keep personnel upwind of incident.
- Make appropriate notifications to RMT Security gate and corporate HSE.

Equipment On Fire:

- Immediately notify management.
- If operator is still in control of equipment, and it is safe to do so, attempt to quickly position equipment outside and at least 25 feet from any other structure; otherwise, immediately exit equipment.

- If fire is small, attempt to extinguish without placing self at risk – do not re-board burning equipment – additional extinguishers available on other equipment and mounted in various areas.
- Secure area and ensure all employees are accounted for.
- If needed, call local Fire Dept. for assistance, send Spotter to entrance.
- Create remote dirt/FloorDri containment berm/dike if necessary to minimize off-site migration of oils/contaminated runoff from fire water.
- Make appropriate notifications to RMT Security gate and corporate HSE.

Personal Injury:

- Notify management immediately.
- Ensure that victim is not in immediate risk of additional injury.
- Ensure that you are not at risk by attempting to help/attend to victim.
- Secure area and assess victim and nature of injuries.
- Call 911 for emergency assistance if warranted – send Spotter.
- If corrosive chemical exposure is involved, immediately flush victim with copious amounts of water and neutralizing agent – remove contaminated clothing; avoid chemical exposures to responders.
- Address any potential blood borne pathogen exposures.
- Begin to conduct investigation.
- Make appropriate notifications to RMT Security gate and corporate HSE.

Explosion/Sudden Pressure Release:

- Notify management, if warranted, evacuate all personnel to Rally Point and conduct head count.
- If explosion is at Williams Crusher and fire results, activate Water Deluge System on crusher; run belts out to clear fire/fuel from system.
- If there are injuries or missing personnel, follow personal injury procedures and immediately call 911 for assistance.
- If no injuries or missing personnel, assess situation and conditions surrounding explosion/pressure relief – IF SAFE TO DO SO.
- Approach from upwind direction and attempt to determine nature and cause of incident.
- IF hazardous conditions still exist, contact 911 for assistance.
- If incident has passed, no residual chemicals are present, and hazards no longer exist, conduct thorough investigation – notify corporate HSE.

Leaking Welding/Cutting/Torching Equipment:

- Under normal circumstances, this situation should not constitute an emergency. Routine monitoring of all associated equipment will minimize the potential for catastrophic incident.
- Upon discovering a leak, immediately extinguish torch and close supply valves at oxy/fuel source (cylinder or tank).
- Notify management of situation and severity.
- Follow LOTO procedure for repair to hose or torch.

- If a problem exists with a tank or cylinder, immediately contact supplier for assistance. **DO NOT ATTEMPT TO REPAIR OR OTHERWISE WORK ON A LEAKING TANK OR CYLINDER.**

Chemical Release:

- Notify management and remove all personnel from immediate area.
- Secure area and keep personnel upwind/uphill from release.
- If material is known (oil from equipment, etc), follow spill response procedures.
- If material is corrosive, establish remote containment with FloorDri, dirt or other containing media. For small spills, slowly neutralize contained material AFTER release has been stopped and employees accounted for.
- If large or uncontrolled release, evacuate local personnel and contact corporate HSE, local emergency response spill contractor and/or local Fire Dept/HazMat for assistance.
- If material is unknown, contact corporate HSE for guidance, contact local FD/HazMat and/or Emergency Response spill contractor if warranted.
- If personal injury or fire is involved, follow applicable procedures.

Equipment Tips/Flips Over:

- Notify management and ensure that no personnel are injured.
- If there are victims, follow Injury Procedure.
- Secure area and ensure there are no ignition sources present.
- Dike or otherwise contain any spilled material.
- Investigate cause of tip – take pictures to document and support.
- Using standard methods and practices, attempt to upright equipment, only if it can be done so safely. Ensure there are no overhead lines or other conditions that could create additional problems.
- Seek outside assistance if warranted. Notify corporate HSE.

Off-Site Emissions:

- In the event that an airborne noxious or otherwise hazardous emission source migrates towards/onto this facility, immediately notify RMT management as other personnel/operations could also be at risk.
- Evacuate employees to front of building near Rally Point and conduct head count.
- If plume is approaching, move sidewind and upwind from the plume.
- If possible, stay inside building until plume has passed.
- If injuries occur, follow Injury Procedures.
- Notify Corporate HSE and local Fire Dept/HazMat for assistance.

SEVERE WEATHER: The Facility can monitor weather conditions via the internet. During periods when severe weather is imminent, facility personnel will monitor local weather conditions in real time and respond accordingly. Most operations are indoors and inclement weather does not impact operations. However, high winds and/or tornadoes could place employees at risk.

Lightning and thunderstorms – these events typically pass through an area rather quickly.

- Contact management and seek shelter until event passes – usually within 15-30 minutes.
- If outdoors in a crane, exit crane if still safe to do so, if lightning is imminent, stay in crane and avoid using any electronic devices or contacting metal surfaces, wait for lightning to pass.

High winds – high winds can create hazardous conditions due to excessive dust, the possibility of small and often sharp material becoming airborne, and loss of control of equipment (crane booms). This condition should be assessed by management with input from local weather forecast.

- If winds are excessive, stop work and remove personnel from high hazard areas until conditions subside.
- Avoid areas where loose material could become airborne (building or roof panels).

Tornado –

- Immediately evacuate all personnel to Safe Haven and conduct head count.
- Notify management and ensure that warning has been relayed to all other on-site operations. If possible, notify corporate HSE.
- Wait for event to pass.

Temperature extremes – although these operations are primarily in buildings, there is a potential for hazardous temperature extremes (severe cold and excessive heat). These conditions should be monitored on a daily basis by all personnel. Employees are expected to come to work prepared to deal with daily conditions. Employees are trained in recognizing hazardous conditions and symptoms of heat/cold stress. Failing to address these conditions can lead to personal injury/ medical emergencies and should be monitored by all on a daily basis. This type of emergency is predictable and should not happen. If an individual does experience a temperature extreme-related injury, follow Injury Procedure – severe cases can be Life Threatening.

POST-EMERGENCY PROCEDURES:

After an emergency has occurred, and all conditions have stabilized, it is critical that a thorough and complete Incident Investigation be completed. This investigation should not only address the causes of the emergency, but should focus on the response and reaction times as well as effectiveness of response measures. Depending on the type and nature of an emergency, additional reporting requirements to various government agencies and insurance carriers may be required. Seek guidance and assistance from Corporate HSE. In addition to an Incident Investigation, it is necessary to generate the following information:

- An accurate and thorough account of all incurred physical property damages and losses (equipment, structures, property, environment),
- Photographs, drawings, etc. that document and portray the type, nature and degree of losses/damage.
- Detailed account of response/mitigation measures and associated costs.
- Costs associated with lost/damaged equipment and property.

These findings must be evaluated by management and lessons learned must be integrated into revised Emergency Response Procedures for potential future events. Training with all personnel covering the causes, investigation findings, and any procedural changes shall be conducted as warranted.

These emergency response procedures be reviewed annually, and associated training will be then be conducted annually and/or after an even that triggers use of this Emergency Response Plan.



Smithereen

Pest Management Services

Your Partner for a Healthy Environment

www.smithereen.com

(S)

Smithereen Pest Management
1804 Garnet Court, New Lenox IL 60451
(815)726-2468 • FAX (815)726-2494
Email: shodges@smithereen.com
www.smithereen.com

AGREEMENT FOR SERVICES

In consideration of the Client's promise to pay as hereinafter stated, Smithereen Pest Management Services, Inc agrees to furnish pest management services to the Client named hereafter for the Target Pest(s) listed below at the service address and under the conditions hereinafter stipulated.

CLIENT INFORMATION

10005008

BILLING *South Chicago Mill Property*
Napuck Salvage of Waupaca

NAME: _____
ADDRESS: 11600 S. Burley Ave
CITY: Chicago STATE: IL ZIP: 60617
CLIENT CONTACT: *RAY SOWA* / Raya Lopez
PHONE #: (773)382-0991
Fax #: _____
E-MAIL: ravalopez@reserve-group.com

SERVICE

NAME: _____
ADDRESS: 11600 S. Burley Ave
CITY: Chicago STATE: IL ZIP: 60617
SERVICE CONTACT: *RAY SOWA* / Raya Lopez
PHONE #: (773)382-0991
MOBILE #: _____
E-MAIL: ravalopez@reserve-group.com

WORK SITE INFORMATION

DESCRIPTION: Main Sub Station

TARGET PESTS

Rodents (Add-on to existing contract)

SERVICE SPECIFICATIONS

FREQUENCY OF SERVICE: Once PER: Month INITIAL SERVICE: AREAS TO BE SERVICED PER VISIT: **Add on - See Below
FIRST SERVICE CALL IS TO BE SCHEDULED NO LATER THAN: CHECK IF GRAPH: OR INSTRUCTION SHEET IS ATTACHED
Adding on Main Sub Station - 3 Exterior Rodent Stations, 6 Tin Cats, 4 Interior Rodent Stations

CONSIDERATION

INITIAL CHARGE: \$160.00 and ANNUAL CHARGE \$ N/A ARE NOW DUE, BUT MAY BE PAID AS FOLLOWS: N/A
MONTHLY PAYMENTS OF \$45.00 OR ONE TIME PAYMENT N/A

1. Smithereen agrees to render the service described above and as many other calls, as it deems necessary to control the Target Pests providing timely payments have been made. This agreement specifically excludes all and any pests not indicated under the Target Pests above.
2. The initial term of this Agreement is for one year from the date hereof and it shall continue in full force and effect after the initial term unless cancelled by either party upon not less than 30 days written notice. After the expiration of the initial term, Smithereen reserves the right, upon sufficient notice to modify the cost of the services at any time.
3. This agreement is contingent upon strikes, lockouts, or other labor trouble and war, fire, flood and other contingencies beyond the control of Smithereen.
4. It is understood by the Client that pest management services may involve the use of toxic substances and that Smithereen assumes no responsibility or control over the hazards involved in the use of these substances beyond reasonable care in their application.
5. Smithereen assumes no liability for any property damage done by any pests prior to, during or subsequent to any treatment by Smithereen. In any event, the full extent of Smithereen's liability under this Agreement shall be limited to the services charges paid under this Agreement subject to any applicable Statute of Limitations.
6. Smithereen reserves the right to modify any terms of this Agreement where performance of treatment may result in violation of Federal, State, or Local Rules and Regulations or Industrial Practices or Labeling Instructions.

In witness whereof, the parties have caused this agreement to be executed by their authorized representatives, the day and year hereinafter mentioned.

Smithereen Pest Management

By: Scott Hodges
Title: Field Representative
Signature: _____ Date: 5/16/2017
*Authorized: _____ Date: _____

Client: Marine Reserve Terminal
By: (print name) *Raymond Sowa* / Raya Lopez
Title/Co.: _____
Signature: *K. Raymond / Sowa* Date: 5-16-17

(For Office Use Only

Cust. No.



Smithereen Pest Management Services, Inc
 7400 N. Melvina Avenue • Niles, IL 60714
 (847) 647-0010 • FAX (847) 647-0606
 Email: andy@smithereen.com
 www.smithereen.com

AGREEMENT FOR SERVICES

In consideration of the Client's promise to pay as hereinafter stated, Smithereen Pest Management Services, Inc agrees to furnish pest management services to the Client named hereafter for the Target Pest(s) listed below at the service address and under the conditions hereinafter stipulated.

CLIENT INFORMATION

BILLING
 NAME: RESERVE MARINE TERMINALS
 ADDRESS: 11600 S BURLEY AVE
 CITY CHICAGO STATE IL ZIP 60617-7296
 CLIENT CONTACT: ROBERT EVENHOUSE
 PHONE #: 773-271-8740
 Fax #:
 Email: robevenhouse@reservemarine.com

SERVICE
 NAME: RESERVE MARINE TERMINALS
 ADDRESS: 11600 S BURLEY AVE
 11401 GREENBAY ROAD
 CITY CHICAGO STATE IL ZIP 60617-7296
 SERVICE CONTACT: ROBERT EVENHOUSE
 PHONE #: 773-382-0122
 MOBILE #: 773-491-3155
 Email: robevenhouse@reservemarine.com

WORK SITE INFORMATION

DESCRIPTION: OFFICE BUILDING - (C1A)

TARGET PESTS

RODENTS > (MICE, RATS); COCKROACHES > (AMERICAN, GERMAN, ORIENTAL); ANTS > (PAVEMENT)

SERVICE SPECIFICATIONS

FREQUENCY OF SERVICE ONCE PER MONTH INITIAL SERVICE NO AREAS TO BE SERVICED PER VISIT: INSPECT AND TREAT OFFICE BLD.RMT SCALE HOUSE, RECYCLING BLDG. (OFFICES & BREAKRM ONLY) AND LOCKER RMS, KITCHEN OF 11401 GREENBAY BLD
 FIRST SERVICE CALL IS TO BE SCHEDULED NOT LATER THAN CHECK IF GRAPH OR INSTRUCTION SHEET IS ATTACHED
 SPECIAL INSTRUCTIONS:

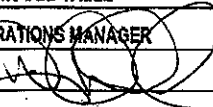
CONSIDERATION

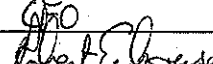
INITIAL CHARGE \$ N/A and ANNUAL CHARGE \$ 1140.00 ARE NOW DUE, BUT MAY BE PAID AS FOLLOWS: The initial charge upon completion of the initial service, plus 4 QUARTERLY PAYMENTS OF \$ 285.00 OR MONTHLY PAYMENTS OF \$

1. Smithereen agrees to render the service described above and as many other calls, as it deems necessary to control the Target Pests providing timely payments have been made. This agreement specifically excludes all and any pests not indicated under the Target Pests above.
2. The initial term of this Agreement is for one year from the date hereof and it shall continue in full force and effect after the initial term unless cancelled by either party upon not less than 30 days written notice. After the expiration of the initial term, Smithereen reserves the right, upon sufficient notice, to modify the cost of the services at any time.
3. This Agreement is contingent upon strikes, lockouts, or other labor trouble and war, fire, flood and other contingencies beyond the control of the Smithereen.
4. It is understood by the Client that pest management services may involve the use of toxic substances and that Smithereen assumes no responsibility or control over the hazards involved in the use of these substances beyond reasonable care in their application.
5. Smithereen assumes no liability for any property damage done by any pests prior to, during or subsequent to any treatment by Smithereen. In any event, the full extent of Smithereen's liability under this Agreement shall be limited to the services charges paid under this Agreement subject to any applicable Statute of Limitations.
6. Smithereen reserves the right to modify any terms of this Agreement where performance of treatment may result in violation of Federal, State, or Local Rules and Regulations or Industrial Practices or Labeling Instructions.

In witness whereof, the parties have caused this agreement to be executed by their authorized representatives, the day and year hereinafter mentioned.

Smithereen Pest Management

By DENNIS DEL VALLE
 Title OPERATIONS MANAGER
 Signature  Date 09/21/11
 *Authorized Date

Client RESERVE MARINE TERMINALS
 By (print name) Robert Evenhouse
 Title/Co. GPO
 Signature  Date 9/26/11



Smithereen

Pest Management Services

Your Partner for a Healthy Environment
www.smithereen.com

Smithereen Pest Management
1804 Garnet Court, New Lenox IL 60451
(815)726-2468 • FAX (815)726-2494
Email: shodges@smithereen.com
www.smithereen.com

AGREEMENT FOR SERVICES

In consideration of the Client's promise to pay as hereinafter stated, Smithereen Pest Management Services, Inc agrees to furnish pest management services to the Client named hereafter for the Target Pest(s) listed below at the service address and under the conditions hereinafter stipulated.

CLIENT INFORMATION

BILLING

NAME: Napuck Salvage of Waupaca
ADDRESS: 11600 S. Burley Ave
CITY: Chicago STATE: / ZIP: IL, 60617
CLIENT CONTACT: Gus Villanueva
PHONE #: (773)447-3473
Fax #:
E-MAIL: gusvillanueva@reserve-group.com

SERVICE

NAME: Napuck Salvage of Waupaca
ADDRESS: 11600 S. Burley Ave
CITY: Chicago STATE: IL ZIP: 60617
SERVICE CONTACT: Gus Villanueva
PHONE #: (773)447-3473
MOBILE #:
E-MAIL: gusvillanueva@reserve-group.com

WORK SITE INFORMATION

DESCRIPTION: Warehouse

TARGET PESTS

Rodents (Add-on to existing contract)

SERVICE SPECIFICATIONS

FREQUENCY OF SERVICE: Once PER: Month INITIAL SERVICE: AREAS TO BE SERVICED PER VISIT: **Add on - See Below
FIRST SERVICE CALL IS TO BE SCHEDULED NO LATER THAN: CHECK IF GRAPH: OR INSTRUCTION SHEET IS ATTACHED
Adding on Locker Room / Lunch Room, Shop, and Electric Shop to existing service.

CONSIDERATION

INITIAL CHARGE: \$75.00 and ANNUAL CHARGE \$ N/A ARE NOW DUE, BUT MAY BE PAID AS FOLLOWS: N/A
MONTHLY PAYMENTS OF \$45.00 OR ONE TIME PAYMENT \$615.00

1. Smithereen agrees to render the service described above and as many other calls, as it deems necessary to control the Target Pests providing timely payments have been made. This agreement specifically excludes all and any pests not indicated under the Target Pests above.
2. The initial term of this Agreement is for one year from the date hereof and it shall continue in full force and effect after the initial term unless cancelled by either party upon not less than 30 days written notice. After the expiration of the initial term, Smithereen reserves the right, upon sufficient notice to modify the cost of the services at any time.
3. This agreement is contingent upon strikes, lockouts, or other labor trouble and war, fire, flood and other contingencies beyond the control of Smithereen.
4. It is understood by the Client that pest management services may involve the use of toxic substances and that Smithereen assumes no responsibility or control over the hazards involved in the use of these substances beyond reasonable care in their application.
5. Smithereen assumes no liability for any property damage done by any pests prior to, during or subsequent to any treatment by Smithereen. In any event, the full extent of Smithereen's liability under this Agreement shall be limited to the services charges paid under this Agreement subject to any applicable Statute of Limitations.
6. Smithereen reserves the right to modify any terms of this Agreement where performance of treatment may result in violation of Federal, State, or Local Rules and Regulations or Industrial Practices or Labeling Instructions.

In witness whereof, the parties have caused this agreement to be executed by their authorized representatives, the day and year hereinafter mentioned.

Smithereen Pest Management

By Scott Hodges
Title Field Representative
Signature Date 3/16/2017
*Authorized Date

Client Marine Reserve Terminal
By: (print name) Gus Villanueva
Title/Co. Signature Date 3-16-17

(For Office Use Only)

Cust. No.



7400 N Melvina • Niles, IL 60714 • (847) 647-0010 • Fax (847) 647-0606
billing@smithereen.com



INVOICE # 2392840

LOCATION #	114595
BILL-TO #	114595
INVOICE #	2392840
INVOICE DATE	02/01/21
P.O #	

*****AUTO**MIXED AADC 601 Tray 6 : Piece 1936
 Regency Technologies
 Leah Dery
 4550 Darrow Rd
 Stow OH 44224-1804

SERVICE LOCATION:
 Regency Technologies
 Ray Sowa III
 11600 S BURLEY AVE
 CHICAGO, IL 60617-7201

Regularly scheduled PC Service 86.00

Target Pests: Pavement Ants, House Mice, Norway Rats, American Cockroaches,
 German Cockroaches, Oriental Cockroaches

POSTED
2/1

*** ANY questions, call 815-726-2468 ***

APPROVE _____ MO 01
 A/C# _____
 A/C# 25.500.6050
 A/C# _____
 VOUCHER _____

Subtotal	86.00
Tax	0.00
Total	86.00
Amount Paid	0.00
Balance	86.00

55

TERMS NET

DETACH HERE

PAY THIS AMOUNT
\$86.00

CITY OF CHICAGO

LICENSE CERTIFICATE NON-TRANSFERABLE

BY THE AUTHORITY OF THE CITY OF CHICAGO, THE FOLLOWING SPECIFIED LICENSE IS HEREBY GRANTED TO

NAME:

SOUTH CHICAGO PROPERTY MANAGEM

PRINTED ON:
06/05/2020

DBA:
AT:

SOUTH CHICAGO PROPERTY MANAGEM
11401 S. GREEN BAY AVE., Floor 1ST
CHICAGO, IL 60617

LICENSE NO. ^{1ST}

CODE:

FEE:

LICENSE:

85056

1010

\$****250.00

Limited Business License

MEMBER: PAUL D. JOSEPH

MEMBER: STEVEN C. JOSEPH

This license is a privilege granted and not a property right. This license is the property of the City of Chicago.

THIS LICENSE IS ISSUED AND ACCEPTED SUBJECT TO THE REPRESENTATIONS MADE ON THE APPLICATION THEREFOR, AND MAY BE SUSPENDED OR REVOKED FOR CAUSE AS PROVIDED BY LAW. LICENSEE SHALL OBSERVE AND COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS OF THE UNITED STATES GOVERNMENT, STATE OF ILLINOIS, COUNTY OF COOK, CITY OF CHICAGO AND ALL AGENCIES THEREOF.

WITNESS THE HAND OF THE MAYOR OF SAID CITY AND THE CORPORATE SEAL THEREOF

THIS DAY OF

15

JULY

EXPIRATION DATE:

July 15, 2022

ATTEST:



Paul D. Joseph
MAYOR

Anna M. Valencia
CITY CLERK

ACCOUNT NO.

TRANS NO.

65996

SITE

2

THIS LICENSE MUST BE POSTED IN A CONSPICUOUS PLACE UPON THE LICENSED PREMISES.



CITY OF CHICAGO

LICENSE CERTIFICATE NON-TRANSFERABLE

BY THE AUTHORITY OF THE CITY OF CHICAGO, THE FOLLOWING SPECIFIED LICENSE IS HEREBY GRANTED TO

NAME

SOUTH SHORE RECYCLING, LLC

PRINTED ON:
06/17/2020

DBA:
AT:

SOUTH SHORE RECYCLING, LLC
11600 S. BURLEY AVE.
CHICAGO, IL 60617

LICENSE NO.:

CODE:

FEE:

LICENSE:

2153584

1010

\$****250.00

Limited Business License

MANAGING MEMBER: STEVEN JOSEPH

This license is a privilege granted and not a property right. This license is the property of the City of Chicago.

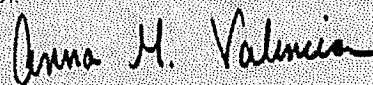
THIS LICENSE IS ISSUED AND ACCEPTED SUBJECT TO THE REPRESENTATIONS MADE ON THE APPLICATION THEREOF, AND MAY BE SUSPENDED OR REVOKED FOR CAUSE AS PROVIDED BY LAW; LICENSEE SHALL OBSERVE AND COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS OF THE UNITED STATES GOVERNMENT, STATE OF ILLINOIS, COUNTY OF COOK, CITY OF CHICAGO AND ALL AGENCIES THEREOF.

WITNESS THE HAND OF THE MAYOR OF SAID CITY AND THE CORPORATE SEAL THEREOF

THIS 15 DAY OF JUNE, 2020

EXPIRATION DATE: June 15, 2022

ATTEST:



CITY CLERK

ACCOUNT NO. 372314 SITE: MAYOR

TRANS NO.

THIS LICENSE MUST BE POSTED IN A CONSPICUOUS PLACE UPON THE LICENSED PREMISES.



CITY OF CHICAGO

LICENSE CERTIFICATE NON-TRANSFERABLE

BY THE AUTHORITY OF THE CITY OF CHICAGO, THE FOLLOWING SPECIFIED LICENSE IS HEREBY GRANTED TO

NAME

NAPUCK SALVAGE OF WAUPACA

PRINTED ON:
06/05/2020

DBA
AT:

NAPUCK SALVAGE OF WAUPACA
11401 S. GREEN BAY AVE.
CHICAGO, IL 60617

LICENSE NO.:

CODE:

FEE:

LICENSE:

1622926

1010

\$****250.00

Limited Business License

MEMBER: PETER GEHRKE

MEMBER: NAPUCK HOLDINGS LTD.

This license is a privilege granted and not a property right. This license is the property of the City of Chicago.

THIS LICENSE IS ISSUED AND ACCEPTED SUBJECT TO THE REPRESENTATIONS MADE ON THE APPLICATION THEREFOR AND MAY BE SUSPENDED OR REVOKED FOR CAUSE AS PROVIDED BY LAW. LICENSEE SHALL OBSERVE AND COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS OF THE UNITED STATES GOVERNMENT, STATE OF ILLINOIS, COUNTY OF COOK, CITY OF CHICAGO AND ALL AGENCIES THEREOF.

WITNESS THE HAND OF THE MAYOR OF SAID CITY AND THE CORPORATE SEAL THEREOF
THIS DAY OF

15

JULY

EXPIRATION DATE:

July 15, 2022

ATTEST:

ACCOUNT NO.

TRANS NO.

296054

SITE: 1

THIS LICENSE MUST BE POSTED IN A CONSPICUOUS PLACE UPON THE LICENSED PREMISES.



CITY OF CHICAGO

LICENSE CERTIFICATE NON-TRANSFERABLE

BY THE AUTHORITY OF THE CITY OF CHICAGO, THE FOLLOWING SPECIFIED LICENSE IS HEREBY GRANTED TO

NAME

NAPUCK SALVAGE OF WAUPACA

PRINTED ON:
06/05/2020

DBA
AT

NAPULK SALVAGE OF WAUPACA
11600 S. BURLEY AVE.
CHICAGO, IL 60617

LICENSE NO.:

CODE:

FEE:

LICENSE: 2216799

4404

\$****250.00

Regulated Business License

Includes: Storage or Use of Hazardous Materials;

MEMBER: PETER GEHRKE

MEMBER: NAPUCK HOLDINGS LTD.

This license is a privilege granted and not a property right. This license is the property of the City of Chicago.

THIS LICENSE IS ISSUED AND ACCEPTED SUBJECT TO THE REPRESENTATIONS MADE ON THE APPLICATION THEREFOR, AND MAY BE SUSPENDED OR REVOKED FOR CAUSE AS PROVIDED BY LAW; LICENSEE SHALL OBSERVE AND COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS OF THE UNITED STATES GOVERNMENT, STATE OF ILLINOIS, COUNTY OF COOK, CITY OF CHICAGO AND ALL AGENCIES THEREOF.

WITNESS THE HAND OF THE MAYOR OF SAID CITY AND THE CORPORATE SEAL THEREOF
THIS DAY OF

15

JULY

EXPIRATION DATE:

July 15, 2022

ATTEST:



ACCOUNT NO.

TRANS NO.

296054

SITE: 2

MAYOR

CITY CLERK



THIS LICENSE MUST BE POSTED IN A CONSPICUOUS PLACE UPON THE LICENSED PREMISES.

CITY OF CHICAGO

LICENSE CERTIFICATE NON-TRANSFERABLE

BY THE AUTHORITY OF THE CITY OF CHICAGO, THE FOLLOWING SPECIFIED LICENSE IS HEREBY GRANTED TO

NAME

RESERVE FTL, LLC

PRINTED ON:
05/22/2020

DBA
AT:

RESERVE MARINE TERMINALS
11600 S. BURLEY AVE.
CHICAGO, IL 60617

LICENSE NO.

CODE:

FEE:

LICENSE:

2153587

1010

\$****250.00

Limited Business License

MANAGING MEMBER: STEVEN JOSEPH

This license is a privilege granted and not a property right. This license is the property of the City of Chicago.

THIS LICENSE IS ISSUED AND ACCEPTED SUBJECT TO THE REPRESENTATIONS MADE ON THE APPLICATION THEREFOR, AND MAY BE SUSPENDED OR REVOKED FOR CAUSE AS PROVIDED BY LAW. LICENSEE SHALL OBSERVE AND COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS OF THE UNITED STATES GOVERNMENT, STATE OF ILLINOIS, COUNTY OF COOK, CITY OF CHICAGO AND ALL AGENCIES THEREOF.

WITNESS THE HAND OF THE MAYOR OF SAID CITY AND THE CORPORATE SEAL THEREOF
THIS 15 DAY OF JUNE, 2020

EXPIRATION DATE: June 15, 2022

ATTEST:

Eric E. Light

Anna M. Valencia

ACCOUNT NO.

372317

SIE: MAYOR

CITY CLERK

TRANS NO.

THIS LICENSE MUST BE POSTED IN A CONSPICUOUS PLACE UPON THE LICENSED PREMISES.





City of Chicago
Lori E. Lightfoot
Mayor

HAL TOLIN
REGENCY TECHNOLOGIES, LLC / I.T. SCRAP, LLC
11600 S. BURLEY AVE.
CHICAGO, IL 60617

Department of Business Affairs and
Consumer Protection
City Hall, Room 800
121 North LaSalle Street
Chicago, IL 60602
(312)-74-GOBIZ (312-744-6249)
(312) 744-1944 (TTY)
businesslicense@cityofchicago.org

11/24/2020

Dear HAL TOLIN:

Please be informed of the following decision, regarding your license application inquiry, from the Chicago Department of Zoning:

Account: 471874

Site: 1

Site Address: 11600 S. BURLEY AVE.
CHICAGO, IL 60617

License: Regulated Business License, 4404

Business Activity: 70,000 SQ FT - ELECTRONICS RECYCLING FACILITY 2A WITH
STORAGE OF BATERIES - 52 EMPLOYEES

Decision: MORE INFORMATION REQUIRED

MUST PROVIDE PLAT OF SURVEY, DIAGRAM OF FACILITY,
SITE PLAN SHOWING 13 PARKING SPACES FOR EMPLOYEES
AND DRIVEWAY RELEASE LETTER.

**STORMWATER POLLUTION
PREVENTION PLAN**

**SOUTH CHICAGO PROPERTY MANAGEMENT, LTD
11600 SOUTH BURLEY AVENUE
CHICAGO, ILLINOIS 60617**

PREPARED BY:

KPRG and Associates, Inc.
414 Plaza Drive, Suite 106
Westmont, Illinois 60559

KPRG Project No. 18115

October 2015
Rev-1: April 2018
Rev-2: December 2018
Rev-3: September 2019
Rev-4: March 2020
Rev-5: March 2021

TABLE OF CONTENTS

SECTION/DESCRIPTION	PAGE
1.0 INTRODUCTION	1
2.0 FACILITY DESCRIPTION AND CONTACT INFORMATION.....	2
2.1 Facility Information	2
2.2 Contact Information / Responsible Party.....	3
2.3 Stormwater Pollution Prevention Team.....	4
2.4 Facility Description and Activities	5
2.5 General Location Map	6
2.6 Facility Map	7
3.0 POTENTIAL POLLUTANT SOURCES	8
3.1 Significant Materials and Potential Pollutant Sources.....	8
3.2 Spills and Leaks	11
3.3 Sampling Data.....	11
3.4 Non-Stormwater Discharges	11
3.5 Bulk Storage Containment Areas.....	12
4.0 STORMWATER CONTROL MEASURES	12
4.1 Inbound Material Management.....	13
4.2 Minimize Exposure	13
4.3 Good Housekeeping.....	13
4.4 Preventive Maintenance.....	15
4.5 Spill Prevention and Response.....	15
4.6 Erosion and Sediment Controls.....	17
4.7 Management of Runoff.....	17
4.8 Bulk Storage Containment Area Drainage.....	17
4.9 Stormwater Management Practices.....	18
5.0 EMPLOYEE TRAINING	20
6.0 INSPECTIONS AND EVALUATIONS	22
6.1 Routine Facility Inspection	22
6.2 Bulk Storage Containment Area Drainage.....	23
6.3 Quarterly Visual Assessment of Stormwater Discharges	23
6.4 Benchmark Monitoring.....	24
6.5 Annual Compliance Evaluation	25
7.0 CORRECTIVE ACTIONS	28
7.1 Conditions Requiring SWPPP Review and Revision	28
7.2 Corrective Action Documentation	28
8.0 SUMMARY OF SWPPP REQUIREMENTS	30

APPENDICES

- Appendix A. General Permit & Supporting Documentation
- Appendix B. Regency Technologies No Exposure Certification
- Appendix C. Facility Figures
- Appendix D. Quantitative Stormwater Sampling Data
- Appendix E. Non-Storm Water Discharge Certification
- Appendix F. Employee Training Documentation
- Appendix G. Routine Facility Inspection Forms
- Appendix H. Containment Inspection and Drainage Records
- Appendix I. Quarterly Visual Monitoring Logs
- Appendix J. IEPA Annual Inspection Reports
- Appendix K. Corrective Action Form
- Appendix L. SWPPP Revision History

STORMWATER POLLUTION PREVENTION PLAN

SWPPP AUTHORIZATION & CERTIFICATION

I certify under penalty of law that this document and all appendices were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information contained in this document. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained herein is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Hal Tolin

COO

Name

Title

Signature

Date

3-18-21

I certify that I have examined the Facility, and, being familiar with the provisions of the NPDES permit requirements, attest that this Stormwater Pollution Prevention Plan has been prepared in accordance with sound industry practices, and applicable state and local requirements.

Frank Santella, P.G.

Senior Project Manager / KPRG and Associates, Inc.

Name

Title

Signature

Date

03/18/21

STORMWATER POLLUTION PREVENTION PLAN

1.0 INTRODUCTION

South Chicago Property Management Co., LTD (SCPM) retained KPRG and Associates, Inc. (KPRG) to prepare this *Stormwater Pollution Prevention Plan* (SWPPP). The SWPPP addresses stormwater pollution prevention at SCPM’s 175 acre property located at 11600 South Burley Avenue in Chicago, Cook County, Illinois (Facility). The Facility is currently comprised of four separate entities that operate independently but with oversight control by SCPM as the landlord. The four entities operating at the Facility and their associated Standard Industrial Classification (SIC) are:

ENTITY	SIC
1. Reserve Marine Terminals (RMT)	5093 & 4789
2. Napuck Salvage of Waupaca (NOW)	5093
3. South Shore Recycling (SSR)	5093
4. Regency Technologies (Regency)	5093

A fifth facility, General III LLC, dba Southside Recycling, is currently under construction and is covered under a separate stormwater construction permit – NPDES # ILR10BE80.

The Illinois Environmental Protection Agency (IEPA) National Pollution Discharge Elimination System (NPDES) General Permit for stormwater discharges associated with industrial activity (included in Appendix A) requires this SWPPP. The purpose of the SWPPP is to:

- Identify potential sources of pollution that may be expected to affect the quality of stormwater discharges associated with industrial activity;
- Describe and ensure the implementation of practices that are to be used to reduce potential pollutants in stormwater discharges associated with industrial activity; and
- Assure compliance with terms and conditions of the stormwater General Permit.

SCPM has overall responsibility for stormwater compliance on this campus, and has the support and cooperation of each tenant necessary to assure compliance with the NPDES General Permit requirements (e.g., SCPM is authorized to direct workers at each entity to carry out activities required by the General Permit and presented in this SWPPP for the Facility as related to their particular operation). General III LLC dba Southside Recycling, will be situated on the northeastern portion of the Facility, and from an environmental standpoint also is under the oversight of SCPM. However, this entity is being constructed with its own stormwater

STORMWATER POLLUTION PREVENTION PLAN

containment/treatment system, and is authorized to discharge stormwater to the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC). As such, the Southside Recycling stormwater drainage area is separate from SCPM's General Permit and any associated discharges to the MWRDGC are exempt from stormwater permitting.

This SWPPP is to be maintained at the Facility and made available for review by IEPA or their duly authorized representatives in the event of an on-site inspection. Furthermore, this SWPPP is to be submitted to the IEPA in electronic format as a condition of the General Permit.

2.0 FACILITY DESCRIPTION AND CONTACT INFORMATION

2.1 Facility Information

Name of Facility: South Chicago Property Management Co., LTD

Street: 11600 South Burley Avenue

City: Chicago

State: IL

ZIP Code: 60617

County or Similar Subdivision: Cook

NPDES ID (i.e., General Permit tracking number): ILR006371

Primary Industrial Activity SIC code, and Sector and Subsector (2015 MSGP, Appendix D and Part 8): 5093 and 4789

Co-located Industrial Activity(s) SIC code(s), Sector(s) and Subsector(s) (2015 MSGP, Appendix D): 5093 and 4789

Latitude/Longitude

Latitude:

Longitude:

41 .68501° N (decimal degrees)

-87.54544° W (decimal degrees)

Method for determining latitude/longitude (check one):

USGS topographic map (specify scale: _____)

GPS

Other (please specify): U.S. EPA website

Is the Facility located in Indian country? Yes

No

If yes, name of Reservation, or if not part of a Reservation: Not Applicable

Estimated area of industrial activity at site exposed to stormwater: 129 acres

Discharge Information

Does this Facility discharge stormwater into a municipal separate storm sewer system

(MS4)? Yes No

If yes, name of MS4 operator: Not Applicable

STORMWATER POLLUTION PREVENTION PLAN

Name(s) of surface water(s) that receive stormwater from your Facility: Calumet River

Does this Facility discharge industrial stormwater directly into any segment of an “impaired water” (see definition in 2015 MSGP, Appendix A)? Yes No

If Yes, identify name of the impaired water(s) (and segment(s), if applicable): Calumet River / Segment HAA-01

Identify the pollutant(s) causing the impairment(s): PCBs, Fecal Coliform and Mercury

Which of the identified pollutants may be present in industrial stormwater discharges from this Facility: Mercury and PCBs

Has a Total Maximum Daily Load (TMDL) been completed for any of the identified pollutants: No

If yes, please list the TMDL pollutants: Not Applicable

Does this Facility discharge industrial stormwater into a receiving water designated as a Tier 2, Tier 2.5 or Tier 3 water (see definitions in 2015 MSGP, Appendix A): Yes No

Are any of your stormwater discharges subject to effluent limitation guidelines (ELGs) (2015 MSGP Table 1-1): Yes No

If Yes, which guidelines apply: Not Applicable

2.2 Contact Information / Responsible Party

Facility Operator(s):

Name: Reserve Marine Terminals / Napuck Salvage of Waupaca / South Shore Recycling /
Regency Technologies / Southside Recycling
Address: 11600 South Burley Avenue
City, State, Zip Code: Chicago, Illinois, 60617
Telephone Number: 773-721-8740
Email address: dennisstropko@reserve-group.com
Fax number: 773-721-8798

Facility Owner(s):

Name: South Chicago Property Management Co., LLC
Address: 11600 South Burley Avenue
City, State, Zip Code: Chicago, Illinois, 60617
Telephone Number: 773-721-8740
Email address: haltolin@reserve-group.com
Fax number: 773-721-8798

STORMWATER POLLUTION PREVENTION PLAN

SWPPP Contact(s):

SWPPP Contact Name (Primary): Dennis Stropko
Telephone number: 440-287-7216
Email address: dennisstropko@reserve-group.com
Fax number: 440-287-7216

SWPPP Contact Name (Backup): Nicholas Blachuciak
Telephone number: 773-966-0673
Email address: nicholasblachuciak@reserve-group.com
Fax number: 773-721-8798

2.3 Stormwater Pollution Prevention Team

The following employees of SCPM will implement the SWPPP:

Nicholas Blachuciak – Local HSE Coordinator; Ray Sowa – Facility Grounds

- Implement stormwater control measures
- Assure record keeping requirements of plan are completed
- Assure good housekeeping, preventive maintenance, spill prevention and response, and materials handling and storage practices are followed by personnel on a daily basis
- Recommend additional stormwater controls, as needed
- Train personnel in preventive maintenance, spill prevention and response, and material handling and storage
- Oversee the maintaining of required records
- Perform inspections and quarterly visual stormwater monitoring

Dennis Stropko – HSE Manager

- Recommend SWPPP improvements or amendments
- Train personnel in preventive maintenance, spill prevention and response, and material handling and storage
- Update and edit SWPPP as needed or required
- Perform annual compliance evaluation together with Nicholas Blachuciak
- Verify compliance with SWPPP and General Permit
- Coordinate General Permit renewal

Hal Tolin - COO

- Signatory authority for NOIs, General Permits and plans

- Allocation of funding to implement SWPPP and stormwater controls

Key management staff at each of the four operating entities also will be charged with ensuring that applicable control measures, inspections and record keeping requirements of the SWPPP are implemented.

2.4 Facility Description and Activities

The SCPM Facility is located on Chicago's south side and is comprised of four (soon to be five) separate entities involved in various activities affiliated with scrap metal recycling and raw material storage and transloading/stevedoring. The property is improved by numerous structures and equipment associated with a former integrated steel manufacturing plant, which occupied the property from the early 1940's until the late 1990's, with the exception of coke making operations,. The former coke making plant, which was present immediately adjacent to the northern property boundary, is not part of the SCPM Facility. The former steel manufacturing structures at the Facility are in various stages of demolition, renovation and/or re-use. Most of the existing Facility operations, including material storage areas, are underlain by concrete floor slabs associated with the former integrated steel manufacturing buildings and plant equipment. As Facility operations are mainly situated atop paved areas, stormwater flows along these areas to surrounding unimproved ground surface, collects and eventually evaporates and/or infiltrates, except for the Southside Recycling drainage area. The Southside Recycling drainage area is entirely paved with concrete and asphalt pavement. The improved pavement is elevated from the surrounding ground surface and is pitched to direct all stormwater into catch basins surrounding its paved perimeter. The catch basins and associated conveyance piping direct stormwater into two asphalt-lined retention basins located on the eastern portion of the drainage area. From the retention basins the stormwater is subsequently treated in an on-site treatment plant prior to being discharged to the MWRDGC system. There are some additional stormwater catch basins present throughout the Facility which collect runoff from various non-processing areas. Those basins are blocked and contain stormwater within the campus collection/basement system.

Although the Facility's western boundary is immediately adjacent to the Calumet River, there is no stormwater runoff or outfall to the river. Surface gradient along the western boundary is such that the land along the river slopes eastward preventing uncontrolled stormwater discharge to the river. Furthermore, a concrete seawall berm is in place along the entire length of the Facility's western property boundary, which further precludes uncontrolled stormwater discharge to the river.

Stockpiles of various un-prepared and prepared scrap metal are present throughout the Facility

within the boundaries of each operating entity. In addition, storage of new steel product, aggregate and other transloading/stevedoring materials as part of SCPM’s non-scrap metal processing operations are exposed to stormwater. Stormwater runoff that comes in contact with these materials generally drain to low-lying areas of the Facility boundaries and evaporate/infiltrate. Heavy rain events result in sheet flows to these low lying areas of the Facility. Several rail spurs that generally are of higher grade than surrounding surface topography also direct stormwater flow to low lying areas of the Facility.

The nature of industrial activities associated with each operating entity are summarized below:

ENTITY	Industrial Activities
Reserve Marine Terminals (Scrap Processing)	Receives and processes ferrous and other specialty scrap metal for recycling. Outdoor operations include unloading/loading, storing and processing ferrous scrap metal by torch cutting, mobile shearing, and cast breaking. Some sizing and metal screening activities are also present. Processes foundry sand via crushing/screening in an indoor operation.
Reserve Marine Terminals (Transloading/Stevedoring)	Receives, stores and warehouses various bulk product including scrap metals and new finished steel that are exposed to stormwater. Unloading/loading of barges, rail cars containers and oceangoing vessels.
Regency Technologies (Regency)	An ISO 14001:2004 and RIOS:2006 certified electronics recycler, with dismantling and storage operations performed indoors. Temporary storage of mixed plastics on outdoor concrete pad/steel bin, pitched to bin
Napuck Salvage of Waupaca (NOW)	Acquires and processes both ferrous and non-ferrous scrap metals. Operations consist of motor block breaking and shredding/screening of aluminum/ferrous material. Material processing occurs indoors and most material storage is indoors with limited outdoor storage.
South Shore Recycling (SSR)	Purchases a mixture of ferrous and non-ferrous scrap metals from peddlers, trade contractors and industrial accounts.
Southside Recycling (Under Construction)	A scrap metal shredding and shredder residue metal recovery plant that purchases and processes ferrous and non-ferrous scrap metals.

2.5 General Location Map

A general location map for the Facility is provided on Figure 1 in Appendix C. This figure includes an excerpt from a topographic map extending more than one-quarter mile beyond the property boundaries of the Facility and surface water bodies. The remaining figure requirements are shown on Figure 2 in Appendix C, as noted below.

2.6 Facility Map

The Facility map depicted on Figure 2 in Appendix C illustrates the following features:

- Facility property boundaries and general boundaries for each of the four operating entities.
- Location of significant structures and impervious surfaces
- Direction arrows of stormwater flow
- Location of stormwater control measures
- Stormwater conveyance and discharge structures.
- Equipment and vehicle maintenance area
- Areas of existing and potential soil erosion
- Material loading, unloading, and access areas
- Material processing areas
- Surface water bodies.
- Southside Recycling excluded – drainage area discharge to MWRDGC.

STORMWATER POLLUTION PREVENTION PLAN

3.0 POTENTIAL POLLUTANT SOURCES

3.1 Significant Materials and Potential Pollutant Sources

Identified significant materials and corresponding potential pollutants, along with structural and non-structural control measures that are in place to prevent stormwater impacts are summarized below. The storage location of significant materials and activities are illustrated on the Facility Map (Figure 2, Appendix C).

Significant Industrial Activity	Potential Pollutants	Controls
Loading/unloading and storing ferrous and non-ferrous scrap metal	Accumulated particulate matter, oil and grease, heavy metals, and motor vehicle fuel (diesel and gasoline)	<u>Non-Structural</u> <ul style="list-style-type: none"> • Inbound material source control and material inspection • Consolidate piles to minimize the footprint exposed to stormwater • Good housekeeping practices • Maintain speed limit • Dust control of roads <u>Structural</u> <ul style="list-style-type: none"> • Utilize impervious containment pads for unloading potentially oily scrap • Maintain grading and contouring • Maintain concrete seawall berm and soil berm
Material processing: Cast Breaking	Accumulated particulate matter, oil/lubricants, diesel fuel, antifreeze, heavy metal (iron) fines	<u>Non-Structural</u> <ul style="list-style-type: none"> • Preventive maintenance • Spill prevention and response <u>Structural</u> <ul style="list-style-type: none"> • Soil berm • Ball dropping pit
Material Processing: Torch Cutting	Heavy metal fragments and fines	<u>Non-Structural</u> <ul style="list-style-type: none"> • Maintain surface grade by periodic removal of particulate • Good housekeeping practices <u>Structural</u> <ul style="list-style-type: none"> • Concrete seawall berm • Soil berm
Material Processing: Mobil Shear	Accumulated particulate matter, oil/lubricants, diesel fuel, and antifreeze	<u>Non-Structural</u> <ul style="list-style-type: none"> • Preventive maintenance • Spill prevention and response <u>Structural</u> <ul style="list-style-type: none"> • Concrete seawall berm • Soil berm
Material Processing: Foundry Sand Processing	Sand/slag/metal particulate	<u>Non-Structural</u> <ul style="list-style-type: none"> • Spill prevention and response • Good housekeeping practices <u>Structural</u> <ul style="list-style-type: none"> • Concrete containment pad • Soil Berm

STORMWATER POLLUTION PREVENTION PLAN

Significant Industrial Activity	Potential Pollutants	Controls
Material Processing: Screening plants	Accumulated particulate matter; metal/sand fragments and fines	<u>Non-Structural</u> <ul style="list-style-type: none"> • Maintain surface grade by periodic removal of particulate • Good housekeeping practices <u>Structural</u> <ul style="list-style-type: none"> • Concrete seawall berm • Soil/Sand/Fines berm as appropriate
Material Processing: Shredding Operations	Accumulated particulate matter, oil/lubricants, diesel fuel, hydraulic oil, PCBs and heavy metals	<u>Non-Structural</u> <ul style="list-style-type: none"> • Spill prevention and response • Good housekeeping practices <u>Structural</u> <ul style="list-style-type: none"> • <u>Concrete and asphalt pavement</u> • <u>Stormwater catch basins, retention ponds and treatment plant</u> • <u>Stormwater discharge to MWRDGC system</u>
Material Processing: Shredder Residue Metal Recovery	Accumulated particulate matter, oil/lubricants, PCBs and heavy metals	<u>Non-Structural</u> <ul style="list-style-type: none"> • Spill prevention and response • Good housekeeping practices <u>Structural</u> <ul style="list-style-type: none"> • <u>Concrete and asphalt pavement</u> • <u>Stormwater catch basins, retention ponds and treatment plant</u> • <u>Stormwater discharge to MWRDGC system</u>
Air pollution control equipment: Shredder residue processing baghouse	Particulate matter, heavy metals,	<u>Non-Structural</u> <ul style="list-style-type: none"> • Routine maintenance of bag house • Regular equipment inspection/monitoring <u>Structural</u> <ul style="list-style-type: none"> • Impervious surface • Waste containerized
Vehicle and equipment maintenance	Diesel fuel, fuel additives, oil/lubricants, heavy metals, brake fluids, transmissions fluids	<u>Non-Structural</u> <ul style="list-style-type: none"> • Spill prevention and response • Dry absorbents used to clean outdoor maintenance surface, no wash down <u>Structural</u> <ul style="list-style-type: none"> • Waste containerized, labeled and stored inside building, on impervious surface or removed after servicing by contractor • Maintenance performed on impervious surface, if equipment not disabled • Secondary containment for stored fluids. • Use of drip pans
Vehicle/mobile equipment fueling	Diesel fuel	<u>Non-Structural</u> <ul style="list-style-type: none"> • Spill prevention and response • Preventive maintenance/tank inspection <u>Structural</u> <ul style="list-style-type: none"> • Secondary containment for storage tanks

STORMWATER POLLUTION PREVENTION PLAN

Significant Industrial Activity	Potential Pollutants	Controls
Vehicle and equipment cleaning and washing	Particulate matter, oil and grease	<u>Non-Structural</u> <ul style="list-style-type: none"> • No detergents used <u>Structural</u> <ul style="list-style-type: none"> • Washing performed on impervious surface • Wash water contained
Drum/individual container storage and handling	Motor oil, antifreeze, hydraulic oil, petroleum lubricants	<u>Non-Structural</u> <ul style="list-style-type: none"> • Spill prevention and response • Preventive maintenance/tank inspection program <u>Structural</u> <ul style="list-style-type: none"> • Containers stored inside buildings or on impervious surface within secondary containment structures
Storage tank operations	Diesel fuel, used oil, gasoline, antifreeze	<u>Non-Structural</u> <ul style="list-style-type: none"> • Spill prevention and response • Preventive maintenance/tank inspection <u>Structural</u> <ul style="list-style-type: none"> • Secondary containment
Material handling equipment (mobile & fixed)	Hydraulic fluids, oils, fuels and fuel additives, grease and other lubricants, accumulated particulate matter, chemical additives, mercury, lead,	<u>Non-Structural</u> <ul style="list-style-type: none"> • Spill prevention and response • Preventative maintenance/inspection

STORMWATER POLLUTION PREVENTION PLAN

3.2 Spills and Leaks

No significant spills, which include releases of oil and hazardous substances in excess of reportable quantities under the Clean Water Act or Section 102 of CERCLA, or that drained to a stormwater conveyance, have occurred within the last three years.

A description of the potential spills and leaks that could occur at the Facility which could contribute pollutants to stormwater discharge are presented below. Given that there are no direct outfalls to nearby waterways, spills and releases from the below identified areas are not likely to affect surface water bodies.

Potential Spill and Leak Areas

Location	Outfall
Mobile fueling in scrap processing areas	Low-lying areas within Facility boundaries where water infiltrates and evaporates. No outfall to surface water.
Fueling area by maintenance building	
Motor block storage (containment pad)	
Scrap loading/unloading areas	
Mobile and fixed equipment processing areas	
Petroleum storage tanks for automobile draining/stripping including oil/water separator unit - INACTIVE	
Petroleum storage tanks/drums by maintenance building	
Outdoor storage areas of aggregate and new steel products	
ASR processing and storage area	
Shredding and shredder residue metal recovery plant (Southside Recycling)	MWRDGC system

3.3 Sampling Data

No quantitative stormwater discharge sampling data have been collected to date for the Facility. Quantitative sampling is not required by the General Permit, unless evidence of pollution is observed in stormwater discharge (see Section 6.3) If such data are collected in the future, copies of the data and sample collection procedures will be included in Appendix D.

3.4 Non-Stormwater Discharges

No non-allowable non-stormwater discharges occur from Facility operations as verified by dry-weather inspection. Documentation of assessment and certification of dry-weather inspection for non-allowable non-stormwater discharges is provided in Appendix E. Below is a summary of allowable non-stormwater discharges.

Summary of Allowable Non-Stormwater Discharges

Allowable Non-Stormwater Discharge Description	Does/May Occur	Controls
Fire-fighting activities	Yes	Contain water onsite to the extent practical where water was exposed to significant material(s)
Fire-hydrant flushing	No	N/A
Waters to wash vehicles/equipment without detergents	Yes	Performing washing on pervious surface or impervious contained surface (automobile draining/stripping pad) if detergent is used and direct flow away from possible outfall conveyances
Waters used for dust control	Yes	Limit application to control dust and minimize runoff
Potable water sources including waterline flushing	No	N/A
Irrigation drainage	No	N/A
Lawn watering	No	N/A
Routine external building washdown which does not include detergents	Yes	Direct runoff away for significant materials
Pavement wash waters where spills of leaks of toxic or hazardous materials have occurred and where detergents are not used	Yes	Inspect pavement for spills and leaks prior to washing; if spills or leaks are evident (i.e. periodic cleanup of containment areas), contain wash water and either evaporate or dispose off-site; if discharged, direct runoff away from significant materials and possible outfall conveyances
Air conditioning condensate	Yes	Direct runoff away from significant materials
Condensate from refrigerants	No	N/A
Springs	No	N/A
Uncontaminated groundwater	No	N/A

3.5 Bulk Storage Containment Areas

There are no bulk containment areas at the Facility subject to stormwater collection. If in the future such containment structures are added, those bulk storage containment areas will be subject to stormwater accumulation and containment drainage procedures outlined in Section 4.8 and inspection requirements outlined in Section 6.2.

4.0 STORMWATER CONTROL MEASURES

The section describes the approach taken by the Facility to comply with the non-numeric effluent limits specified for the Facility. In general, the goal of stormwater best management practices (BMPs) at the Facility are to manage and divert stormwater so that an uncontrolled discharge does not occur. The BMPs that have been implemented at the Facility are sufficient for managing such

STORMWATER POLLUTION PREVENTION PLAN

uncontrolled discharges. These BMPs are summarized in the following sections. The use of additional BMPs or modification to existing BMPS, shall be evaluated and employed at the Facility based on results of the Annual Compliance Evaluation.

4.1 Inbound Material Management

The potential for significant materials or other unauthorized potential pollutants sources to enter the Facility and be discharged to stormwater is minimized through the implementation a source control program as detailed in the Facility's Inbound Material Source Control Program. That program subjects incoming loads of recyclable materials to inspection for non-conforming and prohibited items, and rejection of acceptance of such non-conforming and prohibited items/loads.

4.2 Minimize Exposure

To the extent possible, the Facility seeks to minimize the exposure of industrial activities to rain, snow, snowmelt, and runoff. Materials are stored indoors, under cover or in containment areas as much as feasibly possible. In minimizing exposure, the Facility pays close attention to the following:

- Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from material storage areas;
- Locate materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaking or leak-prone vehicles equipment, and oil scrap to containment areas);
- Clean up small spills and leaks promptly using dry methods (e.g., absorbents) to prevent the discharge of pollutants;
- Use drip pans and absorbents under or around leaky vehicles and equipment or store indoors or on containment areas where feasible;
- Use spill/overflow protection equipment;
- Drain fluids from equipment and automobiles prior to on-site storage or recycling/disposal; and
- Perform all cleaning operations indoors, under cover, or in containment areas that prevent runoff and run-on and also that capture any overspray.

4.3 Good Housekeeping

The Facility keeps exposed areas that are potential sources of pollutants clean, including trash containers and adjacent areas, material storage areas, vehicle and equipment maintenance areas,

STORMWATER POLLUTION PREVENTION PLAN

and loading/unloading areas. Pickup and disposal of garbage and waste materials and inspections of drums, tanks, and containers for leaks and structural conditions is conducted on a routine basis. Specifically, the Facility has implemented the following practices to maintain a clean and orderly work environment:

- Personnel are instructed to dispose of their garbage in trash cans or dumpsters and to pick up any wind-blown trash or debris and place it in the appropriate container.
- Empty containers and trash are disposed of promptly and properly.
- All materials are stored in a manner that minimizes the potential for contact with stormwater (e.g., on pallets, under cover, within specified storage areas, or containment areas).
- Supplies and waste are to be stored only in designated areas.
- Personnel are instructed to visually inspect loading/unloading areas after use and to clean up any spilled material.
- All oil, chemical, and hazardous waste containers are properly closed at all times except when in use and are labeled to indicate the contents of the container.
- In order to minimize dust generation and vehicle tracking of industrial materials, roadways within the Facility are sprayed with water periodically.
- All leaks and spills are to be addressed as soon as discovery in accordance with the Facility's Spill Prevention Control and Countermeasures (SPCC) Plan.
- Integrity of and appearance of fencing is to be maintained in good condition.
- Containment areas are to be maintained free of accumulated sediment and debris.
- Mobile equipment is to be kept free of excessive oil and sediment accumulation.
- Used absorbent materials are to be cleaned up promptly and stored in covered, leak-proof containers and are to be disposed of regularly.
- Drip pans and other temporary maintenance fluid (e.g., oil, antifreeze) receptacles are to be promptly emptied into appropriate accumulation containers, drums and/or tanks, and stored inside or on containment areas when not in use.
- Unused new maintenance fluids are to be promptly returned to bulk storage container from which dispensed.
- Operational buffer zones (i.e., areas where no materials are to be stored or operations performed) are to be established at Facility entrance, fence line, property boundaries and along the river frontage.
- Scrap metal, sand/fines and other material storage stockpiles are to be maintained in a consolidated manner.
- Accumulated sediment and debris at scrap metal storage and material stockpiles is to be routinely removed and properly disposed.

STORMWATER POLLUTION PREVENTION PLAN

- Lead-acid batteries are to be stored indoors in a neat and orderly fashion on wooded pallets.
- Inbound automobiles for recycling are examined for leaks. If leaks are noted, drip pans are used as a means of controlling fluid until the vehicle can be processed and prepared for storage.

4.4 Preventive Maintenance

Preventive maintenance is conducted on Facility equipment to minimize the occurrence of drips and leaks and to reduce the potential for uncontrolled releases or stormwater exposure to other potential pollutant sources. The maintenance program includes periodic inspections and testing of pollution control equipment and process equipment in order to detect conditions which could result in breakdowns or failures. The following preventative maintenance practices are employed at the Facility:

- Equipment is to be visually inspected daily prior startup to detect faulty equipment. Any drips leaks or other noted issues are to be promptly corrected.
- Maintenance personnel or contracted mechanics are to conduct routine manufacturer's recommended maintenance on Facility equipment and in accordance with preventative maintenance program.
- The following are to be visually inspected for signs of deterioration or potential integrity issues, which are to be promptly corrected:
 - o Tanks, containers drums and other fluid storage containers (Inspections are to be performed per the Facility's SPCC Plan).
 - o Secondary containment at storage tanks (Inspections are to be performed per the Facility's SPCC Plan).
 - o Concrete containment areas.
- Stormwater levels in containment areas are to be inspected after each rainfall event. Inspection is to be recorded and drainage to be performed in accordance with procedures outlined in Section 4.8.

4.5 Spill Prevention and Response

To ensure releases of any quantity are promptly responded to and properly managed, the following practices are employed at the Facility:

- Tanks filled with petroleum products are either of double-wall construction or located inside secondary containment areas.
- Secondary containment is provided for drums and other containers that are in use.

- Only containers and drums in good condition are used for the storage of materials.
- An operator or supplier is present during all liquid transfers.
- Tanks and containers of petroleum products and associated secondary containment areas are inspected as required per the Facility’s SPCC Plan.
- Personnel continuously inspect the Facility for any spills or leaks as part of their routine duties and cleanup discovered spills/leaks as soon as possible per the Facility’s SPCC Plan.
- After rain events, visually examine stormwater accumulated in containment areas for signs of impairment (e.g., oily sheen) prior to discharge. Perform drainage in accordance with procedures outlined in Section 4.8.
- Assure employees are properly trained to respond to all types of spills.
- Keep spill control equipment/absorbent material easily accessible to employees in area prone to spills/leaks and assure adequate materials are available for responding to spills. Location of spill kits are depicted on the Facility Map.
- Do not use water to dilute or wash spills.
- Post spill response procedures and emergency response numbers at accessible locations within areas prone to spills.
- Report releases/spills in accordance with the Facility’s SPCC plan.
- Update SWPPP and revise selected stormwater control procedures as necessary to avoid spill of similar nature/cause, if existing control(s) proved inadequate in preventing incident.

Minor spills that are confined to small areas will be cleaned up as part of the Facility’s ordinary operating practices and any wastes generated will be disposed in accordance with applicable local, state, and federal regulations. In cases where a larger spill has occurred, but is confined to the Facility property, the SWPPP Contact will be notified immediately to determine the proper response. The SWPPP Contact will determine which outside agencies, if any, need to be notified in the event of a spill or release. Internal and external contact information is included on the table below:

Contact Name	Contact Telephone Number
SWPPP Contact: • Dennis Stropko - Health, Safety & Environmental Mgr.	Office: 440-287-7216 Mobile: 440-742-3467
Federal Agency Contact: • National Response Center (NRC)	800-424-8802
State Agency Contacts: • Illinois EPA • Illinois Emergency Management Agency (IEMA)	800-728-7860 217-782-7860
Local Agency Contacts: • Cook County Sherriff’s Emergency Management Agency • City of Chicago Office of Emergency Management	911/non-emergency:708-865-4766 312-746-9111

STORMWATER POLLUTION PREVENTION PLAN

4.6 Erosion and Sediment Controls

Due to the relatively flat gradient of the Facility and nature of the Facility coverage, the potential for soil erosion is minimal. The need to establish erosion and sediment controls will be evaluated on an ongoing basis and control measures will be implemented as warranted to comply with the General Permit requirements. The following practices to be employed to minimize observed areas of soil erosion and sediment accumulations include:

- Identified areas of soil erosion will be addressed through removal of sediment, re-vegetation, installation of pavement (concrete/asphalt) or rip-rap materials.
- Periodic sweeping of paved surfaces and roadways.
- Application of dust suppressants or water on paved and unpaved surfaces.
- Accumulated sediments to be routinely removed and properly disposed.
- Use of silt fence, straw bales and/or containment booms.

4.7 Management of Runoff

The Facility has implemented controls to divert, infiltrate, reuse, contain and otherwise reduce stormwater runoff in accordance with the BMPs described in this section. Stormwater runoff is managed so as to remain on the Facility with the exception of the sewer system associated with the historical steel making operations. There is no runoff of stormwater from the Facility to the Calumet River or other surface water bodies during storm events. Runoff to the Calumet River is averted by a concrete seawall berm. Runoff to the north and south is prevented by the presence of a soil berm.

4.8 Bulk Storage Containment Area Drainage

The General Permit does not authorize stormwater collected in containment areas where the stormwater becomes contaminated by direct contact with a spill or release of stored materials into the containment area unless treated. Currently, there are no containment areas at the Facility which are subject to the collection of stormwater. If containment areas are installed and there is a spill or release to a dry containment area, the spill is to be cleaned up in order to prevent contamination to any stormwater which subsequently collects in the containment area. When a spill or release to a dry containment area occurs, the spill is to be cleaned up in order to prevent contamination of any stormwater, which subsequently collects in the containment area. The following procedures are to be followed:

1. Spills shall be cleaned up and any contaminated water or solids shall be disposed of in

STORMWATER POLLUTION PREVENTION PLAN

accordance with Section 4.5 and the Facility's SPCC Plan.

2. Stormwater is to be treated prior to discharge from any containment area, when installed
3. Where the above procedures are followed, collected stormwater may be discharged following visual inspection and documentation in accordance with Section 6.2 to assure that stormwater contains no unnatural color, oil films, foams settleable solids or deposits.

4.9 Stormwater Management Practices

The following stormwater management practices (i.e., practices other than those that control the source of pollutants) are employed at the Facility:

COVERED STORAGE/NO EXPOSURE

- The electronic recycling operations of Regency Technologies is performed entirely indoors to prevent contact with stormwater.
- Motor block breaking operations and portions of ASR separation operations of Napuck Salvage are performed indoors to prevent contact with stormwater.
- Significant non-ferrous metal operations, including handling and storage of lead-acid batteries, are performed indoors to prevent contact with stormwater.
- New maintenance fluid tanks and drums are stored in secondary containment structures inside the maintenance area and other buildings under-roof to prevent contact with stormwater.
- Universal and PCB wastes (capacitors) are stored in appropriate containers inside buildings.
- Sand screening process is conducted indoors with raw material sand/fines storage outdoors.

CONTAINMENT

- Motor blocks and other oily scrap materials waiting to be processed are stored on concrete surfaces.
- Fueling operations are performed on concrete surfaces, except for some mobile equipment, which are fueled by a mobile refueler.

WASTE STORAGE

- Used oil is stored in drums, portable tanks and other containers and stored within secondary containment structures or impermeable surfaces until being removed off-site for recycling.
- Used oil absorbents are placed into drums and stored inside buildings.

STORMWATER POLLUTION PREVENTION PLAN

- Universal wastes, including batteries, lamps, and non-vehicle mercury devices generated during Facility maintenance activities or from scrap inspections, are accumulated in closed containers, stored inside buildings and recycled off-site.
- Non-metal, non-hazardous wastes are placed in closed dumpsters and disposed off-site.
- PCB wastes, including small capacitors and ballast generated during scrap inspection activities are accumulated within closed drums containing absorbent materials on the bottom and stored within buildings

5.0 EMPLOYEE TRAINING

To successfully implement this SWPPP, personnel are to be trained to conduct Facility operations according to the selected BMPs outlined in Sections 4.0. The following is to be performed to inform personnel at all levels of responsibility of the components and goals of the SWPPP. A record of training sessions will be maintained SWPPP (Appendix F).

Who is to receive training?

- All on-site personnel, including supervisory personnel, laborers and equipment operators receive awareness level training as related to their duties/responsibilities.

When is training to be performed?

- During initial job training
- Crew meetings, as needed
- Individual training, as needed
- Whenever any new stormwater management practices are implemented
- After the occurrence of a reportable release
- Annual training for SWPPP

Initial Employee Training Program Topics:

At a minimum all new hires shall receive training on the following:

- Inbound Scrap Source Control Program;
- Components and goals of the SWPPP;
- Spill response procedures and notifications; and
- Good housekeeping measures, inspections and BMPs

In addition, the following items also shall be discussed with new hires:

- Review equipment inspection, maintenance, and repair schedules and procedures
- Location of cleanup equipment, proper disposal location of various wastes, and postings of emergency contact numbers
- Describe potential spill areas and drainage routes

STORMWATER POLLUTION PREVENTION PLAN

- Discuss past spill events, why they happened and measure taken to avoid similar incidents from occurring again
- Conduct drills on spill cleanup procedures
- Identify container labels
- Explain recycling practices
- Demonstrate procedures for sealing valves and drums
- Make certain employees understand the consequences of violating company policies and/or procedures

Annual refresher topics:

- Review any environmental/health and safety incidents that occurred
- Review stormwater management controls and BMPs outlined in Section 4.0
- Announce any changes to the SWPPP

6.0 INSPECTIONS AND EVALUATIONS

6.1 Routine Facility Inspection

Once per quarter, the Facility will be inspected by a member of the Stormwater Pollution Prevention Team. At least once per calendar year, this inspection will be conducted during a rainfall event that could potentially result in a stormwater discharge, if possible. The visual inspection will include the following:

1. Inspect material handling and storage areas for evidence of, or the potential for, pollutants to enter stormwater and discharge off-site.
2. Inspect structural BMPs for any damage or erosion and to ensure they are operating effectively. Special attention is to be given to:
 - Concrete seawall berm along the Calumet River frontage
 - Containment areas
 - Soil berm along the northern Facility property boundary; at NSW block storage area, and at RMT sand/fines staging areas
3. Inspect roads and stockpile storage areas for erosion.
4. Inspect containment areas for and secondary containment structures for tanks and drums that are exposed to stormwater accumulation to determine whether they are required to be drained.

The results of the routine Facility inspection will be documented on the Routine Facility Inspection Form contained in Appendix G and will include the following:

- The inspection date and time;
- The name(s) and signature(s) of the inspector(s);
- Weather information and a description of any discharges occurring at the time of the inspection;
- Any previously unidentified discharges of pollutants from the site;
- Any control measures needing maintenance or repairs;
- Any failed control measures that need replacement;
- Any incidents of noncompliance observed; and,
- Any additional control measures needed to comply with the General Permit requirements.

STORMWATER POLLUTION PREVENTION PLAN

6.2 Bulk Storage Containment Area Drainage

Currently, there are no containment areas at the Facility which are subject to the collection of stormwater. If bulk storage containment areas are constructed, the containment area(s) will be drained following the procedures identified in Section 4.8. Records of inspections and drainage events will be recorded on the Containment Inspection and Drainage Record. Completed records will be maintained in Appendix H.

6.3 Quarterly Visual Assessment of Stormwater Discharges

Quarterly visual monitoring for stormwater discharge along the outside portion of the concrete seawall berm to the Calumet River shall be performed during a qualifying rainfall event. If a breach in the berm is noted which results in a stormwater discharge to the river, a sample of the discharge shall be collected and visually observed for evidence of pollution. Evidence of pollution includes any “unnatural” color, odor, turbidity, floatable material, oil sheen, or other indicators. If evidence of pollution is observed, a stormwater sample must be collected and analyzed for the following parameters:

- pH
- Total Suspended Solids
- Chemical Oxygen Demand
- Total Recoverable Aluminum
- Total Copper
- Total Recoverable Iron
- Total Lead
- Total Mercury
- Total Zinc
- PCBs

Documentation of quarterly visual discharge inspections shall be maintained on the Quarterly Visual Monitoring Log contained in Appendix I. If no breach in the berm is observed and there is no stormwater discharge, a “**No Discharge**” observation shall be recorded on the log and the person that conducted the monitoring shall sign and date the form. If a discharge is noted, collect a sample, observe the sample for evidence of pollution and document observations on the Quarterly Visual Monitoring Log. If evidence of pollution is noted in the collected sample, additional sample volume is required to be collected and submitted to analytical laboratory for analysis of the above referenced parameters.

No quantitative stormwater sampling data for the Facility has been collected to date. If stormwater samples are collected for laboratory analysis, copies of the laboratory analytical report and sample collection procedures are to be maintained in Appendix D.

STORMWATER POLLUTION PREVENTION PLAN

6.4 Benchmark Monitoring

The General Permit requires benchmark monitoring of stormwater discharge be performed quarterly. The data obtained is to be used to evaluate the overall effectiveness of Facility control measures being implemented, and to assist in knowing if corrective action(s) may be necessary to achieve the established benchmark levels for the Facility’s sector-specific and site-specific monitoring parameters. The quarterly benchmark monitoring of stormwater discharge sampling is to be performed in the event that stormwater from the Facility is discharged off the property. In the event that benchmark monitoring is necessary, it shall be performed as follows:

- Benchmark monitoring sample collection is to be performed during daylight hours on stormwater samples collected within one hour of a discharge from a storm event equal to or greater than 0.25 inch in 24 hours which occurs at least 72 hours from a previous discharge.
- Samples are to be collected in general accordance with the “Industrial Storm Water Monitoring and Sampling Guide” (EPA March 2009, Final Draft).
- The samples shall be shipped the same day as collected via overnight carrier to an accredited IEPA laboratory following standard chain-of-custody procedures.
- The laboratory shall analyze the samples for the sector-specific and site-specific parameters consistent with the methodologies as outlined in 40 CFR 136 for the parameters listed in Section 6.3:

Following completion of the four quarterly benchmark monitoring events, an average of the analytical results for each parameter shall be calculated and compared to the IEPA-established benchmark values. If the average of the four monitoring values for any parameters does not exceed the established benchmark level, no further benchmark monitoring is required. If any average values exceed the established benchmark level, then corrective actions (i.e., design, installation and implementation of new and/or additional control measures) must be implemented and the benchmark monitoring must continue for any parameter(s) for which the average value exceeded the benchmark level.

Below are the established benchmark levels applicable to the Facility’s stormwater discharge:

Parameter	Benchmark Level (mg/L)
chemical oxygen demand	120
total suspended solids	100
total recoverable aluminum	0.75

STORMWATER POLLUTION PREVENTION PLAN

Parameter	Benchmark Level (mg/L)
total copper	0.0636*
total recoverable iron	1.0
total lead	0.0816*
total zinc	0.117*
total mercury	0.0024
PCBs	0.00127
pH	6.0 – 9.0 s.u. ⁽¹⁾

* = Hardness-specific value (>250 mg/L) based on IEPA data obtained from the Calumet River at station DT-38 for hydraulic unit 0712000710.

s.u. = Standard units.

⁽¹⁾ = To be measured in field at time of sample collection.

Given that the segment of the Calumet River is impaired by total mercury and PCBs without an IEPA-established Total Maximum Daily Load, sampling and analysis of stormwater discharge for those constituents shall be performed on an annual basis, in the event of a discharge, to comply with the requirements of Part C.2 of the General Permit. The sampling and analysis of stormwater discharge for these parameters must be performed on an annual basis, in the event of a discharge, regardless of whether or not the benchmark levels have been achieved.

6.5 Annual Compliance Evaluation

An annual compliance evaluation is to be conducted to verify that this SWPPP accurately reflects Facility conditions and effectively controls potential releases of pollutants into the stormwater. The annual evaluation is to consist of a complete inspection of the Facility and review of the SWPPP to evaluate whether practices and controls to minimize stormwater pollution are effective and properly implemented or whether additional controls are necessary. The following steps will provide guidance for conducting the annual compliance evaluation and SWPPP review:

1. Perform a complete Facility Inspection

- Inspect stormwater drainage areas for evidence of pollutants
- Determine if practices or controls are in place as identified in the SWPPP
- Evaluate the effectiveness of BMPs. Evaluate whether the controls described in the SWPPP are sufficient to minimize stormwater pollution or if additional controls are necessary
- Verify operational guidelines and other standard operating procedures are being followed

- Conduct inventory review and visually inspect equipment needed to implement the SWPPP such as spill response kits, drip pans, and tarps

2. Review SWPPP

- Review and update personnel and contact information in Section 2.1
- Determine if Facility information presented in Section 2.4 and Section 3.0 are up-to-date and reflects current Facility conditions and operations
- Determine if changes to the selected BMPs (Section 4.0) based on results of inspection and changes to the training program (Section 5.0) are needed

3. Evaluate compliance

- Determine if additional controls are needed
- Verify compliance with employee training program (Section 5.0)
- Check the General Permit (Appendix A) expiration date
- Verify compliance with record keeping requirements (Section 7.0)

4. Complete the Annual Inspection Report (Appendix J)

- The annual report is to include documentation of events that may have resulted in pollutants discharged to stormwater (i.e., spill, containment breach, berm breach, etc.) including corrective actions taken
- The annual report is to include a summary of changes to the Facility that resulted in significant changes to the SWPPP
- The annual report is to be certified and signed by the authorized Facility employee conducting the inspection
- Send the Annual Inspection Report to IEPA on or before August 15th of each year via email to: epa.indannualinsp@illinois.gov
- Maintain complete IEPA Annual Inspection Report along with delivery confirmation in Appendix J for the duration of the General Permit and for three years after the date of the report.

5. Revise SWPPP

- If required, make revisions to the SWPPP in accordance with Section 7.3

6. Perform Corrective Actions

- Define schedule for completion
- Implement changes within twelve weeks of the inspection
- Document completion of corrective action for all noted deficiencies and maintain in Appendix J with applicable report.

7.0 CORRECTIVE ACTIONS

7.1 Conditions Requiring SWPPP Review and Revision

The SWPPP must be reviewed when any of the following conditions occur:

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by the Permit).
- Control measures are not stringent enough for the discharge to meet applicable water quality standards or conditions of the Permit.
- A required control measure was never installed, was installed incorrectly, or not in accordance with the Permit or is not being properly operated or maintained.
- Visual observations indicate signs of stormwater pollution (e.g. unusual color, odor, turbidity, floatable material, settled solids, suspended solids, foam and oil sheen) in discharge.
- The average of four quarterly sampling results exceeds any applicable benchmark monitoring level. If less than four samples have been taken, but the results are such that an exceedance of the four quarter average is mathematically certain (i.e., if the sum of the quarterly sample results to date is more than four times the benchmark monitoring concentration).
- Construction or a change in design, operation, or maintenance at the Facility that modifies the type or concentration of pollutants discharged in stormwater, or increases the quantity of pollutants discharged.

If any of the above conditions occur, immediate reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up contaminated surfaces, must be implemented. If additional changes are necessary, new or modified control measures or repairs completed to existing controls, must be installed and made operational prior to the next storm event and within 14 days of the time of the discovery of the condition. A schedule for completing the installation of a new control measure or making repairs to an existing control measure must be identified and the work completed as soon as practical after the 14-day timeframe, but no longer than 45 days after discovery of the condition.

7.2 Corrective Action Documentation

Documentation of the corrective actions implemented or to be implemented as a result of the conditions identified in Section 7.1 are to be made on the Corrective Action Form contained in Appendix K.

STORMWATER POLLUTION PREVENTION PLAN

The following information, where applicable, must be included on the Corrective Action Form:

- Identification and description of the condition triggering the need for corrective action. For any spills or leaks, include the following information: a description of the incident including material, date/time, amount, location and reason for spill, and any leaks, spills, or other releases that resulted in discharges of pollutants to waters of the State.
- Date the condition was discovered.
- For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any measures implemented to prevent reoccurrence of similar release/spill.

The documentation of corrective actions implemented or to be implemented as a result of the conditions identified in Section 7.1 are to be made on the Corrective Action Form within 14 days from the time of discovery.

STORMWATER POLLUTION PREVENTION PLAN

8.0 SUMMARY OF SWPPP REQUIREMENTS

8.1 Recordkeeping and Reporting

The following records related to compliance with the General Permit are to be retained for the duration of the permit or for a period of at least three years from the date of the record:

Record	Storage Location
Stormwater Pollution Prevention Plan; signed and up-to-date	Facility office (hard copy in binder) and Company computer system (electronic)
Completed Notice of Intent	Appendix A of the SWPPP
IEPA Discharge Authorization Letter (General Permit)	Appendix A of the SWPPP
Non-Stormwater Assessment & Certification	Appendix E of the SWPPP
Spill Report Forms	Facility SPCC Plan
Preventative Maintenance Records	Facility offices and/or Maintenance Building
Employee Training Records	Appendix F of the SWPPP
Routine Facility Inspection Records	Appendix G of the SWPPP
Containment Drainage & Inspection Records	Appendix H of the SWPPP
Stormwater Quarterly Visual Monitoring Logs	Appendix I of the SWPPP
Quantitative Stormwater Monitoring Reports and Supporting Documentation	Appendix D of the SWPPP
IEPA Annual Inspection Reports	Appendix J of the SWPPP
Corrective Action Documentation	Appendix K of the SWPPP
SWPPP Revisions/Historical Plan Copies	Facility office and summary in Appendix L of the SWPPP

8.2 SWPPP Implementation

The following is a summary of SWPPP implementation requirements:

SWPPP Requirement	Frequency
Implement Stormwater Control Measures per Section 4.0	<ul style="list-style-type: none"> • Immediately and continually
Conduct Employee Training per Section 5.0	<ul style="list-style-type: none"> • New Hire Training (within 60 Days) • Annual Refresher • As Needed
Inspect bulk storage containment areas and complete Containment Inspection and Drainage Record per Section 4.8 and Section 6.2 (APPLICABLE ONLY IF PRESENT)	<ul style="list-style-type: none"> • After Rain Event and prior to discharge
Complete Routine Facility Inspection and Quarterly Visual Stormwater Monitoring per Section 6.1 and Section 6.3, respectively	<ul style="list-style-type: none"> • Quarterly; One inspection to be completed annually during a rain event

STORMWATER POLLUTION PREVENTION PLAN

SWPPP Requirement	Frequency
Perform SWPPP compliance evaluation and submit inspection report to IEPA per Section 6.4	<ul style="list-style-type: none"> • Annually, prior to August 15th
Conduct and implement corrective actions per Section 7.0	<ul style="list-style-type: none"> • When applicable and immediately upon discovery of condition per Section 7.1
Pay annual stormwater General Permit fee to IEPA (IEPA sends invoice)	<ul style="list-style-type: none"> • Prior to August 15th of each year
Revise and update the SWPPP per Section 8.3	<ul style="list-style-type: none"> • Within 30 Days <ul style="list-style-type: none"> ○ After change in operations ○ After reportable spill event ○ After a SWPPP review indicates changes are needed
Complete Spill Reporting Form per Section 4.5 and Facility SPCC Plan	<ul style="list-style-type: none"> • Whenever a significant spill event occurs
Submit Notice of Termination to IEPA	<ul style="list-style-type: none"> • Within 30 Days <ul style="list-style-type: none"> ○ A change in ownership or operational control of the Facility ○ Operations at the Facility have ceased and there are no discharges or no stormwater exposure to industrial activities ○ Coverage has been obtained under an individual NPDES permit

8.3 SWPPP Amendments

The SWPPP shall be amended whenever:

1. There is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants;
2. The SWPPP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges;
3. The recognition of deficiencies or needed changes discovered as a result of a Facility inspection; and/or
4. Annual compliance evaluation (Section 6.4) indicates changes are needed.

Revisions to the SWPPP are to be documented. A history of revisions since the initial SWPPP development date, as stated on the title page, is to be maintained in Appendix L . The revision

STORMWATER POLLUTION PREVENTION PLAN

number is to be updated on the revised pages. The updated pages are to be inserted in their proper place in the SWPPP and the obsolete pages are to be placed in Appendix L. Revisions to the SWPPP are to be logged in the “History of Revisions” log included in Appendix L.

Amendments to the SWPPP are to be made within thirty days and are to be submitted to IEPA via email at epa.indlr00swppp@illinois.gov.

APPENDICES

Appendix A.	General Permit & Supporting Documentation
Appendix B.	Reserved
Appendix C.	Facility Figures
Appendix D.	Quantitative Stormwater Sampling Data
Appendix E.	Non-Stormwater Discharge Certification
Appendix F.	Employee Training Documentation
Appendix G.	Routine Facility Inspection Forms
Appendix H.	Containment Inspection and Drainage Records
Appendix I.	Quarterly Visual Monitoring Logs
Appendix J.	IEPA Annual Inspection Reports
Appendix K.	Corrective Action Form
Appendix L.	SWPPP Revision History

APPENDIX A

General Permit & Supporting Documentation

General NPDES Permit No. ILR00

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276
www.epa.illinois.gov

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

**General NPDES Permit
For
Storm Water Discharges from Industrial Activities**

Expiration Date: March 31, 2022

Issue Date: April 5, 2017

Effective Date: April 5, 2017

Discharges authorized by this General Permit: In compliance with the provisions of the Illinois Environmental Protection Act, the Illinois Pollution Control Board Rules and Regulations (35 Ill. Adm. Code, Subtitle C, Chapter 1) and the Clean Water Act, the following discharges may be authorized by this permit in accordance with the conditions herein:

Discharges of storm water associated with industrial activities, as defined and limited herein. Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.

This general permit regulates only storm water discharges from a facility. Other discharges such as process wastewater or cooling water shall be regulated by other NPDES permits.

Receiving waters: Discharges may be authorized to any surface water of the State.

To receive authorization to discharge under this general permit, a facility operator must submit a Notice of Intent form and additional documentation as required in Part D of this permit. Authorization, if granted, will be by letter and include a copy of this permit.



Alan Keller, P.E.

Manager, Permit Section

Division of Water Pollution Control

General NPDES Permit No. ILR00

<u>CONTENTS OF GENERAL PERMIT ILR00</u>	<u>Page</u>
A. Applicability of this General Permit	2
B. Types of Discharges Not Covered by this Permit	4
C. Special Conditions	5
D. Application Requirements	6
E. Storm Water Pollution Prevention Plan (SWPPP or Plan)	8
F. Control Measures and Discharge Limitations	13
G. Inspections	16
H. Corrective Actions	17
I. Construction Authorization	18
J. Monitoring	19
K. Reporting	21
L. Termination of Coverage Under this Permit	22
M. Definitions	23
Attachment H	25
Attachment 1 Sector Specific Requirements	1-1
Attachment 2 Activities Covered	2-1
Attachment 3 Calculating Hardness in Freshwater	3-1

A. APPLICABILITY OF THIS GENERAL PERMIT

This permit is applicable to storm water discharges associated with any primary industrial activity and any associated industrial activity from areas (except offsite access roads and rail lines not on property owned or controlled by the permittee) where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water in the State of Illinois from the facilities listed below.

1. Discharges of storm water from facilities with discharges that are subject to new source performance standards or toxic pollutant effluent standards under 40 CFR Chapter 1, Subchapter N, except:
 - a. Discharges subject to new source performance standards or toxic pollutant effluent standards and described in paragraph Part A.2 which do not have materials or activities exposed to storm water. Facilities with these discharges shall submit a No Exposure Certification form to the Illinois Environmental Protection Agency (Illinois EPA or Agency).
 - b. Discharges subject to storm water effluent limitations guidelines listed in B.1 of this permit.
2. Discharges of storm water from facilities in the following SIC codes:

SIC 20	(Food and kindred products manufacturing or processing)
SIC 21	(Tobacco products)
SIC 22	(Textile mill products)
SIC 23	(Apparel and other finished products made from fabrics and similar materials)
SIC 24	(Lumber and wood products except furniture)
SIC 2434	(Wood kitchen cabinets)
SIC 25	(Furniture and fixtures)
SIC 26	(Paper and allied products)
SIC 265	(Paperboard containers and boxes)
SIC 267	(Converted paper and paperboard products)
SIC 27	(Printing, publishing, and allied industries)

General NPDES Permit No. ILR00

SIC 28	(Chemicals and allied products)
SIC 283	(Drugs)
SIC 285	(Paints, varnishes, lacquers, enamels, and allied products)
SIC 29	(Petroleum refining and related industries), except discharges subject to 40 CFR 419
SIC 30	(Rubber and miscellaneous plastics products)
SIC 31	(Leather and leather products)
SIC 311	(Leather tanning and finishing)
SIC 32	(Stone, clay, glass, and concrete products)
SIC 323	(Glass products, made of purchased glass)
SIC 33	(Primary metal industries)
SIC 34	(Fabricated metal products, except machinery and transportation equipment)
SIC 3441	(Fabricated structural metal)
SIC 35	(Industrial and commercial machinery and computer equipment)
SIC 36	(Electronic and other electrical equipment and components, except computer equipment)
SIC 37	(Transportation equipment)
SIC 373	(Ship and boat building and repairing)
SIC 38	(Measuring, analyzing, and controlling instruments; photographic, medical, and optical goods; watches and clocks)
SIC 39	(Miscellaneous manufacturing industries)
SIC 4221-25	(Farm products warehousing and storage, refrigerated warehousing and storage, general warehousing and storage)

This permit is also applicable to any additional storm water discharges that are not otherwise required to obtain an NPDES permit but are comingled or mixed with discharges authorized by this permit.

3. Facilities classified as SIC 10-14 (Mineral Industry) including active or inactive mining operations and oil and gas exploration, production, processing, treatment operations, or transmission facilities, except discharges subject to 40 CFR 434, 436, or 440 or any discharges subject to general permit number ILG84. This permit does not authorize any discharge associated with the hydraulic fracturing process if additional chemicals are utilized in the process.
4. Landfills, land application sites (excluding land application sites which utilize agricultural land), and open dumps that receive or have received any industrial wastes (waste that is received from any of the facilities described in 40 CFR 122.26(b) (14)).
5. Facilities involved in the recycling of materials including metal scrapyards, battery reclaimers, salvage yards, automobile junkyards and concrete recycling facilities including but not limited to SIC 5015 (Used motor vehicle parts) and SIC 5093 (Scrap and waste materials)
6. Transportation facilities listed below with areas involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, or airport deicing operations (unless individual permit required by 40 CFR 449):

SIC 40	(Railroad transportation)
SIC 41	(Local and suburban transit and inter-urban highway passenger transportation)
SIC 42	(Motor freight transportation and warehousing) except SIC 4221-4225 (Farm product warehousing and storage, refrigerated warehousing and storage, general warehousing and storage)
SIC 43	(United States Postal Service)
SIC 44	(Water transportation)
SIC 45	(Transportation by air)
SIC 5171	(Petroleum bulk stations and terminals-wholesale)
7. Treatment Works treating domestic sewage with a design flow of 1.0 mgd or more including sludge or wastewater treatment devices or systems used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, and land dedicated to sludge disposal located within the confines of the facility. This requirement excludes off-site sludge management lands, farm lands, and gardens.
8. Discharge of storm water from non-classified facilities designated by the Agency as requiring a permit. See Sector AD of Attachment 1 and 2.

General NPDES Permit No. ILR00

9. Allowable non-storm water discharges:

- a. The following are the only non-storm water discharges authorized under this permit, provided that all discharges comply with the discharge limitations set forth in Part F:
 - i. from fire-fighting activities.
 - ii. Fire hydrant flushings.
 - iii. Waters used to wash vehicles without the use of detergents or hazardous cleaning products.
 - iv. Waters (without added chemicals) used to control dust.
 - v. Potable water sources including waterline flushings and fire sprinkler flushing.
 - vi. Irrigation drainage.
 - vii. Landscape watering, provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling.
 - viii. Routine external building wash down, including power washing, which does not use detergents or hazardous cleaning products.
 - ix. Discharges Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents or hazardous cleaning products are not used.
 - x. Uncontaminated condensate from air conditioners, coolers, other compressors, and from the outside storage of refrigerated gases or liquids.
 - xi. Uncontaminated ground water or spring water.
 - xii. Foundation or footing drains where flows are not contaminated with process materials.
 - xiii. Incidental windblown mist from cooling towers but not intentional discharges from the cooling tower.
 - xiv. Discharges from the spray down of lumber and wood product storage where no chemical additives are used and no chemicals are applied to the wood during storage. Such discharges are applicable only to Sector A facilities, listed in Attachment 1, provided the non-storm water component of the discharge is in compliance with Part F.2 of this permit.
- b. Except as provided in Part A.9.a above, all discharges covered by this permit shall be composed entirely of storm water. Discharges of material other than storm water must be in compliance with an NPDES permit (other than this permit) issued for the discharge.

B. TYPES OF DISCHARGES NOT COVERED BY THIS PERMIT

This permit is not applicable to storm water discharges from the facilities listed below. Storm water discharges from these facilities must be authorized by an individual NPDES permit or alternative general NPDES permit.

1. Discharges subject to storm water effluent limitations guidelines in the following categories;

Cement Manufacturing (40 CFR 411)
Feedlots (40 CFR 412)
Fertilizer Manufacturing (40 CFR 418)
Petroleum Refining (40 CFR 419)
Phosphate Manufacturing (40 CFR 422)
Steam Electric (40 CFR 423)
Coal Mining (40 CFR 434)
Mineral Mining and Processing (40 CFR 436)
Ore Mining and Dressing (40 CFR 440)
Asphalt Emulsion (40 CFR 443).
Airport De-icing (40 CFR 449)

2. Hazardous waste treatment, storage, or disposal facilities.
3. Steam electric power generating facilities, including coal handling sites.
4. Construction site activity including clearing, grading, and excavation activities.
5. Storm water discharges associated with industrial activity from facilities with an existing NPDES individual or general permit for the storm water discharges.
6. Storm water discharges associated with industrial activity which are identified by the Agency as possibly causing or contributing to a violation of water quality standards.

General NPDES Permit No. ILR00

7. Storm water discharges associated with inactive mining or inactive oil and gas operations occurring on Federal lands where an operator cannot be identified.
8. Storm water discharges to any receiving water identified under 35 Ill. Adm. Code 302.105(d) (6).
9. Storm water discharges that the Agency determines are not appropriately covered by this general permit.
10. Storm water or other discharges of hazardous substances or oil resulting from an on-site spill.
11. Discharges of storm water collected in containment areas at bulk storage and hazardous waste facilities where the storm water becomes contaminated by direct contact with a spill or release of stored materials into the containment area.

C. SPECIAL CONDITIONS

1. Discharging pollutants for which a water body is impaired with an approved TMDL:
 - a. The Permittee must determine whether the facility discharges storm water, either directly or indirectly, to the immediate stream segment which is an impaired water body, i.e., a water body included on the most recent U.S. EPA-approved Clean Water Act Section 303(d) list of impaired water bodies. This determination must be made within 6 months of the effective date of this permit, and must be documented in the facility's SWPPP or storm water records. Information on impaired waters is contained in the Agency website below:

<http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/303d-list/>

- b. If the Permittee determines that it discharges storm water to the immediate stream segment which is an impaired water body, the Permittee must identify if there is a U.S. EPA-approved TMDL that establishes waste load allocations for discharges of pollutant(s) of concern to the impaired water body. This determination must be made within 6 months of the effective date of this permit, and must be documented in the facility's SWPPP or storm water records. Information on TMDLs is contained in the Agency website below:

<http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/index>

- c. If the Permittee determines that there is a U.S. EPA-approved Total Maximum Daily Load (TMDL) for a water body to which the facility discharges storm water, the permittee must determine if there is a Waste Load Allocation (WLA) applicable to the facility's storm water discharges in the approved TMDL.
 - d. If the Permittee determines that it is subject to an applicable (WLA), the following requirements apply:

- i. The Permittee must calculate/quantify the facility's estimated current loading(s) of the pollutant(s) of concern to the impaired water body. This may be done using monitoring data and/or through modeling.
 - ii. The Permittee must determine if, based on the estimated current loading(s), it is meeting the applicable WLA with current storm water controls and practices. If loading reductions are needed in order to achieve the applicable WLA, the permittee must update its SWPPP to incorporate Best Management Practices (BMPs) or other storm water control measures that will be implemented to reduce loadings of the pollutant(s) of concern and achieve the applicable WLA.

The SWPPP must specifically identify the additional or enhanced BMPs or control measures necessary to reduce loadings of the pollutant(s) of concern, and must also document/summarize modeling and/or other calculations used to estimate that the practices and control measures will reduce loadings to achieve the applicable WLA.

- iii. The SWPPP must define a schedule for implementing the control measures identified necessary to meet the WLA. The schedule for implementing the planned BMPs and/or control measures above must be set out so that the management practices and control measures are in place and operational as quickly as possible. Interim milestones should be established to facilitate assessment of progress in implementing the control measures and gauging progress toward meeting the applicable WLA.

General NPDES Permit No. ILR00

- iv. The Permittee must incorporate into the SWPPP a monitoring/assessment component to evaluate if loading reductions are being achieved as planned in the SWPPP.
 - v. The SWPPP may incorporate an adaptive management component, under which the SWPPP can be updated or improved as circumstances allow.
2. Discharges to impaired waters without an approved TMDL:

The Permittee shall monitor all pollutants for which the waterbody is impaired and are associated with the industrial site activity for which a standard analytical method exists (see 40 CFR Part 136) once per year at each outfall (except substantially identical outfalls) discharging storm water to impaired waters without an approved TMDL

3. Additional Monitoring required by Illinois EPA:

The Agency may require additional monitoring. Any such notice will briefly state the reasons for monitoring, locations, and parameters to be monitored, frequency and period of monitoring, sample types, and reporting requirements.

D. APPLICATION REQUIREMENTS

1. Any discharger of storm water associated with industrial activities seeking coverage under this general permit shall provide the Agency with the following information:
- a. i. A completed electronic submission of the Agency Notice of Intent form, see Part D.6; or
 - ii. A completed electronic submission of the U.S. EPA Form 1, including form 2F and quantitative sampling data when required by Part D.2. See Part D.6.
 - b. An electronic copy of the Storm Water Pollution Prevention Plan (SWPPP or plan) that has been prepared for the industrial site in accordance with Part E of this permit. The electronic copy shall be submitted to the Agency at the following email address: epa.indilr00swppp@illinois.gov.
 - c. For a proposed industrial site, or a proposed modification of an industrial site, an electronic copy of the consultation letters from the Illinois Historic Preservation Agency (IHPA) and the Illinois Department of Natural Resources (IDNR) concerning historic preservation and endangered species compliance. See Part D.6.
2. Quantitative sampling data as required by U.S. EPA Form 2F for storm water discharges from the following existing or new facilities is required to be submitted:
- a. Facilities subject to reporting requirements under Section 313 of EPCRA for chemicals classified as "Section 313 water priority chemicals": Storm water discharges that come into contact with any equipment, tank, container, or other vessel or area used for storage of a Section 313 water priority chemical, or located at a truck or rail car unloading area where a Section 313 water priority chemical is handled.
 - b. Facilities classified as SIC 33 (Primary Metal Industries).
 - c. Active or inactive landfills, land application sites, or open dumps without a stabilized final cover which have received any industrial wastes.
 - d. Wood treatment facilities: Storm water discharges from areas that are used for wood treatment, wood surface application, or storage of treated or surface protected wood.
 - e. Coal pile runoff at industrial facilities other than coal mines or steam electric power generating facilities.
 - f. Battery reclaiming facilities: Storm water discharges from areas used for storage of lead acid batteries, reclamation products or waste products, and areas used for lead acid battery reclamation.
 - g. Airports not subject to the requirements of 40 CFR 449 (less than 1,000 aircraft departures per year) storm water discharges from aircraft or airport deicing areas.
 - h. Meat packing plants, poultry packing plants, and facilities that manufacture animal and marine fats and oils.

General NPDES Permit No. ILR00

- i. Facilities classified as SIC 28 (Chemicals and Allied Products) and SIC 30 (Rubber and Miscellaneous Plastics Products): Storm water discharges that come into contact with solid chemical storage piles.
 - j. Automobile junkyards: Storm water discharges exposed to over 250 auto/truck bodies with drivelines, over 250 drivelines, or any combination thereof (in whole or in parts); over 500 auto/truck units (bodies with or without drivelines in whole or in parts); or over 100 units per year are dismantled and drainage or storage of automotive fluids occurs in areas exposed to storm water.
 - k. Lime manufacturing facilities: Storm water discharges that have come into contact with lime storage piles.
 - l. Cement manufacturing facilities and cement kilns: Storm water discharges other than those subject to 40 CFR 411.
 - m. Ready-mixed concrete facilities: Sampling data is not required for new ready-mixed concrete facilities or for relocated ready-mixed concrete facilities. Schedule 2-F is not required for existing or previously permitted facilities.
 - n. Ship building and repairing facilities.
 - o. Other industrial activities when requested by the Agency.
3. When a facility has two or more outfalls that, based on consideration of features and activities within the area drained by the outfall, the Permittee reasonably believes discharge substantially identical effluents, the Permittee may sample the effluent of one such outfall and report that quantitative data also applied to the substantially identical outfalls. If the applicant is requesting approval to sample a representative outfall, identification of all storm water outfalls considered to be substantially identical along with the outfall being used to represent such outfalls and appropriate justification must be provided with the application.
4. Existing facilities application/Notice of Intent requirements:
- a. For existing facilities with an individual NPDES permit covering storm water associated with industrial activity, or those facilities that have previously submitted an application for an individual permit and not yet received a permit, the Permittee/Applicant may elect to seek coverage under this general permit in place of obtaining an individual permit. To be considered for coverage the Permittee/Applicant is required to submit the information, in Part D.1.
 - b. For existing facilities that have submitted a NOI for coverage of any discharge of storm water associated with industrial activities under this general permit a new or revised NOI will not be required unless the industrial activity at the site has substantially changed.
5. For new facilities, the NOI and required information shall be submitted 180 days prior to the date on which the discharge is to commence unless permission for a later date has been granted by the Agency. Mobile facilities (such as concrete or asphalt batch plants) shall apply at least 30 days prior to discharge.
6. The required information from Part D.1.a.i and ii and D.1.c shall be submitted to one of the following addresses:
- a. Electronic submission shall be submitted to:

epa.indilr00swppp@illinois.gov
 - b. If electronic submittal is unavailable the required information should be submitted to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Permit Section #15
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
7. Authorization: Owners or operators must submit either an NOI in accordance with the requirements of this permit or an application for an individual NPDES Permit to be authorized to discharge under this General Permit. Authorization, if granted, will be by letter from the Agency and include a copy of this Permit. Upon review of an NOI, the Illinois EPA may deny coverage under this Permit and require submittal of an application for an individual NPDES Permit.

General NPDES Permit No. ILR00

- a. Automatic Continuation of Expired General Permit: Except as provided in D.7.b below, when this General Permit expires the conditions of this permit shall be administratively continued until the earliest of the following:
 - i. 150 days after the new General Permit is issued;
 - ii. The Permittee submits a Notice of Termination (NOT) and that notice is approved by Illinois EPA;
 - iii. The Permittee is authorized for coverage under an individual permit or the renewed or reissued General Permit;
 - iv. The Permittee's application for an individual permit for a discharge or NOI for coverage under the renewed or reissued General Permit, is denied by the Illinois EPA;
 - v. Illinois EPA issues a formal permit decision not to renew or reissue this General Permit. If not renewed this expired General Permit shall be automatically administratively continued after such formal permit decision.
 - b. Duty to Reapply:
 - i. If the Permittee wishes to continue a discharge activity regulated by this General Permit, the Permittee must apply for new permit coverage before the expiration of the administratively continued period specified in D.7.a above.
 - ii. If the Permittee reapplies in accordance with the provisions of D.7.a above, the conditions of this General Permit shall continue in full force and effect under the provisions of 5 ILCS 100/10-65 until the Illinois EPA makes a final determination on the application or NOI.
 - iii. If the Agency makes a formal decision not to renew this General Permit, the Permittee will have 150 days to supplement any previously submitted application or NOI after the date of the formal decision by Illinois EPA.
 - iv. Standard Condition 2 of Attachment H is not applicable to this General Permit.
8. Facilities which discharge storm water associated with industrial activity to a municipal separate storm sewer system (MS4) shall notify the MS4 owner at the time of application to the Agency, and shall provide the MS4 owner with a copy of their application if requested.

E. STORM WATER POLLUTION PREVENTION PLAN (SWPPP or Plan)

1. A SWPPP shall be developed by the Permittee and submitted to the Agency for each facility covered by this permit. The Plan shall identify potential sources of pollution which may be expected to affect the quality of storm water discharges associated with the industrial activity at the facility. The Plan shall describe the selection, design, and installation of control measures which are to be used to reduce the pollutants in storm water discharges associated with industrial activity at the facility to comply with the requirements of this permit. An electronic copy of the Plan shall be submitted to the Agency at the following email address: epa.indlir00swppp@illinois.gov. The Permittee shall submit any modified plans to the Agency, when such modification includes substantive changes to the Plan, or modification is made to the Plan to ensure compliance with this permit. The SWPPP shall be implemented by the Permittee on an on-going basis.
 - a. Waters not classified as impaired pursuant to Section 303(d) of the Clean Water Act:

The SWPPP shall be designed for a storm event equal to or greater than a 25-year 24-hour rainfall event unless federal regulations allow for a less restrictive rainfall event.
 - b. Waters classified as impaired pursuant to Section 303(d) of the Clean Water Act:

For any site which has a current NPDES permit and discharges directly or indirectly to an impaired water identified in the Agency's 303(d) listing, and if any parameter in the subject discharge has been identified as the cause of impairment, the SWPPP shall be designed for a storm event equal to or greater than a 25-year 24-hour rainfall event. If required by federal regulations, the SWPPP shall adhere to a more restrictive design criteria.

General NPDES Permit No. ILR00

- c. If the Permittee discharges to an impaired water with an established U.S. EPA approved or established TMDL and the SWPPP has been modified in accordance with Part E.1.b above, Illinois EPA will review the SWPPP and inform the Permittee in writing if additional pollutant control measures for rainfall events are necessary for the discharge to be consistent with the assumptions of any available waste load allocations in the TMDL or if coverage under an individual permit is necessary.
2. Plans for new facilities shall be completed prior to submitting an NOI to be covered under this permit. An electronic copy of the SWPPP shall be submitted to the Agency at the following email address: epa.indlr00swppp@illinois.gov. Plans shall provide for compliance with the effluent limitations in Part F of this permit prior to operation of any industrial activity to be covered under this permit. [Note: If the plan has already been required to be developed under a previous permit it shall be updated and maintained in accordance with all requirements of this Special Condition within 180 days of the effective date of this permit.]. The owner or operator of an existing facility with storm water discharges covered by this permit shall submit a copy of the Plan to the Agency and shall make a copy of the Plan available to the Agency during any inspection of the site.

Facilities which discharge to MS4 shall also make a copy available to the operator of the municipal system at any reasonable time upon request.

3. The Permittee may be notified in writing by the Agency at any time that the Plan does not meet the requirements of this permit. After such written notification, the Permittee shall modify the Plan and shall submit a revised plan to the Agency with the requested changes that have been made. Unless otherwise provided, the Permittee shall have 30 days after such notification to make the changes.
4. The Permittee shall modify the SWPPP based on the corrective actions and deadlines required in Part H.2 and that the Permittee documented in Part H.2, such that the triggering conditions for corrective action in Part H.1 do not reoccur. The Permittee shall also modify the SWPPP whenever there is a change in construction, operation, or maintenance which may affect the discharge of concentrations or quantities of pollutants to the waters of the United States. SWPPP modifications must be signed in accordance with Attachment H.
5. The Plan shall provide a description of potential sources which may be expected to affect concentration or quantities of pollutants to storm water discharges, or which may result in non-storm water discharges from the facility. The Plan shall include, at a minimum, the following items:
 - a. A topographic map extending one-quarter mile beyond the property boundaries of the facility, showing: the facility, surface water bodies, wells (including injection wells), seepage pits, infiltration ponds, and the discharge points where the facility's storm water discharges to a municipal storm drain system or other water body. The requirements of this paragraph may be included on the site map if appropriate. Any map or portion of map may be withheld for security reasons.
 - b. A site map showing:
 - i. The storm water conveyance and discharge structures;
 - ii. An outline of the storm water drainage areas for each storm water discharge point, location, and identification of any MS4 to which the industrial site discharges storm water;
 - iii. Paved areas and buildings;
 - iv. Areas used for outdoor manufacturing, storage trash dumpsters and compactors or disposal of significant materials, including activities that generate significant quantities of dust or particulates;
 - v. Location of existing or planned storm water structural control measures/practices (dikes, coverings, detention facilities, etc.);
 - vi. Surface water locations and/or municipal storm drain locations;
 - vii. Areas of existing and potential soil erosion;
 - viii. Vehicle service areas;
 - ix. Material loading, unloading, transfer, and access areas;
 - x. Direction of storm water flow (use arrows);

General NPDES Permit No. ILR00

- xi. Locations of storm water monitoring points;
- xii. Location of any potable water supply wells;
- xiii. Fueling stations;
- xiv. Immediate access roads and rail lines;
- xv. Vehicle or product machinery related to industrial activity;
- xvi. Locations and sources of run-on to the site from adjacent properties that contains significant quantities of pollutants; and
- xvii. Location of any material storage areas (i.e. deicing material, fertilizers, soil stockpiles, etc.).

Areas under Items iv. and ix. above may be withheld from the site map for security reasons.

- c. A narrative description of the following potential pollutant sources:
 - i. The nature of the industrial activities conducted at the site and a list of the activities exposed to storm water;
 - ii. A list of pollutant(s) or pollutant constituents associated with each identified activity above, which could be exposed to storm water or snowmelt and could be discharged from the facility. The Permittee must document all significant material that have been handled, treated, stored or disposed of, and that have been exposed to storm water in the three years prior to the date the Permittee prepares or amends its SWPPP. Materials, equipment, and vehicle management practices employed to minimize contact of significant materials with storm water discharges (include on site map);
 - iii. Existing or future structural and non-structural control measures/practices to reduce pollutants in storm water discharges;
 - iv. Industrial storm water discharge treatment facilities (include on site map) and;
 - v. Methods of onsite storage and disposal of significant materials.
 - d. Permittees discharging storm water to impaired water bodies as determined pursuant to Part C.1.a. shall provide a list of any pollutant that is listed as a cause of impairment in the most recent 303(d) report and may be associated with the industrial site activity and may be discharged in storm water from the industrial site.
 - e. An estimate of the size of the facility in acres or square feet, and the percent of the facility that has impervious areas such as pavement or buildings.
 - f. A summary of existing sampling data describing pollutants in storm water discharges.
6. The Plan shall document the location and describe the storm water management controls which are or will be implemented by the facility to meet the requirements of this permit. The appropriate controls shall reflect identified existing and potential sources of pollutants at the facility. The Permittee shall properly maintain storm water BMPs and other control measures to ensure effectiveness and continuity of operation.
7. Storm Water Pollution Prevention Personnel: Identification by name, job titles, direct telephone numbers and email addresses (if available) of the individuals who are responsible for developing, implementing, and revising the Plan. All storm water pollution prevention personnel must have ready access to the most updated copy of the SWPPP and all associated documents and information as required by this permit.
8. Non-Storm Water Discharges:
- The Permittee shall document that the discharge has been evaluated for the presence of unauthorized non-storm water discharges. The documentation shall include: the date of the evaluation, a description of the evaluation criteria used, a list of the outfalls or on-site drainage points that were directly observed during the evaluation, a description of the action(s) taken to prevent unauthorized discharge(s), or documentation that separate NPDES permit was obtained.

General NPDES Permit No. ILR00

9. The following must be documented in the SWPPP:

- a. Good Housekeeping (F.2.c) – A requirement that waste materials be regularly picked up and disposed of, along with routine inspections for leaks and conditions of drums, tanks and containers;
- b. Maintenance (F.2.b) – Procedures and frequencies for inspection and maintenance of storm water conveyance system devices such as oil/water separators, catch basins, etc., and inspection and testing of plant equipment and systems that could fail and result in discharges of pollutants to storm water. The SWPPP shall include the schedule or frequency for maintaining all control measures;
- c. Spill Prevention and Response (Part F.2.d) – Procedures for responding to spills and leaks, including internal and third-party notification procedures. For preventing spills, include in the SWPPP the control measures for material handling and storage, and procedures for preventing spills that can contaminate storm water. Spill clean-up equipment and procedures should be identified, as appropriate;
- d. Erosion and Sediment Control (Part F.2.f) – If the Permittee uses polymers and/or other chemical treatments as part of a control measure, the Permittee must identify the polymer and/or chemicals used and the purpose; and
- e. Employee Training (Part F.2.g) – The elements of the employee training plan shall include all, but not be limited to, the requirements set forth in Part F.2.g and also include the following:
 - i. The content of the training;
 - ii. The frequency/schedule of the training for employees who have duties in areas of industrial activity subject to this permit; and
 - iii. A log of the date on which specific employees receive training.

10. Inspections.

- a. The Permittee must document in the SWPPP its procedures for performing, as appropriate, the types of inspections specified in this permit, including:
 - i. Routine facility inspections (See Part G.1), and
 - ii. Quarterly visual assessment of storm water discharges (See Part J.1).
- b. If the Permittee is invoking the exception for inactive and unstaffed sites relating to routine facility inspections and quarterly visual assessments, the Permittee must include in the SWPPP the information to support this claim as required by Part G.5.

11. Monitoring.

- a. The Permittee must document in the SWPPP the procedures for conducting two types of analytical monitoring specified by the permit, where applicable to the facility:
 - i. Benchmark monitoring (See Part J.2)
 - ii. Site-specific monitoring
- b. For each type of monitoring, the SWPPP must document:
 - i. Locations where samples are collected, including any determination that two or more outfalls are identical;
 - ii. Parameters for sampling and the frequency of sampling for each parameter;
 - iii. Schedules for monitoring at the facility;
 - iv. Any numeric control values (benchmarks, TMDL-related requirements) applicable to discharges from each outfall; and

General NPDES Permit No. ILR00

- v. Procedures (e.g., responsible staff, logistics, laboratory to be used) for gathering data.
- c. If the Permittee is invoking the exception for inactive and unstaffed sites, the Permittee must include a certification in the SWPPP to support this claim as required by Part G.5.
- d. The Permittee must document the following in the SWPPP if the Permittee plans to use the substantially identical outfall exception for the quarterly visual assessment requirements in Part J.1.e or benchmark monitoring requirements in Part J.2.f:
 - i. Locations of each of the substantially identical outfalls;
 - ii. Description of the general industrial activities conducted in the drainage area of each outfall;
 - iii. Description of the control measures implemented in the drainage area of each outfall;
 - iv. Description of the exposed materials located in the drainage area of each outfall that are likely to be significant contributors of pollutants to storm water discharges;
 - v. An estimate of the runoff coefficient of the drainage areas (low= under 40%, medium= 40% to 65%, high= above 65%); and
 - vi. Why the outfalls are expected to discharge substantially identical effluents.
- 12. This Plan shall briefly describe the appropriate elements of other program requirements, including Spill Prevention Control and Countermeasures (SPCC) plans required under Section 311 of the CWA and the regulations promulgated thereunder, and Best Management Programs under 40 CFR 125.100. Other program requirements such as SPCC may be referenced in the Plan.
- 13. The Plan is considered a report that shall be available to the public at any reasonable time upon request.
- 14. The Plan shall include the signature and title of the person responsible for preparation of the Plan and include the date of initial preparation and each amendment thereto.
- 15. Facilities which discharge storm water associated with industrial activity to MS4 may also be subject to additional requirements imposed by the operator of the municipal separate storm sewer system.
- 16. Additional Documentation Requirements.

The Permittee is required to keep the following inspection, monitoring, and certification records with the SWPPP that keep the records complete and up-to-date, and demonstrate full compliance with the conditions of this permit:

- a. A copy of the NOI submitted to the Agency along with any correspondence exchanged between the Permittee and the Agency specific to coverage under this permit;
- b. A copy of this permit;
- c. Documentation of maintenance and repairs of control measures, including the date(s) of regular maintenance, date(s) of discovery of areas in need of repair/replacements, and for repairs, date(s) the control measures returned to full function, and the justification of any extended maintenance/repair schedules (See Part F.2.b);
- d. All inspection reports, including Routine Facility Inspection Reports (Part G.1) and Quarterly Visual Assessment Reports (J.1) and benchmark monitoring results;
- e. Description of any deviation from the schedule for visual assessments and/or monitoring, and the reasons for the deviations;
- f. Description of any corrective action triggering event/condition listed in Part H.1 and documented in Part H.2;
- g. Documentation of any benchmark exceedance and the type of response employed, including:
 - i. The corrective action taken;

General NPDES Permit No. ILR00

- ii. A finding that the exceedance was due to natural background pollutant levels; or
 - iii. A finding that no further pollutant reductions were technologically available and economically practicable in light of best industry practice consistent with Part J.2.;
 - h. Documentation to support any determination that pollutants of concern are not expected to be present above natural background levels if the facility discharges directly to impaired waters, and such pollutants were not detected in the discharge or were solely attributable to natural background sources (See Part J.2);
 - i. Documentation to support the claim that the facility has changed its status from active to inactive and unstaffed with respect to the requirements to conduct routine inspections (See Part G.5), quarterly visual assessments (see Part J.1) and/or benchmark monitoring (see Part J.2); and
 - j. Electronic copies of all documents, including the SWPPP, are acceptable.
17. Modifications to the following requirements in the plan shall be submitted to the Agency pursuant to Part K.1, E.1.c, E.6, E.7, E.16.f, E.16.g, E.16.i.

F. Control Measures and Discharge Limitations

In the technology-based limits included below, the term "minimize" means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable.

1. Storm Water Controls

The Permittee must select, design, install, and implement control measures (including best management practices) to meet the discharge limitations in Part F.2 and meet the water quality-based effluent limitations in Part F.3. The selection, design, installation, and implementation of these control measures must be in accordance with good engineering practices and manufacturer's specifications. Note that the Permittee may deviate from such manufacturer's specifications where it provides justification for such deviation and include documentation of its rationale in the part of its SWPPP that describes its control measures, consistent with Part E.6. If the Permittee finds that its control measures are not achieving their intended effect of minimizing pollutant discharges, it must modify these control measures in accordance with the corrective action requirements set forth in Part H. Regulated storm water discharges from the Permittee's facility include storm water run-on that commingles with storm water discharges associated with industrial activity at its facility.

2. Discharge Limitations

- a. Minimize Exposure – The Permittee must minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff by either locating these industrial materials and activities inside or protecting them with storm resistant coverings. In order to minimize exposure, where feasible, the Permittee must include the following BMPs where applicable:
 - i. Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from these areas;
 - ii. Containment - Storage within berms or other secondary containment devices to prevent leaks and spills from entering storm water runoff. To the maximum extent practicable, storm water discharged from any area where pollutants from material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water should not enter vegetated areas or surface waters or infiltrate into the soil unless adequate treatment is provided;
 - iii. Clean up spills and leaks promptly using dry methods (e.g., absorbents) or other cleanup methods to prevent the discharge of pollutants;
 - iv. Store leaky vehicles and equipment indoors or, if stored outdoors, use drip pans and absorbents;
 - v. Use spill/overflow protection equipment;
 - vi. Perform all vehicle and/or equipment cleaning operations indoors, under cover, or in bermed areas

General NPDES Permit No. ILR00

- that prevent runoff and run-on and also that capture any overspray;
- vii. Drain fluids from equipment and vehicles that will be decommissioned or will remain unused for extended periods of time;
 - viii. Ensure that all washwater, with the exception of discharges from pavement wash water and routine building washdown, drains to a sanitary sewer, sump, or other proper collection system (i.e., not the storm water drainage system); and
 - ix. Oil & Grease Separation - Oil/water separators, booms, skimmers, or other methods to minimize oil contaminated storm water discharges.
 - x. Minimize dust and offsite tracking of raw, final, and waste materials. Trash disposal areas where dumpsters and rolloff boxes are located shall have the lids which shall remain closed when not in use. For dumpsters and roll off boxes that do not have lids BMPs shall be utilized to prevent any contaminate storm water runoff.
- b. Preventive Maintenance – The Permittee must have procedures and frequencies for inspection and maintenance of storm water conveyance system devices such as oil/water separators, catch basins, etc., and inspection and testing of plant equipment and systems that could fail and result in discharges of pollutants to storm water.
- c. Good Housekeeping and Pollution Prevention Practices - Good housekeeping requires the maintenance of clean, orderly facility areas that discharge storm water. Material handling areas shall be inspected and cleaned as necessary to reduce the potential for pollutants to enter the storm water conveyance system. The Permittee shall implement pollution prevention practices in areas that include, but are not limited to, trash containers, storage areas, loading docks, vehicle fueling, and maintenance. Exposed areas that may contribute pollutants to storm water shall be minimized to reduce or eliminate contaminated storm water runoff.
- d. Spill Prevention and Response – Identification of areas where significant materials can spill into or otherwise enter the storm water conveyance systems and their accompanying drainage points. The Permittee must minimize the potential for leaks, spills, and other releases that may be exposed to storm water and develop plans for effective response to such spills if or when they occur. The Permittee must conduct spill prevention and response measures, including but not limited to, the following:
- i. Plainly label containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides") that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;
 - ii. Implement procedures for material storage and handling, such as the use of secondary containment and barriers between material storage and traffic areas, or a similarly effective means designed to prevent the discharge of pollutants from these areas;
 - iii. Develop spill response training procedures for preventing, containing, and cleaning up leaks, spills, and other releases. Spills shall be cleaned and any contaminated water or solids shall be disposed of in accordance with applicable regulations. As appropriate, execute such procedures as soon as possible;
 - iv. Keep spill kits on-site, in easily accessible locations,
 - v. Notify appropriate facility personnel, and for significant spills, emergency response agencies and regulatory agencies, when a leak, spill, or other release occurs;
 - vi. Document all significant spills and leaks of oil or toxic or hazardous pollutants that actually occurred in the exposed areas, or that drained to a storm water conveyance, during the previous 5 years;
 - vii. Visually inspect retained storm water (e.g. storm water in a secondary containment structure) prior to discharge, to assure the storm water contains no unnatural turbidity, color, oil films, foams, settleable solids, or deposits before discharging any collected storm water.
- e. Storm Water Management Practices - Storm water management practices are practices other than those which control the source of pollutants. They include measures such as installing oil and grit separators, diverting storm water into retention basins, etc. Based on assessment of the potential of various sources to

General NPDES Permit No. ILR00

contribute pollutants, measures to remove pollutants from storm water discharge shall be implemented. The following management practices shall be considered and implemented as applicable:

- i. Debris & Sediment Control - Screens, booms, sediment ponds, or other methods to reduce debris and sediment in storm water discharges;
 - ii. Covered Storage or Manufacturing Areas - Covered fueling operations, materials, manufacturing, and storage areas to prevent contact with storm water. This includes any pesticide, herbicide, fertilizer, or any other chemical storage area;
 - iii. Mercury Switch Removal and Recycling – Mercury containing convenience lighting switches and anti-lock brake assemblies shall be removed from vehicles and recycled in an approved manner which prevents mercury from entering the storm water discharges; and
 - iv. Storm Water Reduction – To minimize storm water runoff, install vegetation on roofs of buildings within and adjacent to the exposure area to detain and evapotranspire runoff where the precipitation falling on the roof is not exposed to contaminants. Capture storm water for use as appropriate based on quality where feasible and applicable.
- f. Sediment and Erosion Prevention – where feasible and applicable, the Permittee must minimize erosion by stabilizing exposed soils at the facility and placing flow velocity dissipation devices at discharge locations. The Permittee must also use structural and non-structural control measures to prevent the discharge of sediment. If the Permittee uses polymers and/or other chemical treatments as part of its controls, it must identify the polymers and/or chemicals used and the purpose. Information on BMPs for erosion and sediment control is available at the following websites:

USEPA National Menu of Best Management Practices (BMPs) for Storm Water

<https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#edu>

Illinois Urban Manual:

<http://www.aiswcd.org/illinois-urban-manual/>

- g. Employee Training – The Permittee must train all employees who work in areas where industrial materials or activities are exposed to storm water, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all pollution prevention personnel. Employees shall be trained at a minimum of once per calendar year. The Permittee shall ensure the following personnel are trained on the requirements of this permit:
- i. Personnel who are responsible for the design, installation, maintenance, and/or repair of controls (including pollution prevention measures);
 - ii. Personnel responsible for the storage and handling of chemicals and materials that could become contaminants in storm water discharges;
 - iii. Personnel who are responsible for conducting and documenting monitoring and inspections as required in Parts G and J; and
 - iv. Personnel who are responsible for performing and documenting corrective actions as required in Part H.
- h. De-icing Material Storage - Storage piles of deicing material used onsite or for other commercial or industrial purposes must be enclosed or covered to prevent exposure to precipitation (except for exposure resulting from adding or removing materials from the pile). The Permittee must document and implement appropriate pollution prevention measures that minimize exposure to storm water when adding to or removing material from the pile. Piles do not need to be enclosed or covered where storm water from the pile is not discharged to Waters of the United States or the discharges from the piles are authorized under another permit. The Permittee must document the location of any storage piles of deicing material to be used for deicing or for other commercial or industrial use in the SWPPP site map (Part E.5.b.xvii).

General NPDES Permit No. ILR00

- i. Plastic Materials Requirements - Facilities that handle pre-production plastic pellets are required to implement best management practices to eliminate discharges of plastic in storm water. Examples of plastic material required to be addressed as storm water pollutants include plastic resin pellets, powders, flakes, additives, regrind, scrap, waste and recycling.
3. Water Quality-Based Effluent Limitations.
 - a. Water Quality Standards - Discharges covered by this permit, alone or in combination with other sources, shall not cause or contribute to a violation of any applicable water quality standard pursuant 35 Ill. Adm. Code 304.105;
 - b. The Permittee must implement all controls necessary to comply with a wasteload allocation in an EPA established or approved TMDL as required in Part C;
 - c. Except for discharges authorized in Part A.8 of this permit, the Permittee shall effectively prohibit non-storm water discharges into the storm sewer system; and
 - d. The Permittee shall not allow any offensive discharges pursuant to 35 Ill. Admin. Code Section 304.106.

G. INSPECTIONS

1. The Permittee shall conduct facility inspections covering all the areas subject to the requirements of this permit and identified in the SWPPP.

Inspections must be conducted at least quarterly or in some instances more frequently as appropriate. At least one of the Permittee's routine inspections must be conducted during a period when a storm water discharge is occurring within 72 hours of the beginning of a storm event equal to or greater than 0.25 inches in 24 hours.

Inspections must be performed by qualified personnel (as defined in Part M.12) with at least one member of the storm water pollution prevention personnel participating. The Permittee may prioritize facility outfalls to allow for adequate quarterly inspections during flooding conditions. Areas inaccessible during quarterly inspections due to flooding conditions shall be inspected within 72 hours of becoming accessible.

Inspectors must consider the results of any visual and analytical monitoring for the past year when planning and conducting inspections as well as where:

- a. Industrial materials, residue or trash may have or could come into contact with storm water.
- b. Leaks or spills from industrial equipment, drums, tanks and other containers.
- c. Offsite tracking of industrial or waste materials, or sediment may occur, such as where vehicles enter or exit the site.
- d. Tracking or blowing of raw, final or waste materials may occur from areas of no exposure to exposed areas.
- e. Control measures which may need replacement, maintenance or repair.

During an inspection occurring during a storm water discharge, control measures implemented to comply with benchmark monitoring requirements must be observed to ensure they are functioning correctly. Discharge points, as defined in Part M.3, must also be observed during this inspection. If such discharge locations are inaccessible, nearby downstream locations must be inspected.

2. The Permittee must document the findings of the facility inspections and maintain this report with its SWPPP. The Permittee must summarize all findings in the annual report per Part K. Document all findings, including but not limited to, the following information:
 - a. The inspection date and time;
 - b. The name(s) and signature(s) of the inspector(s);
 - c. Weather information including flooding events;

General NPDES Permit No. ILR00

- d. All observations relating to the implementation of control measures at the facility, including:
 - i. A description of any discharges occurring at the time of the inspection;
 - ii. Any previously unidentified discharges and/or pollutants from the site;
 - iii. Any evidence of, or the potential for, pollutants entering the drainage system; Observations regarding the physical condition of and around all outfalls including any flow dissipation devices, and evidence of pollutants in discharges and/or the receiving water;
 - iv. Any control measures needing maintenance, repairs, or replacement;
 - e. Any additional control measures needed to comply with the permit requirements; and
 - f. Any incidents of noncompliance observed.
 - g. Any outfall not inspected due to flooding conditions,
- 3 Any corrective action required as a result of a routine facility inspection must be performed consistent with Part H of this permit.
4. If the Permittee performed a visual observation required in Part J.1 during the facility inspection, the Permittee may include the results of the assessment with the report required in Part G.2, provided all components of both types of inspections are included in the report.
5. Exceptions to Routine Facility Inspections for Inactive and Unstaffed Sites.

The Permittee may exercise a waiver of the facility inspection requirement at a facility that is inactive and unstaffed, provided there are no industrial materials or activities exposed to storm water. If the Permittee exercises this waiver, the Permittee must maintain a certification with the SWPPP stating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to storm water.

H. CORRECTIVE ACTIONS

1. Conditions Requiring SWPPP Review and Revision.

The Permittee must review the SWPPP when any of the following conditions occur:

- a. An unauthorized release or discharge (e.g., spill, leak, or discharge of non-storm water not authorized by this or another NPDES permit) occurs at the facility;
- b. Control measures are not stringent enough for the discharge to meet applicable water quality standards or the conditions of this permit;
- c. A required control measure was never installed, was installed incorrectly, or not in accordance with this permit or is not being properly operated or maintained;
- d. Visual observations indicate signs of storm water pollution (e.g., unnatural color, odor, turbidity, floatable material, settled solids, suspended solids, foam, and oil sheen);
- e. The average of four quarterly sampling results exceeds any applicable benchmark monitoring concentration. If less than four samples have been taken, but the results are such that an exceedance of the four quarter average is mathematically certain (i.e., if the sum of quarterly sample results to date is more than four times the benchmark monitoring concentration) this is considered a benchmark exceedance, triggering this review;
- f. Construction or a change in design, operation, or maintenance at the facility that modifies the type or concentration of pollutants discharged in storm water from the facility, or increases the quantity of pollutants discharged;

General NPDES Permit No. ILR00

2. Corrective Actions and Deadlines.

- a. Immediate Actions. If any condition in Part H.1 occurs, the Permittee must immediately take all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.
- b. Subsequent Actions. If the Permittee determines that additional changes are necessary beyond those implemented pursuant to this permit, it must install a new or modified control and make it operational, or complete the repair, before the next storm event if possible, and within 14 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 14 calendar days, the Permittee must document why it is infeasible to complete the installation or repair within the 14 day timeframe. The Permittee must also identify the schedule for completing the work, which must be done as soon as practicable after the 14-day timeframe but no longer than 45 days after discovery.

Where the Permittee's corrective actions result in changes to any of the controls or procedures documented in its SWPPP, the Permittee must modify its SWPPP accordingly within 14 calendar days of completing corrective action work.

- c. Corrective Action Documentation. The Permittee must document the existence of any of the conditions listed in Part H.1 within 24 hours of becoming aware of such condition. The Permittee is not required to submit its corrective action documentation to Illinois EPA. Include the following information in the documentation:
 - i. Identification and description of the condition triggering the need for corrective action review. For any spills or leaks, include the following information: a description of the incident including material, date/time, amount, location, and reason for spill, and any leaks, spills or other releases that resulted in discharges of pollutants to waters of the State, through storm water or otherwise;
 - ii. Date the condition was identified;
 - iii. For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any measures taken to prevent the reoccurrence of such releases;
 - iv. The Permittee must also document the corrective actions taken that occurred as a result of the conditions listed in Part H.1, within 14 days from the time of discovery of any of those conditions. Provide the dates when each corrective action was initiated and completed (or is expected to be completed). If applicable, document why it is infeasible to complete necessary installations or repairs within the 14-day timeframe and document the Permittee's schedule for installing the controls and making them operational as soon as practicable after the 14-day timeframe.
- d. Substantially Identical Outfalls. If the event triggering corrective action is similar to an outfall that represents other substantially identical outfalls, the Permittee's review must assess the need for corrective action for each outfall represented by the outfall that triggered the review. Any necessary changes to control measures that affect these other outfalls must also be made before the next storm event if possible, or as soon as practicable following that storm event. The SWPPP must be modified to include any additional control measures required pursuant to this paragraph.

I. CONSTRUCTION AUTHORIZATION

1. Authorization is hereby granted to construct treatment works and related equipment that collects, stores or treats storm water that may be required by the SWPPP developed pursuant to this permit.
2. This Authorization is issued subject to the following condition(s):
 - a. The issuance of this authorization:
 - i. does not release the Permittee from any liability for damage to persons or property caused by or resulting from the installation, maintenance, or operation of the proposed facilities;
 - ii. does not take into consideration the structural stability of any units or part of this project; and

General NPDES Permit No. ILR00

- iii. does not release the Permittee from compliance with other applicable statutes of the State of Illinois or other applicable local law, regulations, or ordinances.
 - b. If any statement or representation is found to be incorrect, this authorization may be revoked and the Permittee thereupon waives all rights thereunder.
3. Plans and specifications of all treatment equipment being included as a part of the Storm Water Management Practice shall be included in the SWPPP.
4. Any modification of or deviation from the plans and specifications originally submitted with the initial SWPPP requires amendment of the SWPPP.
5. Construction activities which result from treatment equipment installation, including clearing, grading, and excavation activities which result in the disturbance of one acre or more of land area, are not covered by this authorization. The Permittee shall contact the Agency regarding any additional required permit(s).

J. MONITORING

1. Quarterly Visual Observation of Discharges – The requirements and procedures for quarterly visual observations are applicable to all facilities covered under this permit, regardless of the Permittee's sector of industrial activity.
 - a. The Permittee must perform and document a quarterly visual observation of a storm water discharge associated with industrial activity from each outfall. The visual observation must be made during daylight hours. If no storm event resulted in runoff during daylight hours on normal work days from the facility during a monitoring quarter, no visual observation is required for that quarter, provided the permittee documents that no observable runoff occurred. Normal work days do not include weekends or Federal holidays. The Permittee must sign and certify the documentation.
 - b. Visual observation must be made on samples collected within 1 hour of an actual discharge from a storm event equal to or greater than 0.25 inch in 24 hours. If it is not possible to take a sample within the first hour of the discharge, the sample must be collected as soon as practicable after the first hour and the Permittee must explain why it was not possible to take samples within the first hour. In the case of snowmelt, the samples must be taken from an actual discharge from the site. For storm events, samples must be collected from a storm event discharge at least 72 hours from the previous discharge. The 72 hour interval does not apply if the Permittee documents that a less than 72 hour event is representative for local storm events during the sampling period. The observation must document: unnatural color, odor, clarity, floatable solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution if present in the discharge. If visual observations indicate any unnatural color, odor, turbidity, floatable material, oil sheen or other indicators of storm water pollution, the Permittee shall obtain a sample and test for the parameter or the list of pollutants as provided pursuant to Part E.5.C.ii and E.5.d and initiate corrective action in Part H.
 - c. The Permittee must maintain visual observation reports onsite with the SWPPP. Each report must include the observation date and time, inspection personnel, outfall location, nature of the discharge (i.e., runoff or snow melt), visual quality of the storm water discharge (including observations of unnatural color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution), and probable sources of any observed storm water contamination.
 - d. The Permittee may exercise a waiver of the visual observation requirement at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to storm water. If the Permittee exercises this waiver, the Permittee must maintain a certification with the SWPPP stating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to storm water.
 - e. Representative Outfalls - If the Permittee's facility has two or more outfalls that are believed to discharge substantially identical effluents, based on similarities of the industrial activities, significant materials, size of drainage areas, and storm water management practices occurring within the drainage areas of the outfalls, the Permittee may conduct visual observation of the discharge at just one of the outfalls and report that the results also apply to the substantially identical outfall(s).
 - f. Visual observation documentation shall be made available to the Agency and general public upon written request.

General NPDES Permit No. ILR00

2. Benchmark Monitoring.

This permit specifies pollutant benchmark concentrations that are applicable to certain sectors/subsectors as specified in Attachment 1. Benchmark monitoring data are primarily for the Permittee's use to determine the overall effectiveness of specific control measures and to assist Permittees in knowing when additional corrective action(s) may be necessary to comply with the discharge limitations in Part F.

- a. The benchmark concentrations are not discharge limitations. However, corrective action is required as the result of a benchmark exceedance pursuant to Part H.
- b. At the Permittee's discretion, more than four samples may be taken during separate runoff events and used to determine the average benchmark parameter concentration for facility discharges.
- c. **Applicability of Benchmark Monitoring:** The Permittee must monitor for any benchmark parameters specified for the industrial sector(s), both primary industrial activity and any co-located industrial activities, applicable to the discharge. Industry-specific benchmark concentrations are listed in the sector-specific sections of Attachment 1. If a facility is in one of the industrial sectors subject to benchmark concentrations that are hardness-dependent, the Permittee is required to submit representative hardness values of the receiving water. The hardness value shall be submitted with the initial benchmark report.
- d. Samples must be analyzed consistent with 40 CFR Part 136 analytical methods and using test procedures with quantitation limits at or below benchmark values for all benchmark parameters for which sampling is required.
- e. **Benchmark Monitoring Schedule -** Benchmark monitoring must be conducted quarterly for first four full quarters of permit coverage commencing no later than 180 days after the effective date of this permit.
 - i. **Data not exceeding benchmarks -** After collection of four quarterly samples, if the average of the four monitoring values for any parameter does not exceed the benchmark, monitoring requirements for that parameter for the permit term have been fulfilled;
 - ii. **Data exceeding benchmarks -** After the collection of four quarterly samples, if the average of the four monitoring values for any parameter exceeds the benchmark, the Permittee must, in accordance with Part H, review the selection, design, installation and implementation of the control measures to determine if modifications are necessary to meet the discharge limitations in this permit, and either:
 - A. Make the necessary modifications and continue quarterly monitoring until the Permittee has completed four additional quarters of monitoring for which the average does not exceed the benchmark; or
 - B. Make a determination that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice to meet the technology discharge limitations or are necessary to meet the water-quality-based discharge limitations in Parts F.2 and F.3 of this permit, in which case the Permittee must continue monitoring once per year. The Permittee must also document the rationale for concluding that no further pollutant reductions are achievable, and retain all records related to this documentation with the SWPPP.
 - C. In accordance with Part H, the Permittee must review the control measures and perform any required corrective action immediately (or document why no corrective action is required), without waiting for the full four quarters of monitoring data, if an exceedance of the four quarter average is mathematically certain. If after modifying its control measures and conducting four additional quarters of monitoring, the average still exceeds the benchmark (or if an exceedance of the benchmark by the four quarter average is mathematically certain prior to conducting the full four additional quarters of monitoring), the Permittee must again review its control measures and take one of the two actions above.
 - iii. **Natural background pollutant levels -** Following the first four quarters of benchmark monitoring (or sooner if the exceedance is triggered by less than four quarters of data, see above), if the average concentration of a pollutant exceeds a benchmark value, and the Permittee determines that exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background, the Permittee is not required to perform corrective action or additional benchmark monitoring provided that:

General NPDES Permit No. ILR00

- A. The average concentration of the benchmark monitoring results is less than or equal to the concentration of that pollutant in the natural background;
 - B. The Permittee document and maintain with the SWPPP, the supporting rationale for concluding that the benchmark exceedances are in fact attributable solely to natural background pollutant levels. The Permittee must include in the rationale any data previously collected by the Permittee or other sources (i.e., literature studies) that describe the level of natural background pollutants in the storm water discharge;
 - C. Notify the Agency on the Permittee's final quarterly benchmark monitoring report that the benchmark exceedances are attributable solely to natural background pollutant levels.
 - D. Permittees may discontinue monitoring natural background pollutants that occur solely from run-on sources provided the Permittee analyzes the pollutant in the run-on source during the benchmark monitoring period.
- f. Exception for Inactive and Unstaffed Sites - The requirement for benchmark monitoring does not apply at a facility that is inactive and unstaffed, provided there are no industrial materials or activities exposed to storm water. To qualify for any monitoring exception, the Permittee must meet the following requirements:
- i. Maintain a statement with the Permittee's SWPPP stating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to storm water in accordance with the substantive requirements in 40 CFR 122.26(g) and sign and certify the statement in accordance with Attachment H 11.
 - ii. If a Permittee is not qualified for this exception at the time of permit coverage but during the permit term the Permittee becomes qualified because the facility is inactive and unstaffed, and there are no industrial materials or activities that are exposed to storm water, then the Permittee must notify Illinois EPA of this change in the next benchmark monitoring report. A Permittee may discontinue benchmark monitoring once Illinois EPA has been notified, and prepared and signed a certification statement concerning the facility's qualification for this monitoring exception.
- g. Representative Outfalls – If the Permittee's facility has two or more outfalls that are believed to discharge substantially identical effluents, based on similarities of the industrial activities, significant materials, size of drainage areas, and storm water management practices occurring within the drainage areas of the outfalls, the Permittee may conduct benchmark monitoring of the discharge at just one of the outfalls and report that the results also apply to the substantially identical outfall(s).

K. REPORTING

1. The Permittee shall submit an electronic copy of the annual inspection report to the Agency. The report shall include results of the quarterly benchmark monitoring as required by Part J.2 and the quarterly facility inspections which are required by Part G of this permit. The report shall include, at a minimum, a review and update of the SWPPP. The Permittee shall submit modifications of the requirements of the plan to the Agency with the Annual Report. Permittees have 180 days to update their SWPPP to comply with the new requirements and then submit with the following annual report. The report shall also include documentation of any event (spill, treatment unit malfunction, etc.) which would require an inspection, results of the inspection, and any subsequent corrective maintenance activity. The report shall be completed and signed by the authorized facility employee(s) who conducted the inspection(s). The annual inspection report is considered a public document that shall be available to the public at any reasonable time upon request.
2. For new Permittees, the first Annual Report shall contain information gathered during the one year time period beginning with the initial effective date of coverage under this permit and shall be submitted no later than 60 days after this one year period has elapsed. Each subsequent report shall contain the previous year's information and shall be submitted no later than one year after the previous year's report was due.
3. Existing Permittees renewing coverage under this permit shall continue to submit the Annual Report no later than 60 days after the original date of effective coverage under a general storm water permit.
4. If the facility performs inspections more frequently than required by this permit, the results shall be included as additional information in the Annual Report.

General NPDES Permit No. ILR00

5. The Permittee shall retain the annual inspection report on file for at least 3 years. This period may be extended by request of the Illinois EPA at any time.
6. Annual inspection reports shall be submitted to one of the following addresses:
 - a. Electronic Annual Reports should be submitted to:

epa.indannualinsp@illinois.gov
 - b. If electronic submittal is unavailable, reports should be mailed to:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Compliance Assurance Section #19
1021 North Grand Avenue East
Annual Inspection Report
P.O. Box 19276
Springfield, Illinois 62794-9276
7. Any Permittee shall notify the owner of any regulated MS4 which receives storm water discharged from the facility that the industrial activity has received coverage of a general ILR00 permit. The Permittee shall submit any SWPPP or any annual inspection to the MS4 upon request by the MS4 owner.

L. TERMINATION OF COVERAGE UNDER THIS PERMIT

Where all storm water discharges associated with industrial activity that have been authorized by this permit are eliminated, the operator of the facility may submit a termination request to the Agency at the address indicated in Part L.5 of this permit. The termination request shall include the name, address, telephone number, location of the facility, permit number, and a description of actions taken to eliminate the storm water discharge or other justification for the request. Coverage under this permit is not terminated until the Agency responds in writing on the termination request. All monitoring, inspections, and reporting, as described in this permit is required until coverage is terminated by the Agency.

1. The Agency may require any person authorized by this permit to apply for and/or obtain either an individual NPDES permit or an alternative NPDES general permit. Any interested person may petition the Agency to take action under this paragraph. The Agency may require any owner or operator authorized to discharge under this permit to apply for an individual NPDES permit or alternative general permit only if the owner or operator has been notified in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the owner or operator to file the application, and a statement that on the effective date of the individual NPDES permit or the alternative general permit as it applies to the individual Permittee, coverage under this general permit shall automatically terminate. The Agency may grant additional time to submit the application upon request of the applicant. If an owner or operator fails to submit in a timely manner an individual NPDES permit or alternative general application required by the Agency under this paragraph then the applicability of this permit to the individual NPDES permitted is automatically terminated at the end of the day specified for application submittal. The Agency may require an individual NPDES or alternative general permit based on:
 - a. Information received which indicates the receiving water may be of particular biological significance pursuant to 35 Ill. Adm. Code 302.105(d)(6);
 - b. Whether the receiving waters are identified as impaired pursuant to the Agency's 303(d) listing and the site storm water is a potential contributing source of any parameter identified as a cause of that impairment; or
 - c. Size of industrial site, proximity of site to the receiving stream, inadequate discharge control, discharge characteristics, or applicable water quality standards, etc.
 - d. The Agency may also require monitoring of any storm water discharge from any site to determine whether an individual or alternative general permit is required.
2. Any owner or operator authorized by this permit may request to be excluded from the coverage of this permit by applying for an individual or alternative general permit. The owner or operator shall submit an individual application with reasons supporting the request, in accordance with the requirements of 40 CFR 122.28, to the

General NPDES Permit No. ILR00

Agency. The request shall be granted by issuance date of an individual permit or an alternative general permit if the reasons cited by the owner or operator are adequate to support the request.

3. When an individual NPDES permit is issued to an owner or operator otherwise subject to this permit, or the owner or operator is approved for coverage under an alternative NPDES general permit, the applicability of this permit to the individual NPDES Permittee is automatically terminated on the issuance date of the individual permit or the date of approval for coverage under the alternative general permit, whichever the case may be. When an individual NPDES permit is denied to an owner or operator otherwise subject to this permit, or the owner or operator is denied coverage under an alternative NPDES general permit, the applicability of this general permit to the individual NPDES Permittee is automatically terminated on the date of such denial, unless otherwise specified by the Agency.
4. The Permittee must submit a Notice of Termination (NOT) within 30 days after one or more of the following conditions have been met:
 - a. A change in ownership or operational control at the facility;
 - b. The Permittee has ceased operations at the facility, there are no discharges or no longer will be any discharges of storm water associated with industrial activity from the facility, and necessary sediment and erosion controls have been implemented; or
 - c. Coverage has been obtained under an individual or alternative general permit for all discharges required to be covered under an NPDES permit.
5. NOT submittals can be made to one of the following addresses:
 - a. Electronic NOTs should be submitted to:
epa.indannualinsp@illinois.gov
 - b. If electronic submittal is unavailable the NOT should be submitted to the follow address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Compliance Assurance Section #19
1021 North Grand Avenue East
Annual Inspection Report
P.O. Box 19276
Springfield, Illinois 62794-9276
6. Standard Condition 15 of Attachment H is not applicable to this General Permit.

M. DEFINITIONS

1. Coal pile runoff means the rainfall runoff from or through any coal storage pile.
2. Control Measures means any storm water control or other method (including narrative effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the state.
3. Discharge point or Outfall means the location where collected and concentrated storm water flows are discharged from the facility.
4. Green Infrastructure means wet weather management approaches and technologies that utilize, enhance or mimic the natural hydrologic cycle processes of infiltration, evapotranspiration and reuse. Green infrastructure approaches currently in use include green roofs, trees and tree boxes, rain gardens, vegetated swales, pocket wetlands, infiltration planters, porous and permeable pavements, porous piping systems, dry wells, vegetated median strips, reforestation/revegetation, rain barrels and cisterns and protection and enhancement of riparian buffers and floodplains.
5. Industrial activities means any of the 10 categories of industrial activities included in the definition of "storm water discharges associated with industrial activity" as defined in 40 CFR 122.26(b)(14)(i)-(ix) and (xi).
6. Land application site means an area where wastes are applied onto or incorporated into the soil surface for treatment or disposal.

General NPDES Permit No. ILR00

7. Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application site, surface impoundment, injection well or waste pile.
8. MS4 or MS4 Owner means the owner or operator of a conveyance or system of conveyances for the movement of storm water as defined at 40 CFR § 122.26(b)(8).
9. Municipal Separate Storm Sewer is defined at 40 CFR 122.26(b)(8) and means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the CWA that discharges to waters of the United States; (ii) Designed or used for collecting or conveying storm water; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.
10. Natural Background Pollutants include those substances that are naturally occurring in soils or ground water. Natural background pollutants do not include legacy pollutants from previous activity of the facility's site, or pollutants in run-on from adjacent sources which are not naturally occurring, such as other industrial sites or roadways.
11. Pollution Prevention means any practice which reduces the amount of any hazardous substance, pollutant or contaminant entering any waste stream or otherwise entering the environment prior to recycling, treatment or disposal and reduces the hazards to public health and the environment associated with the release of such substances, pollutants or contaminants.
12. Qualified Personnel means those persons who possess the knowledge and skills to assess conditions and activities that could impact storm water quality at the Permittee's facility, and who can also evaluate the effectiveness of control measures.
13. Run-on means sources of storm water that drain from land located upslope or upstream from the regulated facility in question.
14. Section 313 water priority chemical means a chemical or chemical categories which: 1) Are listed at 40 CFR 372.65 pursuant to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986); 2) are present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and 3) that meet at least one of the following criteria: (i) Are listed in Appendix D of 40 CFR 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols) or Table V (certain toxic pollutants and hazardous substances); (ii) are listed as a hazardous substance pursuant to section 311(b)(2)(A) of the CWA at 40 CFR 116.4; or (iii) are pollutants for which EPA has published acute or chronic water quality criteria.
15. Significant materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to EPCRA Section 313; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.
16. Significant spills includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under section 311 of the Clean Water Act (see 40 CFR 110.6 and CFR 117.21) or section 102 of CERCLA (see 40 CFR 302.4).

Note that additional definitions are included in the permit Standard Conditions, Attachment H.

ILR00 Final 4-5-17.doc

**Attachment H
Standard Conditions**

Definitions

Act means the Illinois Environmental Protection Act, 415 ILCS 5 as Amended.

Agency means the Illinois Environmental Protection Agency.

Board means the Illinois Pollution Control Board.

Clean Water Act (formerly referred to as the Federal Water Pollution Control Act) means Pub. L 92-500, as amended. 33 U.S.C. 1251 et seq.

NPDES (National Pollutant Discharge Elimination System) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318 and 405 of the Clean Water Act.

USEPA means the United States Environmental Protection Agency.

Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Maximum Daily Discharge Limitation (daily maximum) means the highest allowable daily discharge.

Average Monthly Discharge Limitation (30 day average) means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Discharge Limitation (7 day average) means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Aliquot means a sample of specified volume used to make up a total composite sample.

Grab Sample means an individual sample of at least 100 milliliters collected at a randomly-selected time over a period not exceeding 15 minutes.

24-Hour Composite Sample means a combination of at least 8 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period.

8-Hour Composite Sample means a combination of at least 3 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over an 8-hour period.

Flow Proportional Composite Sample means a combination of sample aliquots of at least 100 milliliters collected at periodic intervals such that either the time interval between each aliquot or the volume of each aliquot is proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot.

- (1) **Duty to comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.
- (2) **Duty to reapply.** If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. If the permittee submits a proper application as required by the Agency no later than 180 days prior to the expiration date, this permit shall continue in full force and effect until the final Agency decision on the application has been made.
- (3) **Need to halt or reduce activity not a defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (4) **Duty to mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
- (5) **Proper operation and maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up, or auxiliary facilities, or similar systems only when necessary to achieve compliance with the conditions of the permit.
- (6) **Permit actions.** This permit may be modified, revoked and reissued, or terminated for cause by the Agency pursuant to 40 CFR 122.62 and 40 CFR 122.63. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- (7) **Property rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.
- (8) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency upon request, copies of records required to be kept by this permit.

(9) **Inspection and entry.** The permittee shall allow an authorized representative of the Agency or USEPA (including an authorized contractor acting as a representative of the Agency or USEPA), upon the presentation of credentials and other documents as may be required by law, to:

- (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- (d) Sample or monitor at reasonable times, for the purpose of assuring permit compliance, or as otherwise authorized by the Act, any substances or parameters at any location.

(10) **Monitoring and records.**

- (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- (b) The permittee shall retain records of all monitoring information, including all calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of this permit, measurement, report or application. Records related to the permittee's sewage sludge use and disposal activities shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503). This period may be extended by request of the Agency or USEPA at any time.
- (c) Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
- (d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. Where no test procedure under 40 CFR Part 136 has been approved, the permittee must submit to the Agency a test method for approval. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to ensure accuracy of measurements.

(11) **Signatory requirement.** All applications, reports or information submitted to the Agency shall be signed and certified.

(a) **Application.** All permit applications shall be signed as follows:

- (1) For a corporation: by a principal executive officer of at least the level of vice president or a person or position having overall responsibility for environmental matters for the corporation;
- (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
- (3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.

(b) **Reports.** All reports required by permits, or other

information requested by the Agency shall be signed by a person described in paragraph (a) or by a duly authorized representative of that person. A person is a duly authorized representative only if:

- (1) The authorization is made in writing by a person described in paragraph (a); and
 - (2) The authorization specifies either an individual or a position responsible for the overall operation of the facility, from which the discharge originates, such as a plant manager, superintendent or person of equivalent responsibility; and
 - (3) The written authorization is submitted to the Agency.
- (c) **Changes of Authorization.** If an authorization under (b) is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of (b) must be submitted to the Agency prior to or together with any reports, information, or applications to be signed by an authorized representative.
- (d) **Certification.** Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

(12) **Reporting requirements.**

(a) **Planned changes.** The permittee shall give notice to the Agency as soon as possible of any planned physical alterations or additions to the permitted facility.

Notice is required when:

- (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source pursuant to 40 CFR 122.29 (b); or
 - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements pursuant to 40 CFR 122.42 (a)(1).
 - (3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- (b) **Anticipated noncompliance.** The permittee shall give advance notice to the Agency of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- (c) **Transfers.** This permit is not transferable to any person except after notice to the Agency.
- (d) **Compliance schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance

schedule of this permit shall be submitted no later than 14 days following each schedule date.

(e) **Monitoring reports.** Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR).

(2) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

(3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Agency in the permit.

(f) **Twenty-four hour reporting.** The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24-hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and time; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The following shall be included as information which must be reported within 24-hours:

(1) Any unanticipated bypass which exceeds any effluent limitation in the permit.

(2) Any upset which exceeds any effluent limitation in the permit.

(3) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Agency in the permit or any pollutant which may endanger health or the environment.

The Agency may waive the written report on a case-by-case basis if the oral report has been received within 24-hours.

(g) **Other noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs (12) (d), (e), or (f), at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (12) (f).

(h) **Other information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Agency, it shall promptly submit such facts or information.

(13) **Bypass.**

(a) **Definitions.**

(1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

(2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

(b) Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient

operation. These bypasses are not subject to the provisions of paragraphs (13)(c) and (13)(d).

(c) **Notice.**

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph (12)(f) (24-hour notice).

(d) **Prohibition of bypass.**

(1) Bypass is prohibited, and the Agency may take enforcement action against a permittee for bypass, unless:

(i) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(ii) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(iii) The permittee submitted notices as required under paragraph (13)(c).

(2) The Agency may approve an anticipated bypass, after considering its adverse effects, if the Agency determines that it will meet the three conditions listed above in paragraph (13)(d)(1).

(14) **Upset.**

(a) **Definition.** Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

(b) **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph (14)(c) are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

(c) **Conditions necessary for a demonstration of upset.** A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;

(2) The permitted facility was at the time being properly operated; and

(3) The permittee submitted notice of the upset as required in paragraph (12)(f)(2) (24-hour notice).

(4) The permittee complied with any remedial measures required under paragraph (4).

(d) **Burden of proof.** In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

- (15) **Transfer of permits.** Permits may be transferred by modification or automatic transfer as described below:
- (a) Transfers by modification. Except as provided in paragraph (b), a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued pursuant to 40 CFR 122.62 (b) (2), or a minor modification made pursuant to 40 CFR 122.63 (d), to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act.
 - (b) Automatic transfers. As an alternative to transfers under paragraph (a), any NPDES permit may be automatically transferred to a new permittee if:
 - (1) The current permittee notifies the Agency at least 30 days in advance of the proposed transfer date;
 - (2) The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage and liability between the existing and new permittees; and
 - (3) The Agency does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement.
- (16) All manufacturing, commercial, mining, and silvicultural dischargers must notify the Agency as soon as they know or have reason to believe:
- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant identified under Section 307 of the Clean Water Act which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter (100 ug/l);
 - (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6 dinitrophenol; and one milligram per liter (1 mg/l) for antimony.
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the NPDES permit application; or
 - (4) The level established by the Agency in this permit.
 - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the NPDES permit application.
- (17) All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Agency of the following:
- (a) Any new introduction of pollutants into that POTW from an indirect discharge which would be subject to Sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants; and
 - (b) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - (c) For purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
- (18) If the permit is issued to a publicly owned or publicly regulated treatment works, the permittee shall require any industrial user of such treatment works to comply with federal requirements concerning:
- (a) User charges pursuant to Section 204 (b) of the Clean Water Act, and applicable regulations appearing in 40 CFR 35;
 - (b) Toxic pollutant effluent standards and pretreatment standards pursuant to Section 307 of the Clean Water Act; and
 - (c) Inspection, monitoring and entry pursuant to Section 308 of the Clean Water Act.
- (19) If an applicable standard or limitation is promulgated under Section 301(b)(2)(C) and (D), 304(b)(2), or 307(a)(2) and that effluent standard or limitation is more stringent than any effluent limitation in the permit, or controls a pollutant not limited in the permit, the permit shall be promptly modified or revoked, and reissued to conform to that effluent standard or limitation.
- (20) Any authorization to construct issued to the permittee pursuant to 35 Ill. Adm. Code 309.154 is hereby incorporated by reference as a condition of this permit.
- (21) The permittee shall not make any false statement, representation or certification in any application, record, report, plan or other document submitted to the Agency or the USEPA, or required to be maintained under this permit.
- (22) The Clean Water Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act is subject to a civil penalty not to exceed \$25,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Additional penalties for violating these sections of the Clean Water Act are identified in 40 CFR 122.41 (a)(2) and (3).
- (23) The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.
- (24) The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (25) Collected screening, slurries, sludges, and other solids shall be disposed of in such a manner as to prevent entry of those wastes (or runoff from the wastes) into waters of the State. The proper authorization for such disposal shall be obtained from the Agency and is incorporated as part hereof by reference.
- (26) In case of conflict between these standard conditions and any other condition(s) included in this permit, the other condition(s) shall govern.
- (27) The permittee shall comply with, in addition to the requirements of the permit, all applicable provisions of 35 Ill. Adm. Code, Subtitle C, Subtitle D, Subtitle E, and all applicable orders of the Board or any court with jurisdiction.
- (28) The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit is held invalid, the remaining provisions of this permit shall continue in full force and effect.

(Rev. 7-9-2010 bah)

Subpart N – Sector N – Scrap Recycling and Waste Recycling Facilities.

You must comply with sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as specified below. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

SECTOR N: SCRAP RECYCLING FACILITIES		
Subsector (May be subject to more than one sector/subsector)	SIC Code or Activity Code	Activity Represented
N1	5093	Scrap Recycling and Waste Recycling Facilities Except Source Separated Recycling
N2	5093	Source Separated Recycling Facility

N.1 Covered Storm water Discharges.

The requirements in Subpart N apply to storm water discharges associated with industrial activity from Scrap Recycling and Waste Recycling facilities as identified by the SIC Code specified under attachment 2 of this permit.

N.2 Limitation on Coverage.

Separate permit requirements have been established for recycling facilities that receive, process, and do wholesale distribution of only source-separated recyclable materials primarily from non-industrial and residential sources (i.e., common consumer products including paper, newspaper, glass, cardboard, plastic containers, and aluminum and tin cans). This includes recycling facilities commonly referred to as material recovery facilities (MRF).

N.2.1 *Prohibition of Non-Storm water Discharges.* Non-storm water discharges from turnings containment areas are not covered by this permit. Discharges from containment areas in the absence of a storm event are prohibited unless covered by a separate NPDES permit.

N.3 Additional Technology-Based Effluent Limits.

N.3.1 *Scrap and Waste Recycling Facilities (Non-Source Separated, Nonliquid Recyclable Materials).* Requirements for facilities that receive, process, and do wholesale distribution of nonliquid recyclable wastes (e.g., ferrous and nonferrous metals, plastics, glass, cardboard, and paper). These facilities may receive both nonrecyclable and recyclable materials. This section is not intended for those facilities that accept recyclables only from primarily non-industrial and residential sources.

N.3.1.1 *Inbound Recyclable and Waste Material Control Program.* Minimize the chance of accepting materials that could be significant sources of pollutants by conducting inspections of inbound recyclables and waste materials. Following are some control measure options: (a) provide information and education to suppliers of scrap and recyclable waste materials on draining and properly disposing of residual fluids (e.g., from vehicles and equipment engines, radiators and transmissions, oil filled transformers, and individual

containers or drums) and removal of mercury switches from vehicles before delivery to your facility; (b) establish procedures to minimize the potential of any residual fluids from coming into contact with precipitation or runoff; (c) establish procedures for accepting scrap lead-acid batteries (additional requirements for the handling, storage, and disposal or recycling of batteries are contained in the scrap lead-acid battery program provisions in Part 8.N.3.2.6); (d) provide training targeted for those personnel engaged in the inspection and acceptance of inbound recyclable materials; and (e) establish procedures to ensure that liquid wastes, including used oil, are stored in materially compatible and non-leaking containers and are disposed of or recycled in accordance with the Resource Conservation and Recovery Act (RCRA).

- N.3.1.2 *Scrap and Waste Material Stockpiles and Storage (Outdoor)*. Minimize contact of storm water runoff with stockpiled materials, processed materials, and nonrecyclable wastes. Following are some control measure options: (a) permanent or semi-permanent covers; (b) sediment traps, vegetated swales and strips, catch basin filters, and sand filters to facilitate settling or filtering of pollutants; (c) dikes, berms, containment trenches, culverts, and surface grading to divert runoff from storage areas; (d) silt fencing; and (e) oil and water separators, sumps, and dry absorbents for areas where potential sources of residual fluids are stockpiled (e.g., automobile engine storage areas).
- N.3.1.3 *Stockpiling of Turnings Exposed to Cutting Fluids (Outdoor Storage)*. Minimize contact of surface runoff with residual cutting fluids by: (a) storing all turnings exposed to cutting fluids under some form of permanent or semi-permanent cover, or (b) establishing dedicated containment areas for all turnings that have been exposed to cutting fluids. Any containment areas must be constructed of concrete, asphalt, or other equivalent types of impermeable material and include a barrier (e.g., berms, curbing, elevated pads) to prevent contact with storm water run-on. Storm water runoff from these areas can be discharged, provided that any runoff is first collected and treated by an oil and water separator or its equivalent. You must regularly maintain the oil and water separator (or its equivalent) and properly dispose of or recycle collected residual fluids.
- N.3.1.4 *Scrap and Waste Material Stockpiles and Storage (Covered or Indoor Storage)*. Minimize contact of residual liquids and particulate matter from materials stored indoors or under cover with surface runoff. Following are some control measure options: (a) good housekeeping measures, including the use of dry absorbents or wet vacuuming to contain, dispose of, or recycle residual liquids originating from recyclable containers, or mercury spill kits for spills from storage of mercury switches; (b) not allowing wash water from tipping floors or other processing areas to discharge to the storm sewer system; and (c) disconnecting or sealing off all floor drains connected to the storm sewer system.
- N.3.1.5 *Scrap and Recyclable Waste Processing Areas*. Minimize surface runoff from coming in contact with scrap processing equipment. Pay attention to operations that generate visible amounts of particulate residue (e.g., shredding) to minimize the contact of accumulated particulate matter and residual fluids with runoff (i.e., through good housekeeping, preventive

Attachment 1

maintenance, etc.). Following are some control measure options: (a) regularly inspect equipment for spills or leaks and malfunctioning, worn, or corroded parts or equipment; (b) establish a preventive maintenance program for processing equipment; (c) use dry-absorbents or other cleanup practices to collect and dispose of or recycle spilled or leaking fluids or use mercury spill kits for spills from storage of mercury switches; (d) on unattended hydraulic reservoirs over 150 gallons in capacity, install protection devices such as low-level alarms or equivalent devices, or secondary containment that can hold the entire volume of the reservoir; (e) containment or diversion structures such as dikes, berms, culverts, trenches, elevated concrete pads, and grading to minimize contact of storm water runoff with outdoor processing equipment or stored materials; (f) oil and water separators or sumps; (g) permanent or semi-permanent covers in processing areas where there are residual fluids and grease; (h) retention or detention ponds or basins; sediment traps, and vegetated swales or strips (for pollutant settling and filtration); (i) catch basin filters or sand filters.

- N.3.1.6 *Scrap Lead-Acid Battery Program.* Properly handle, store, and dispose of scrap lead-acid batteries. Following are some control measure options (a) segregate scrap lead-acid batteries from other scrap materials; (b) properly handle, store, and dispose of cracked or broken batteries; (c) collect and dispose of leaking lead-acid battery fluid; (d) minimize or eliminate (if possible) exposure of scrap lead-acid batteries to precipitation or runoff; and (e) provide employee training for the management of scrap batteries.
- N.3.1.7 *Spill Prevention and Response Procedures.* (See also Part 2.1.2.4) Install alarms and/or pump shutoff systems on outdoor equipment with hydraulic reservoirs exceeding 150 gallons in the event of a line break. Alternatively, a secondary containment system capable of holding the entire contents of the reservoir plus room for precipitation can be used. Use a mercury spill kit for any release of mercury from switches, anti-lock brake systems, and switch storage areas.
- N.3.1.8 *Supplier Notification Program.* As appropriate, notify major suppliers which scrap materials will not be accepted at the facility or will be accepted only under certain conditions.
- N.3.2 *Waste Recycling Facilities (Liquid Recyclable Materials).*
- N.3.2.1 *Waste Material Storage (Indoor).* Minimize or eliminate contact between residual liquids from waste materials stored indoors and from surface runoff. The plan may refer to applicable portions of other existing plans, such as Spill Prevention, Control, and Countermeasure (SPCC) plans required under 40 CFR Part 112. Following are some control measure options (a) procedures for material handling (including labeling and marking); (b) clean up spills and leaks with dry absorbent materials, a wet vacuum system; (c) appropriate containment structures (trenching, curbing, gutters, etc.); and (d) a drainage system, including appurtenances (e.g., pumps or ejectors, manually operated valves), to handle discharges from diked or bermed areas. Drainage should be discharged to an appropriate treatment facility or sanitary sewer system, or otherwise disposed of properly. These discharges may require coverage under a separate NPDES wastewater permit or industrial user permit under the pretreatment program.

Attachment 1

- N.3.2.2 *Waste Material Storage (Outdoor)*. Minimize contact between stored residual liquids and precipitation or runoff. The plan may refer to applicable portions of other existing plans, such as SPCC plans required under 40 CFR Part 112. Discharges of precipitation from containment areas containing used oil must also be in accordance with applicable sections of 40 CFR Part 112. Following are some control measure options (a) appropriate containment structures (e.g., dikes, berms, curbing, pits) to store the volume of the largest tank, with sufficient extra capacity for precipitation; (b) drainage control and other diversionary structures; (c) corrosion protection and/or leak detection systems for storage tanks; and (d) dry-absorbent materials or a wet vacuum system to collect spills.
- N.3.2.3 *Trucks and Rail Car Waste Transfer Areas*. Minimize pollutants in discharges from truck and rail car loading and unloading areas. Include measures to clean up minor spills and leaks resulting from the transfer of liquid wastes. Following are two control measure options: (a) containment and diversionary structures to minimize contact with precipitation or runoff, and (b) dry clean-up methods, wet vacuuming, roof coverings, or runoff controls.
- N.3.3 *Recycling Facilities (Source-Separated Materials)*. The following identifies considerations for facilities that receive only source-separated recyclables, primarily from non-industrial and residential sources.
- N.3.3.1 *Inbound Recyclable Material Control*. Minimize the chance of accepting nonrecyclables (e.g., hazardous materials) that could be a significant source of pollutants by conducting inspections of inbound materials. Following are some control measure options: (a) providing information and education measures to inform suppliers of recyclables about acceptable and non-acceptable materials, (b) training drivers responsible for pickup of recycled material, (c) clearly marking public drop-off containers regarding which materials can be accepted, (d) rejecting nonrecyclable wastes or household hazardous wastes at the source, and (e) establishing procedures for handling and disposal of nonrecyclable material.
- N.3.3.2 *Outdoor Storage*. Minimize exposure of recyclables to precipitation and runoff. Use good housekeeping measures to prevent accumulation of particulate matter and fluids, particularly in high traffic areas. Following are some control measure options (a) provide totally enclosed drop-off containers for the public; (b) install a sump and pump with each container pit and treat or discharge collected fluids to a sanitary sewer system; (c) provide dikes and curbs for secondary containment (e.g., around bales of recyclable waste paper); (d) divert surface water runoff away from outside material storage areas; (e) provide covers over containment bins, dumpsters, and roll-off boxes; and (f) store the equivalent of one day's volume of recyclable material indoors.
- N.3.3.3 *Indoor Storage and Material Processing*. Minimize the release of pollutants from indoor storage and processing areas. Following are some control measure options (a) schedule routine good housekeeping measures for all storage and processing areas, (b) prohibit tipping floor wash water from draining to the storm sewer system, and (c) provide employee training on pollution prevention practices.

Attachment 1

N.3.3.4 *Vehicle and Equipment Maintenance.* Following are some control measure options for areas where vehicle and equipment maintenance occur outdoors (a) prohibit vehicle and equipment wash water from discharging to the storm sewer system, (b) minimize or eliminate outdoor maintenance areas whenever possible, (c) establish spill prevention and clean-up procedures in fueling areas, (d) avoid topping off fuel tanks, (e) divert runoff from fueling areas, (f) store lubricants and hydraulic fluids indoors, and (g) provide employee training on proper handling and storage of hydraulic fluids and lubricants.

N.4 Additional SWPPP Requirements.

N.4.1 *Drainage Area Site Map.* Document in your SWPPP the locations of any of the following activities or sources that may be exposed to precipitation or surface runoff: scrap and waste material storage, outdoor scrap and waste processing equipment; and containment areas for turnings exposed to cutting fluids.

N.4.2 *Maintenance Schedules/Procedures for Collection, Handling, and Disposal or Recycling of Residual Fluids at Scrap and Waste Recycling Facilities.* If you are subject to Part N.3.1.3, your SWPPP must identify any applicable maintenance schedule and the procedures to collect, handle, and dispose of or recycle residual fluids.

N.5 Additional Inspection Requirements.

N.5.1 *Inspections for Waste Recycling Facilities.* The inspections must be performed quarterly, pursuant to Section E.8 of this permit, and include, at a minimum, all areas where waste is generated, received, stored, treated, or disposed of and that are exposed to either precipitation or storm water runoff.

N.6 Sector-Specific Benchmarks.

Table N-1 identifies benchmarks that apply to Sector N. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table N-1.		
Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector N1. Scrap Recycling and Waste Recycling Facilities except those only receiving source-separate recyclable materials primarily from non-industrial and residential sources (SIC 5093)	Chemical Oxygen Demand (COD)	120 mg/L
	Total Suspended Solids (TSS)	100 mg/L
	Total Recoverable Aluminum	0.75 mg/L
	Total Copper (freshwater) ² Total Copper (saltwater) ¹	Hardness Dependent 0.0048 mg/L
	Total Recoverable Iron	1.0 mg/L
	Total Lead (freshwater) ² Total Lead (saltwater) ¹	Hardness Dependent 0.21 mg/L
	Total Zinc (freshwater) ² Total Zinc (saltwater) ¹	Hardness Dependent 0.09 mg/L

Attachment 1

Table N-1.		
Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration

¹Saltwater benchmark values apply to storm water discharges into saline waters where indicated.

² The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Attachment 3, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Copper (mg/L)	Lead (mg/L)	Zinc (mg/L)
0-24.99 mg/L	0.0038	0.014	0.04
25-49.99 mg/L	0.0056	0.023	0.05
50-74.99 mg/L	0.0090	0.045	0.08
75-99.99 mg/L	0.0123	0.069	0.11
100-124.99 mg/L	0.0156	0.095	0.13
125-149.99 mg/L	0.0189	0.122	0.16
150-174.99 mg/L	0.0221	0.151	0.18
175-199.99 mg/L	0.0253	0.182	0.20
200-224.99 mg/L	0.0285	0.213	0.23
225-249.99 mg/L	0.0316	0.246	0.25
250+ mg/L	0.0332	0.262	0.26

Reserve FTL, Inc., dba Reserve Marine Terminals
11600 S. Burley Ave., Chicago, IL 60617

Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Permit Section
1021 North Grand Avenue East
Springfield, Illinois 62794

November 24, 2015

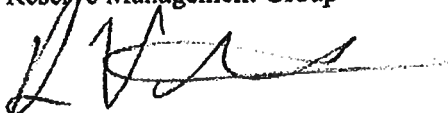
Re: Assignment of Storm Water Permit
Reserve FTL, Inc.
Chicago, IL
NPDES Permit No. ILR006371

Dear Sir/Madam:

Enclosed is the industrial storm water permit assignment agreement for NPDES # ILR006371 along with a copy of the original issued permit. Please see that the originally issued permit under Reserve FTL, Inc. is transferred to South Chicago Property Management LTD. The permit assignment is to cover industrial operations associated with 11600 S. Burley Ave., Chicago, IL 60617.

Should you have any questions or require additional information, please contact me at 440-287-7216 or at dennisstropko@reserve-group.com.

Respectfully submitted,
Reserve Management Group



Dennis Stropko
Health, Safety and Environmental Manager

*Enclosures: Storm Water Permit Assignment Agreement
Original Issued NPDES Permit No. ILR006371*

CC: Reserve Marine Terminals – File
South Chicago Property Management LTD – File

ASSIGNMENT AGREEMENT

THIS ASSIGNMENT AGREEMENT ("Agreement") is made and entered into on November 20, 2015 and is between Reserve FTL, Inc., dba Reserve Marine Terminals and South Chicago Property Management Ltd.

RECITALS

A. Reserve Marine Terminals wishes to assign to South Chicago Property Management Ltd., all of its responsibilities, coverage and liabilities in relation to its existing General NPDES Permit for Storm Water Discharges from Industrial Activities.

B. Such assignment is expressly permitted under Section 13(b) of attachment H of the Permit (standard condition definitions).

The parties therefore agree as follows:

1. Assignment. Reserve Marine Terminals hereby assigns to South Chicago Property Management Ltd., all of its right, title and interest in and to General NPDES Permit No. ILR006371 issued on April 3, 2009 (with an effective date of May 1, 2009) by the Division of Water Pollution Control of the Illinois Environmental Protection Agency ("IEPA"), which is attached as Exhibit 1 to this Agreement (the "Permit").

2. Assignor's Representations and Warranties. Reserve Marine Terminals represents and warrants to South Chicago Property Management LTD., that it has good title to the Permit and holds its interest free and clear of all mortgages, pledges, liens, charges, security interests or encumbrances. Reserve Marine Terminals further acknowledges and agrees that it has taken all steps necessary to make assignment of the Permit valid and enforceable, including through its submission of a notice to renew the current permit, with SWPPP plan on or around March, 2014, and ongoing communications with the IEPA.

3. Acceptance. South Chicago Property Management Ltd., hereby (a) accepts the foregoing assignment and (b) accepts, assumes and agrees to be bound by all of the terms and conditions of the permit, included as it may be modified by the IEPA upon its consent of this assignment.

4. General Provisions.

(a) *Counterparts; Electronic Transmission.* This Agreement may be executed in counterparts, each of which shall be an original, but all of which shall constitute one and the same Agreement. Signatures to this Agreement that are transmitted electronically (i.e., via e-mail or facsimile) shall be binding.


(b) *Binding Effect.* This Agreement and all the terms and provisions hereof shall be binding upon the parties' respective legal representatives, heirs, successors and assigns.

(c) *Further Assurances.* Each of the parties hereto shall hereafter execute and deliver such further agreements and do such further acts and things as may be required or useful to carry out the intent and purpose of this Agreement and as are not inconsistent with the terms hereof.

The undersigned are signing this Agreement effective as of the date stated on the introductory paragraph.

ASSIGNOR:

Reserve FTL Inc dba Reserve Marine
Terminals

By:  _____

Date: 11-25-15

ASSIGNEE:

South Chicago Property Management Ltd.,

By:  _____

Date: 11-25-15

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
NOTICE OF INTENT (NOI)
FOR
GENERAL PERMIT TO DISCHARGE STORM WATER
ASSOCIATED WITH INDUSTRIAL ACTIVITY
(EXCLUDING CONSTRUCTION ACTIVITY)**

OWNER/OPERATOR INFORMATION

NAME:	LAST: Reserve FTL, Inc. FIRST: MIDDLE INITIAL (OR COMPANY NAME):	OWNER TYPE:	private
MAILING ADDRESS:	11600 South Burley Ave.		
CITY:	Chicago	STATE:	IL
CONTACT PERSON:	Dennis Stropko, Env. Mgr.; Hal Tolin, Fac. Mgr.	TELEPHONE NUMBER:	AREA CODE: 773 NUMBER: 721-8740

FACILITY/SITE INFORMATION

SELECT ONE:	<input type="checkbox"/> NEW SITE <input checked="" type="checkbox"/> RENEWAL <input type="checkbox"/> CHANGE OF INFORMATION TO GENERAL NPDES PERMIT NO.: ILR00 8371		
FACILITY NAME:	Reserve Marine Terminals	OTHER NPDES PERMIT NUMBERS:	
FACILITY LOCATION:	11600 South Burley Ave.	TELEPHONE NUMBER:	AREA CODE: 773 NUMBER: 721-8740
CITY:	Chicago	ST:	IL
ZIP:	60617	LATITUDE:	DIG. MIN. SEC. 41 41 9.8
COUNTY:	Cook	SECTION:	19
SIC OR DESIGNATED ACTIVITY CODE(S):	8093 PRIMARY	TOWNSHIP:	37N
	N/A 2ND	RANGE:	15E
	N/A 3RD		
	N/A 4TH		
STORM WATER POLLUTION PREVENTION PLAN COMPLETED AGENCY PRIOR TO COVERAGE LETTER SENT BY AGENCY?			
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO (IF NO, SEPARATE NOTIFICATION REQUIRED TO AGENCY)			

RECEIVING WATER INFORMATION

DOES YOUR STORM WATER DISCHARGE DIRECTLY TO:	<input type="checkbox"/> WATER OF THE STATE OR <input type="checkbox"/> STORM SEWER	OWNER OF STORM SEWER SYSTEM:	N/A	Water ponds on facility - indirect disch
NAME OF CLOSEST RECEIVING WATER:	Cajumel River			
DOES QUANTITATIVE DATA CURRENTLY EXIST WHICH DESCRIBES THE CONCENTRATION OF POLLUTANTS IN THE STORM WATER DISCHARGES?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			

ADDITIONAL INFORMATION

ATTACH A LIST OF MATERIAL HANDLING ACTIVITIES, RAW MATERIALS, INTERMEDIATE PRODUCTS, FINAL PRODUCTS, WASTE MATERIALS, BY-PRODUCTS OR INDUSTRIAL MACHINERY THAT IS EXPOSED TO STORMWATER.
ATTACH A LIST IF YOU HAVE OTHER INDUSTRIAL ACTIVITIES TAKING PLACE AT YOUR FACILITY NOT COVERED BY THE ABOVE SIC CODES.
FORM 2-F ATTACHED <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (SEE INSTRUCTIONS)

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the provisions of the permit, including the development and implementation of a storm water pollution prevention plan and a monitoring program plan, will be complied with. I also certify that, to the best of my knowledge, the storm water which is discharged from this facility/site does not contain process wastewater, domestic wastewater, or cooling water.

APPLICANT SIGNATURE: [Signature] Title: Environmental Mgr. Date: 5/28/08

MAIL COMPLETED FORM TO:
(DO NOT SUBMIT ADDITIONAL DOCUMENTATION UNLESS REQUESTED)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF WATER POLLUTION CONTROL
ATTN: PERMIT SECTION
POST OFFICE BOX 19276
SPRINGFIELD, ILLINOIS 62794-9276
www.ops.state.il.us

FOR OFFICE USE ONLY

LOG:
PERMIT NO. ILR00 _____
DATE:

Information required by this form must be provided to comply with 416 ILCS 820 (1996). Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Farms Management Center.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR

DOUGLAS P. SCOTT, DIRECTOR

217-782-0610

April 3, 2009

Re: General NPDES Permit ILR00 for Industrial Storm Water

Dear Permittee:

Enclosed with this letter is your reissued NPDES General Storm Water Permit ILR00 for the discharge of industrial storm water. Significant changes have been made in the permit based on comments received by the Agency. Please note the following changes:

1. The permit now requires the electronic submission of a Storm Water Pollution Prevention Plan (SWPPP) for all new and existing discharges. The address to which the SWPPPs shall be submitted is epa.indilr00swppp@illinois.gov. For existing permits the SWPPP shall be submitted at the same time as the annual report.
2. The permit now requires the electronic submission of Annual Inspection Reports to epa.indannualinsp@illinois.gov.
3. The permit now contains numerous changes to the contents of the SWPPP.
4. A revised Notice of Intent has been developed which contains additional information similar to USEPA's Multi-Sector General Permit.

Should you have any questions or comments regarding this letter or its contents please contact Terri LeMasters at the above phone number and address.

Sincerely,

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

General NPDES Permit No. IJR00

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276
www.epa.state.il.us

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

**General NPDES Permit
For
Storm Water Discharges from Industrial Activities**

Expiration Date: April 30, 2014

Issue Date: April 3, 2009

Effective Date: May 1, 2009

Discharges authorized by this General Permit: In compliance with the provisions of the Illinois Environmental Protection Act, the Illinois Pollution Control Board Rules and Regulations (35 Ill. Adm. Code, Subtitle C, Chapter 1) and the Clean Water Act, the following discharges may be authorized by this permit in accordance with the conditions herein:

Discharges of storm water associated with industrial activity, as defined and limited herein. Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.

This general permit regulates only storm water discharges from a facility. Other discharges such as process wastewater or cooling water shall be regulated by other NPDES permits.

Receiving waters: Discharges may be authorized to any surface water of the State.

To receive authorization to discharge under this general permit, a facility operator must either submit an application as described in the permit conditions to the Illinois Environmental Protection Agency or have a valid Illinois General NPDES Permit for industrial storm water. Authorization, if granted, will be by letter and include a copy of this permit.



Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

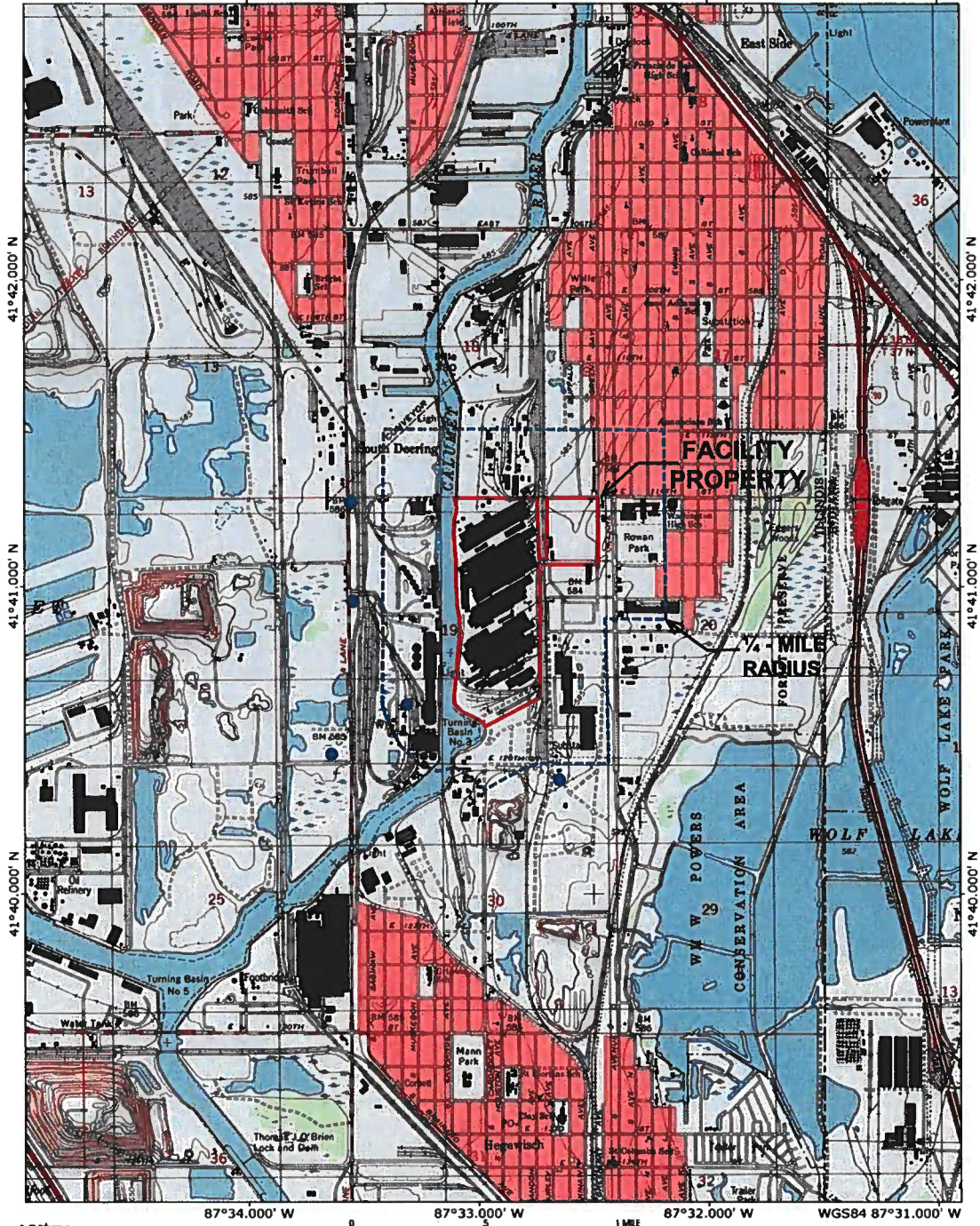
APPENDIX B

Reserved

APPENDIX C

Facility Figures

TOPO! map printed on 09/28/15 from "Illinois.tpo" and "Untitled.tpg"
 87°34.000' W 87°33.000' W 87°32.000' W WGS84 87°31.000' W



Water Supply Well

Map created with TOPO!® ©2001 National Geographic (www.nationalgeographic.com/topo)

K P R G
 ENVIRONMENTAL CONSULTATION & REMEDIATION
 KPRG and Associates, Inc.

KPRG
 Project No.:
 18115

FIGURE 1. FACILITY LOCATION MAP
SOUTH CHICAGO PROPERTY
MANAGEMENT CO., LLC
11600 SOUTH BURLEY AVENUE
CHICAGO, ILLINOIS

Source: National Geographic USGS Seamless Topo

Figure 2

Facilities Feature Map

Under Revision

APPENDIX D

Quantitative Stormwater Sampling Data

APPENDIX E

Non-stormwater Discharge Certification

Name of Facility: South Chicago Property Management Co., LLC

Address of Facility: 11600 South Burley Avenue - Chicago, IL

NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION

Storm water discharges from the facility property entering a water of the State have been evaluated for the presence of illicit discharges and non-storm water contributions as described below.				
Date of Test or Evaluation	Outfall/Areas Directly Observed During the Test	Method Used to Test or Evaluate Discharge	Describe Results from Test for the Presence of Non-Storm Water Discharge	Name of Person Who Conducted the Test or Evaluation
6-Jan-2021	Calumet River Frontage and entire Facility	Dry Weather Visual Observation	No non-stormwater discharges identified	Frank Santella - KPRG and Associates, Inc.
CERTIFICATION				
I, a responsible corporate official, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.				
A. Name & Official Title (type or print)			B. Area Code and Telephone No.	
C. Signature			D. Date Signed	

APPENDIX F

Employee Training Documentation

APPENDIX G

Routine Facility Inspection Forms

STORMWATER POLLUTION PREVENTION PLAN

ROUTINE FACILITY INSPECTION FORM

FACILITY NAME: _____

INSPECTOR'S NAME: _____

INSPECTION DATE: _____ INSPECTION TIME: _____

INSPECTION PERFORMED DURING: DRY WEATHER WET WEATHER RUNOFF EVENT
 IF INSPECTION IS PERFORMED WHEN RUNOFF IS NOT OCCURRING, INDICATE REASON:
 INSUFFICIENT RAINFALL OR SNOWMELT TO PRODUCE RUNOFF. OTHER: _____

- INSTRUCTIONS:**
1. Perform a walk-through of the facility. Check off all items that are inspected. Items listed below apply to storage areas as well as loading/unloading areas
 2. Record any maintenance that is needed, corrective actions taken, and date when maintenance was performed. If additional space is needed, use the *Maintenance Required/Corrective Actions* section on Page 2.
 3. Complete the *SWPPP Revisions* section.

HOUSEKEEPING	MAINTENANCE REQUIRED/CORRECTIVE ACTIONS TAKEN
<input type="checkbox"/> Proper disposal of litter and windblown trash.	
<input type="checkbox"/> Proper storage or disposal of empty drums and containers.	
<input type="checkbox"/> Condition of trash dumpsters.	
EQUIPMENT AND MATERIAL STORAGE	MAINTENANCE REQUIRED/CORRECTIVE ACTIONS TAKEN
<input type="checkbox"/> Concrete dikes and pads (good condition, no accumulations of oil or fuel, etc.).	
<input type="checkbox"/> Oil or fuel dispensing stations (good condition, no spillage or accumulations of oil or fuel, etc.).	
<input type="checkbox"/> New drums and containers (stored properly, in good condition, labeled, lids in place, etc.).	
<input type="checkbox"/> Drums and containers in use (stored properly, in good condition, labeled, lids in place, etc.).	
<input type="checkbox"/> Obsolete and unused equipment (located in proper storage areas, no signs of leakage, etc.).	
<input type="checkbox"/> Storage tanks and raw material containers (in good condition, no signs of leaks, no severe rust or damage, etc.).	
BMPs (Structural and Non-structural)	MAINTENANCE REQUIRED/CORRECTIVE ACTIONS TAKEN
<input type="checkbox"/> Containment walls (structures are intact, no erosion or washouts, material stored does not extend beyond soil berms and concrete seawall, operating correctly, etc.): - Aggregate storage pile - Concrete seawall along Calumet River frontage - Soil berm on northern and southern Facility boundaries	
<input type="checkbox"/> Slope of ground in the area surrounding the: - Prepared and unprepared scrap piles - Calumet River frontage - Aggregate storage pile - New steel storage - Southside Side Recycling drainage area	
<input type="checkbox"/> Catch basins along roads and paved areas (in good condition, entrance to basin is free of obstructions, no debris in basins, etc.).	

STORMWATER POLLUTION PREVENTION PLAN

ROUTINE FACILITY INSPECTION FORM (continued)

GENERAL	MAINTENANCE REQUIRED/CORRECTIVE ACTIONS TAKEN
<input type="checkbox"/> Unpaved roads and surfaces (in good condition, no erosion or ruts).	
<input type="checkbox"/> Any evidence of stormwater discharge.	
<input type="checkbox"/> Identification of new problem areas or potential pollutant sources.	
<input type="checkbox"/> Spill response equipment available.	
<input type="checkbox"/> Dust/litter in vicinity or on Calumet River waterway.	
<input type="checkbox"/> Southside Recycling asphalt-lined retention basins and treatment plant.	
SWPPP REVISIONS	
If deficiencies were noted above, are additional measures required to reduce pollutant loadings? <input type="checkbox"/> YES <input type="checkbox"/> NO	
If deficiencies were noted above, are modifications to the SWPPP required? <input type="checkbox"/> YES <input type="checkbox"/> NO	
If yes, record the revisions on the log contained in Appendix K in the SWPPP.	
ASSESSMENT	
Provide an assessment of the integrity of stormwater discharge diversions, sediment control and collection systems, and containment structures: _____	

MAINTENANCE REQUIRED/CORRECTION ACTIONS TAKEN (additional explanation)	
Provide additional information on Maintenance Required/Corrective Actions Taken, if necessary.	

APPENDIX H

Containment Inspection and Drainage Records

CONTAINMENT INSPECTION & DRAINAGE RECORD

1 Containment Area	2 Date	3 Stormwater Release Needed		4 Presence of Oil or Sheen		5 Clean Up Actions Taken	6 Signature of Supervising Manager
		Yes	No	Yes	No		

Form Applicability: Diked or contained areas around tanks, vehicle drainage area, motor block storage pads, etc. containing new and used oil or fuel that accumulate rainwater are required to be inspected and drained after each rain event. Accumulations within the containment area are to be inspected for the presence of oil or sheen prior to discharging to the ground surface.

FORM INSTRUCTIONS

Containment inspection & drainage is to be performed by the Facility Manager or by responsible personnel designated by the Facility Manager who oversees work.

1. Identify by TANK ID No. or containment area name
2. Enter the date that the inspection and drainage event is being performed
3. Is there a build-up of rainwater within the secondary containment that needs to be released? **Yes**, continue with the following questions. **If no, proceed to Column 6**
4. Inspect the rainwater for sheen or presence of product. **If no sheen or product is present, skip to Column 6.** If a visible sheen or oil is present:
 - a. Contact a certified company to pump out containment, or remove oil with absorbent "oil sponge," blankets, booms or other absorbent material and dispose of properly.
 - b. Once clean up is completed, drain clean rainwater by opening valve or manually starting pump.
 - c. Ensure that the valve is resealed or relocked or that the pump is disengaged or removed.
5. Briefly describe actions taken (i.e., absorbent pads, etc.)
6. Facility Manager is to inspect containment area and assure valve closure/pump disengagement prior to signing off.

IF CONTENTS OF SPILL KIT USED IN THIS OPERATION - ENSURE THEY ARE REPLENISHED AS SOON AS POSSIBLE.

Keep completed record with SWPPP

APPENDIX I

Quarterly Visual Monitoring Logs

Quarterly Visual Monitoring Log

(Complete a separate form for each outfall you assess)

Name of Facility: South Chicago Property Management Co., LLC NPDES Permit No. ILR006371

Outfall Name: "Substantially Identical Outfall"? No Yes

Person(s)/Title(s) collecting sample:

Person(s)/Title(s) examining sample:

Date & Time Discharge Began:

Date & Time Sample Collected:

Date & Time Sample Examined:

Nature of Discharge: Rainfall Snowmelt

If rainfall: Rainfall Amount (in Inches): Previous Storm Ended > 72 hours Yes No* (explain):
Before Start of This Storm?

Parameter

Color None Other (describe):

Odor None Musty Sewage Sulfur Sour Petroleum/Gas
 Solvents Other (describe):

Clarity Clear Slightly Cloudy Cloudy Opaque Other (describe):

Floating Solids No Yes (describe):

Settled Solids** No Yes (describe):

Suspended Solids No Yes (describe):

Foam (gently shake sample) No Yes (describe):

Oil Sheen None Flecks Globs Sheen Slick
 Other (describe):

Other Obvious Indicators No Yes (describe):
of Stormwater Pollution

* The 72-hour interval can be waived when the previous storm did not yield a measurable discharge or if you are able to document (attach applicable documentation) that less than a 72-hour interval is representative of local storm events during the sampling period.

** Observe for settled solids after allowing the sample to sit for approximately one-half hour.

Detail any concerns, additional comments, descriptions of pictures taken, and any corrective actions taken below (attach additional sheets as necessary).

Certification by Facility Responsible Official

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name:

B. Title:

C. Signature:

D. Date Signed:

APPENDIX J

IEPA Annual Inspection Reports



Illinois Environmental Protection Agency

Bureau of Water • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

Division of Water Pollution Control ANNUAL FACILITY INSPECTION REPORT

for NPDES Permit for Storm Water Discharges Associated with Industrial Site Activities

This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Compliance Assurance Section at the above address. Complete each section of this report. Place a NA in sections that do not apply to your operation.

Report Period: From: _____ To: _____

Permit No. ILR00 _____

OWNER/OPERATOR INFORMATION: (As it appears on the current permit)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____ Telephone: _____

Contact Person: _____ (Person responsible for Annual Report)

FACILITY/SITE INFORMATION: (As it appears on the current permit)

Facility Name: _____ Primary SIC Code: _____

Facility Location: _____

City: _____ IL Zip: _____ County: _____

RECEIVING WATER INFORMATION:

Storm Sewer Owner of Storm Sewer Systems: _____

Waters of the State Closest Receiving Waters: _____

ADDITIONAL INFORMATION:

Has this facility received an NPDES Permit under a different owner/operator name in the past? If so, list last name permit was issued to: _____

Attach information on any activity that has occurred at this facility during the report period that may have resulted in pollutants discharged to storm water runoff (e.g. Spills).

Attach information on any changes to the facility or the activity occurring at the facility that resulted in significant changes to the SWPPP.

Attach information concerning quarterly visual observations of discharges as found in Section E, Item 8 of the Permit.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Owner Signature:

Date:

Printed Name:

Title:

EMAIL COMPLETED FORM TO: epa.indannualinsp@illinois.gov

or Mail to: ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL
COMPLIANCE ASSURANCE SECTION #19
1021 NORTH GRAND AVENUE EAST
POST OFFICE BOX 19276
SPRINGFIELD, ILLINOIS 62794-9276

APPENDIX K

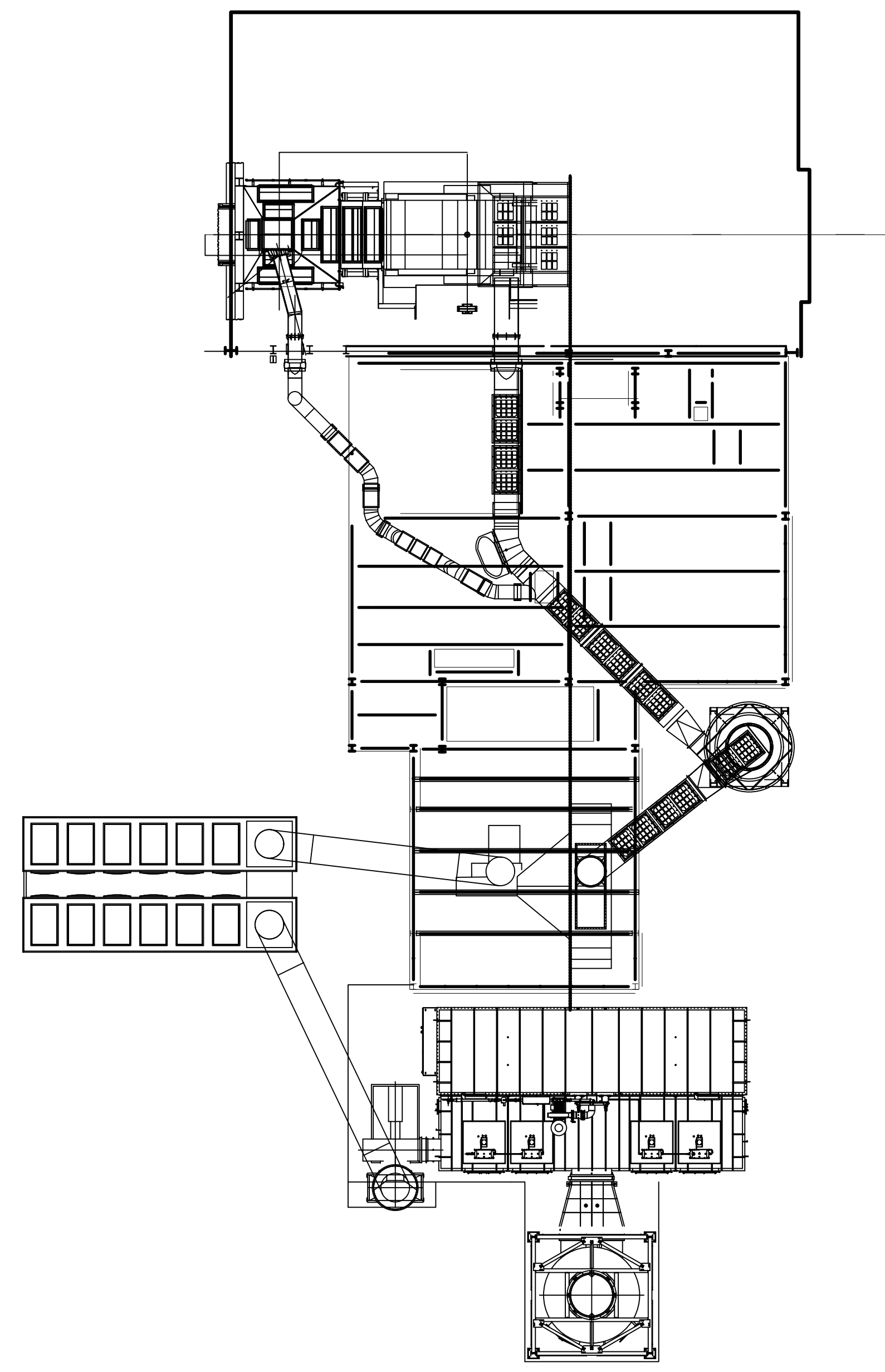
Corrective Action Form

APPENDIX L

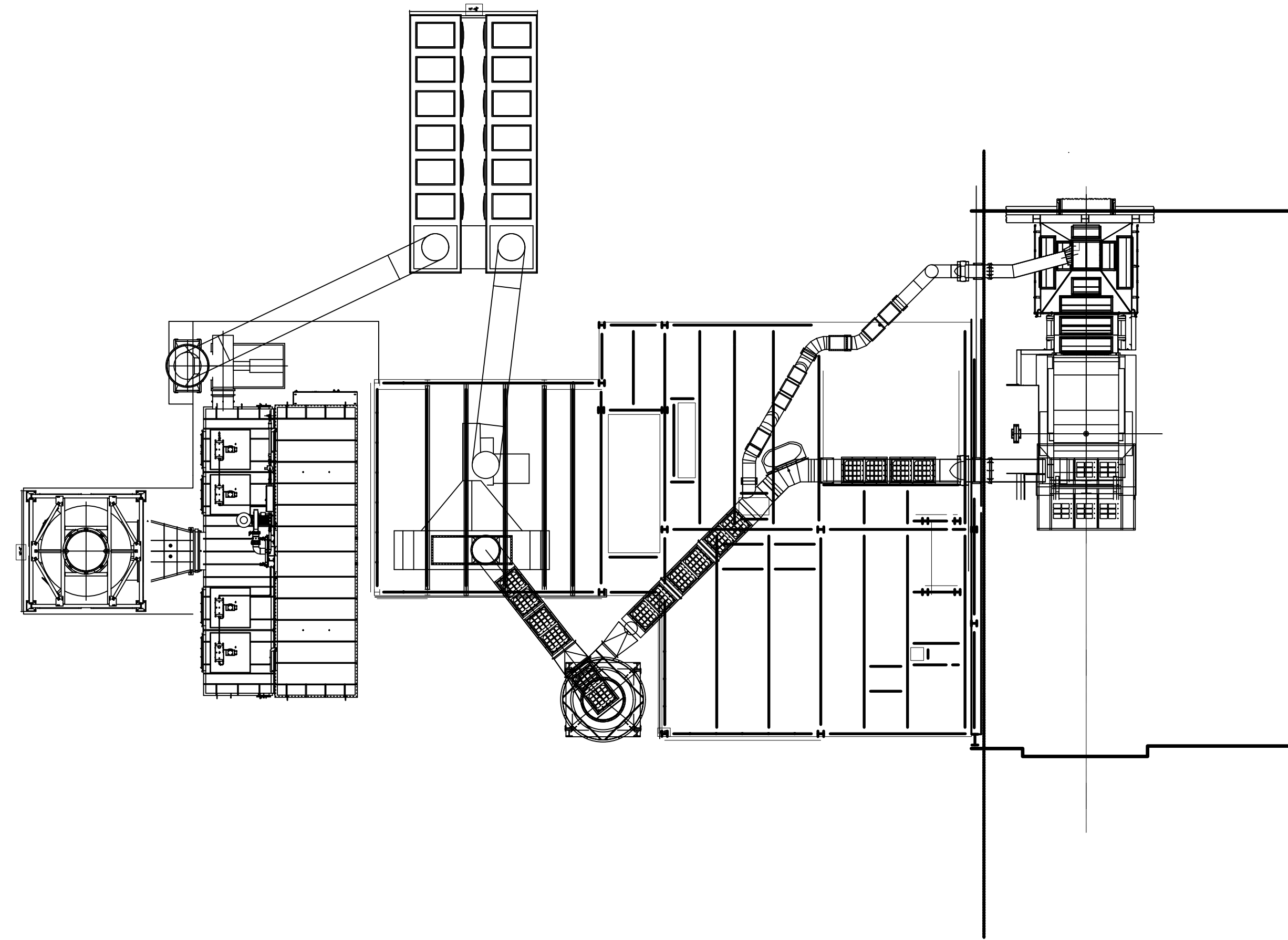
SWPPP Revision History

HISTORY OF REVISIONS

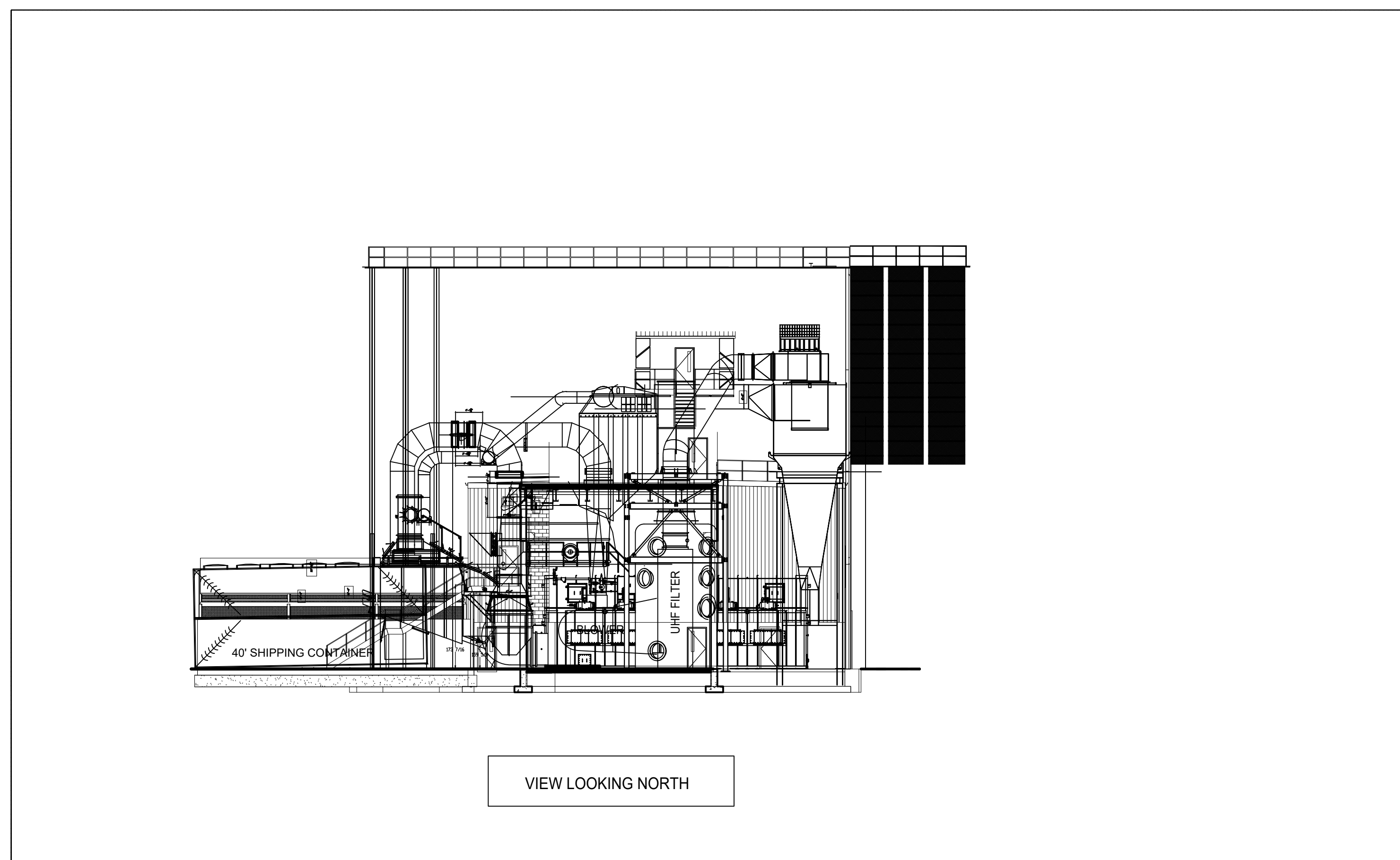
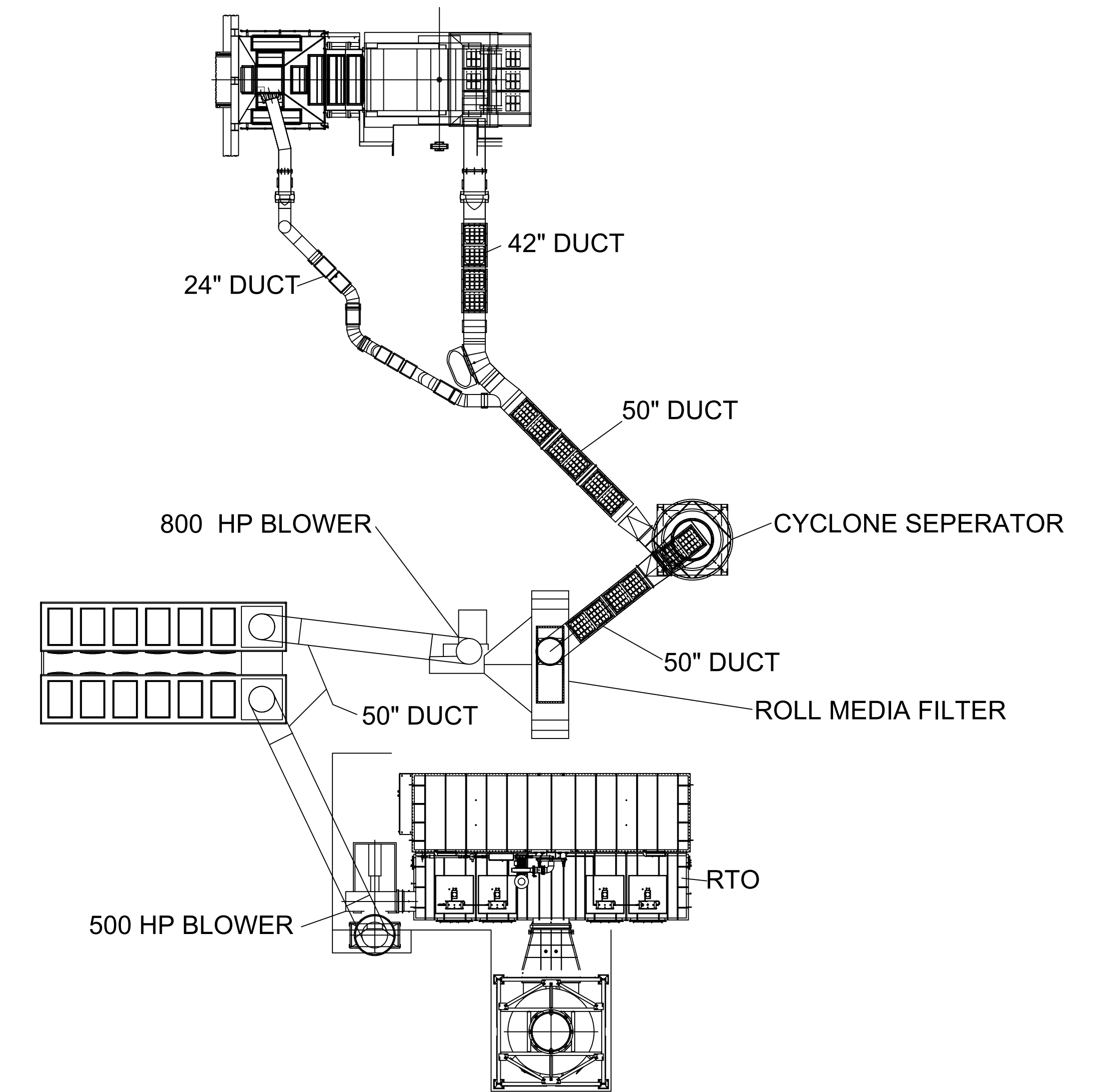
Revision No:	1	Date:	4/2018	Revised By:	D. Stropko
Section(s) Revised:	2.2, 2.3, 2.4, 3.2, 3.5, 4.8				
Purpose of Revision:	Removal of Steve Petty and addition of Dan Echavarria to contacts; Revise facility descriptions; Reclassify SSR Car Processing Pad as INACTIVE.				
Revision No:	2	Date:	12/2018	Revised By:	D. Stropko
Section(s) Revised:	2.4, 2.6, 3.1, 4.3, 4.9, 6.1				
Purpose of Revision:	Inclusion of new indoor sand/fines screening plant and related controls/information				
Revision No:	3	Date:	9/2019	Revised By:	D.Stropko
Section(s) Revised:	2.2, 2.3,				
Purpose of Revision:	Removal of Dan Echavarria, addition of Ray Sowa				
Revision No:	4	Date:	3/2020	Revised By:	D Stropko
Section(s) Revised:	2.2, 2.3				
Purpose of Revision:	Addition of Nicholas Blachuciak and remove Ray Sowa				
Revision No:	5	Date:	3/2021	Revised By:	Stropko, Santella
Section(s) Revised:	Multiple				
Purpose of Revision:	Updates to SWPPP to reflect cut out of future Southside Recycling footprint from facility drainage map; discussion of new processes and flows and confirm with current permit requirements.				



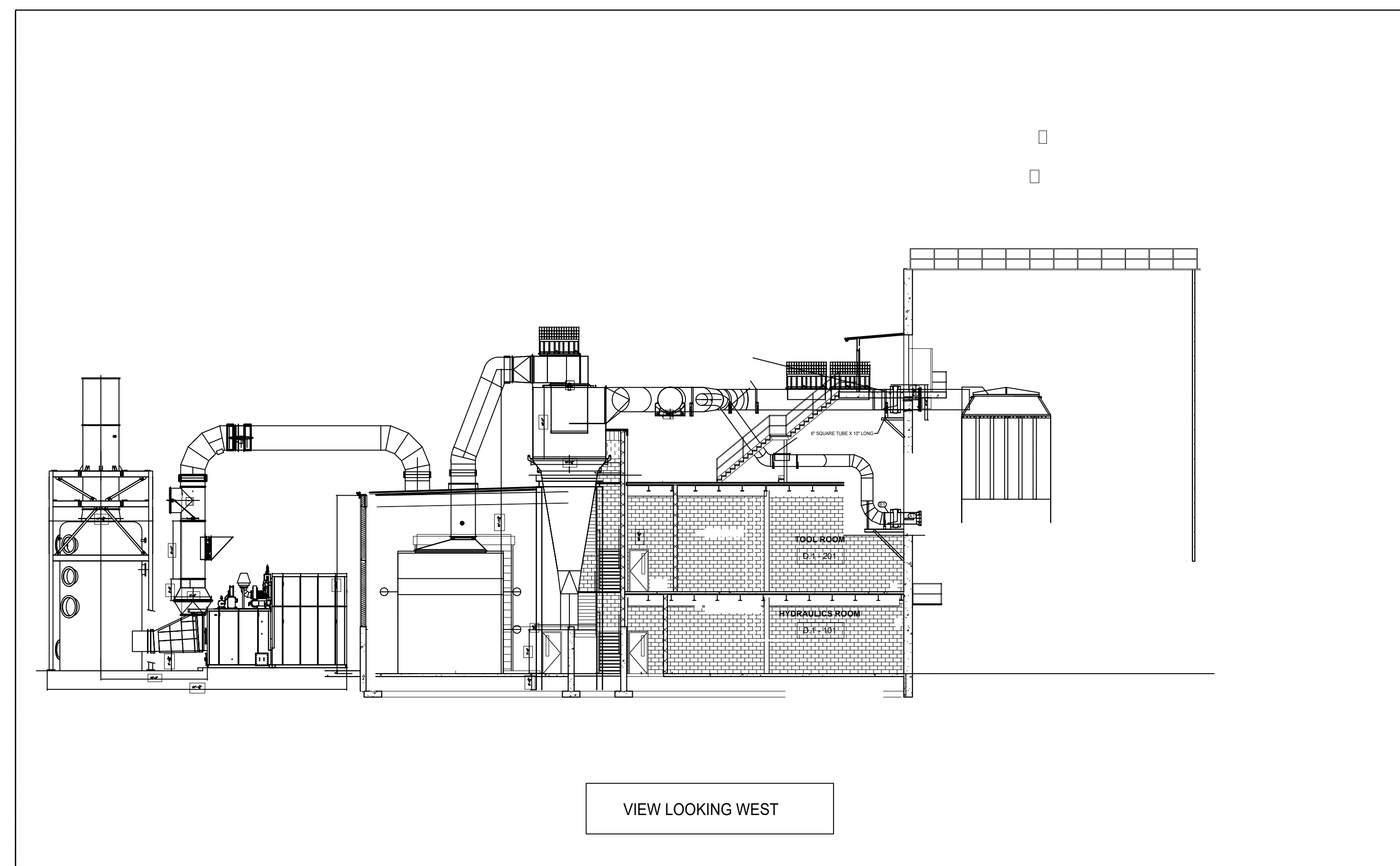
PLAN VIEW



PLAN VIEW



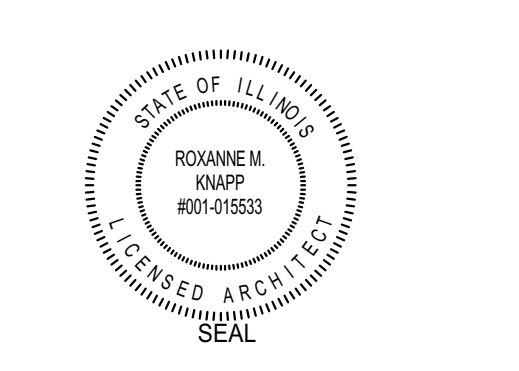
VIEW LOOKING NORTH



VIEW LOOKING WEST



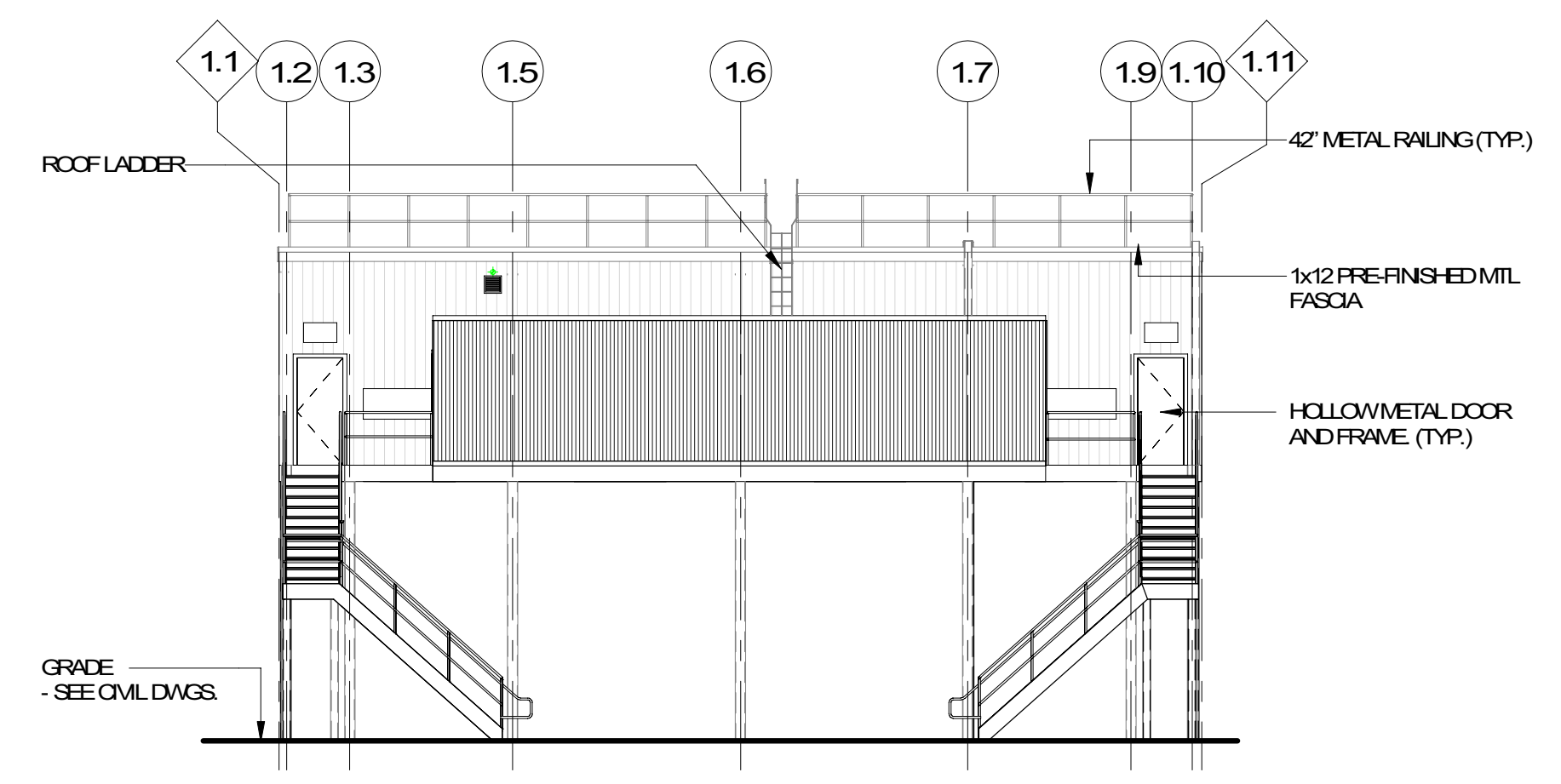
KNIGHT
 Engineers & Architects
 Knight E/A, Inc.
 221 N. LaSalle Street
 Suite 300
 Chicago, IL 60601
 Phone: (312) 577-3300
 knightea.com



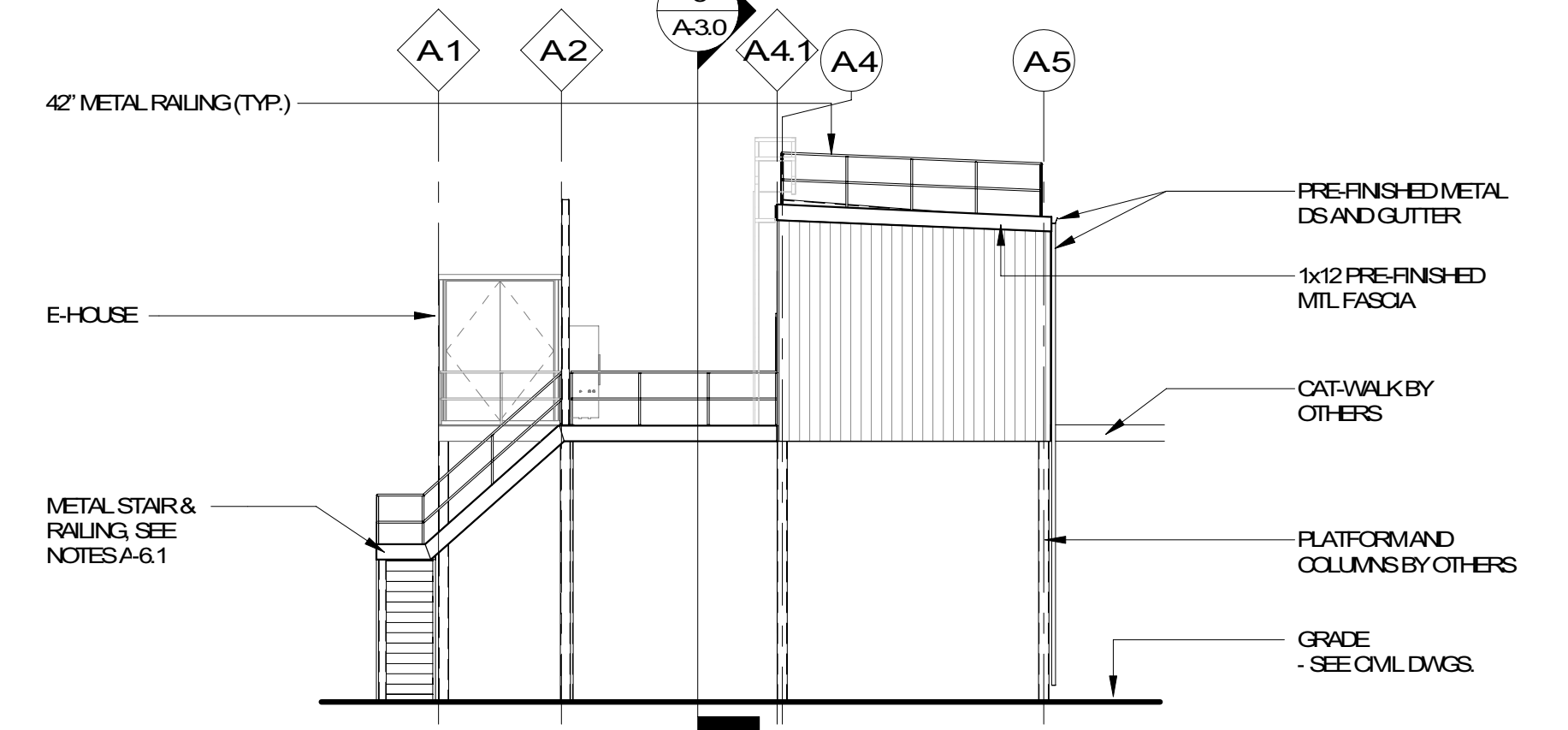
PROJECT: **GENERAL III, LLC**
STRUCTURE D - SHREDDER SORTING BUILDINGS
 11554 S. AVE. O
 CHICAGO, IL, 60617

3	06/22/2020	ISSUE FOR PERMIT REVISION
2	04/01/2020	REVISION TO PERMIT
1	09/27/2019	ISSUED FOR PERMIT REVIEW
#	DATE	ISSUE

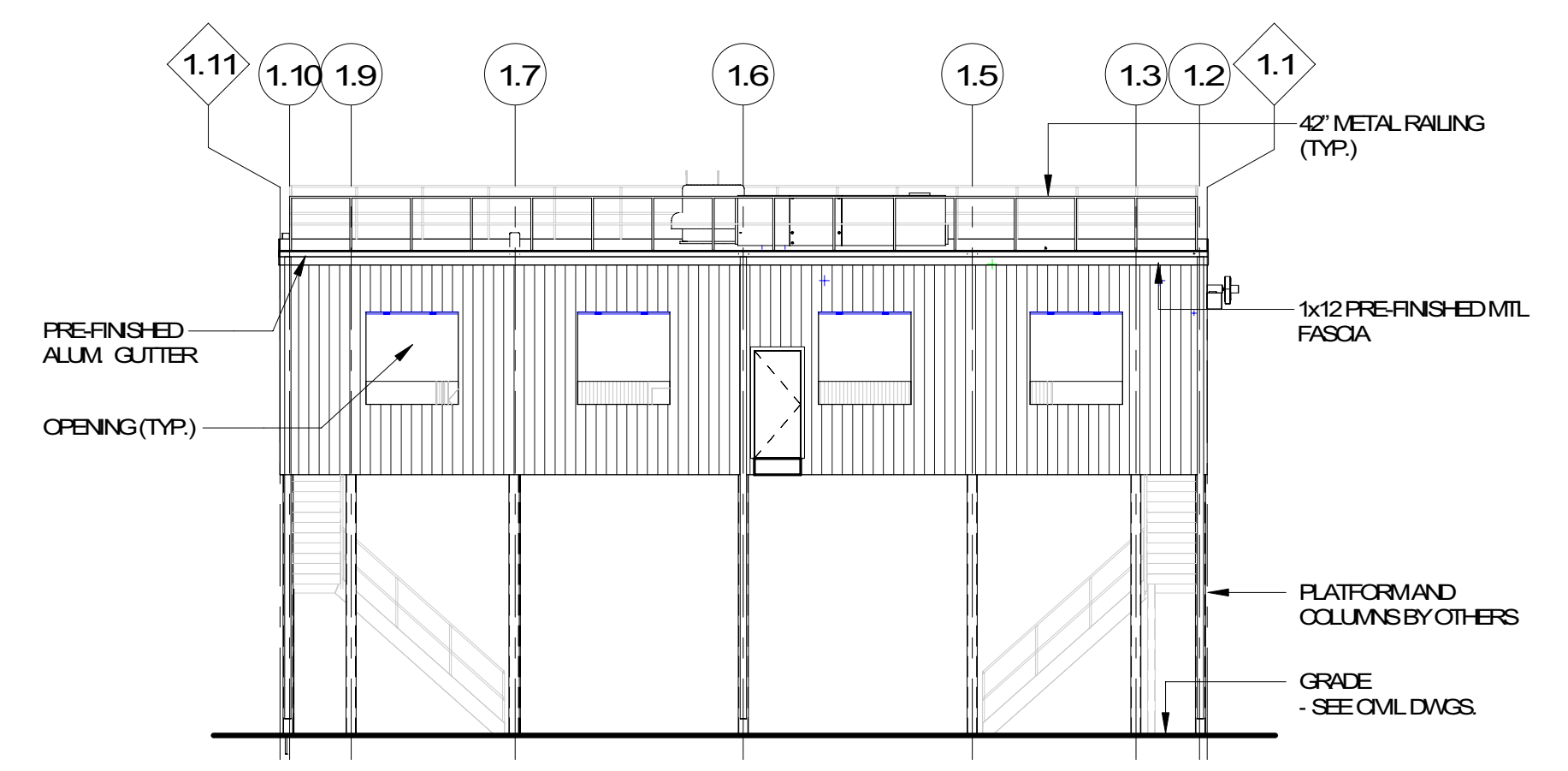
EXTERIOR ELEVATIONS	
PROJECT #	DATE
7563	09/27/2019
A-20	



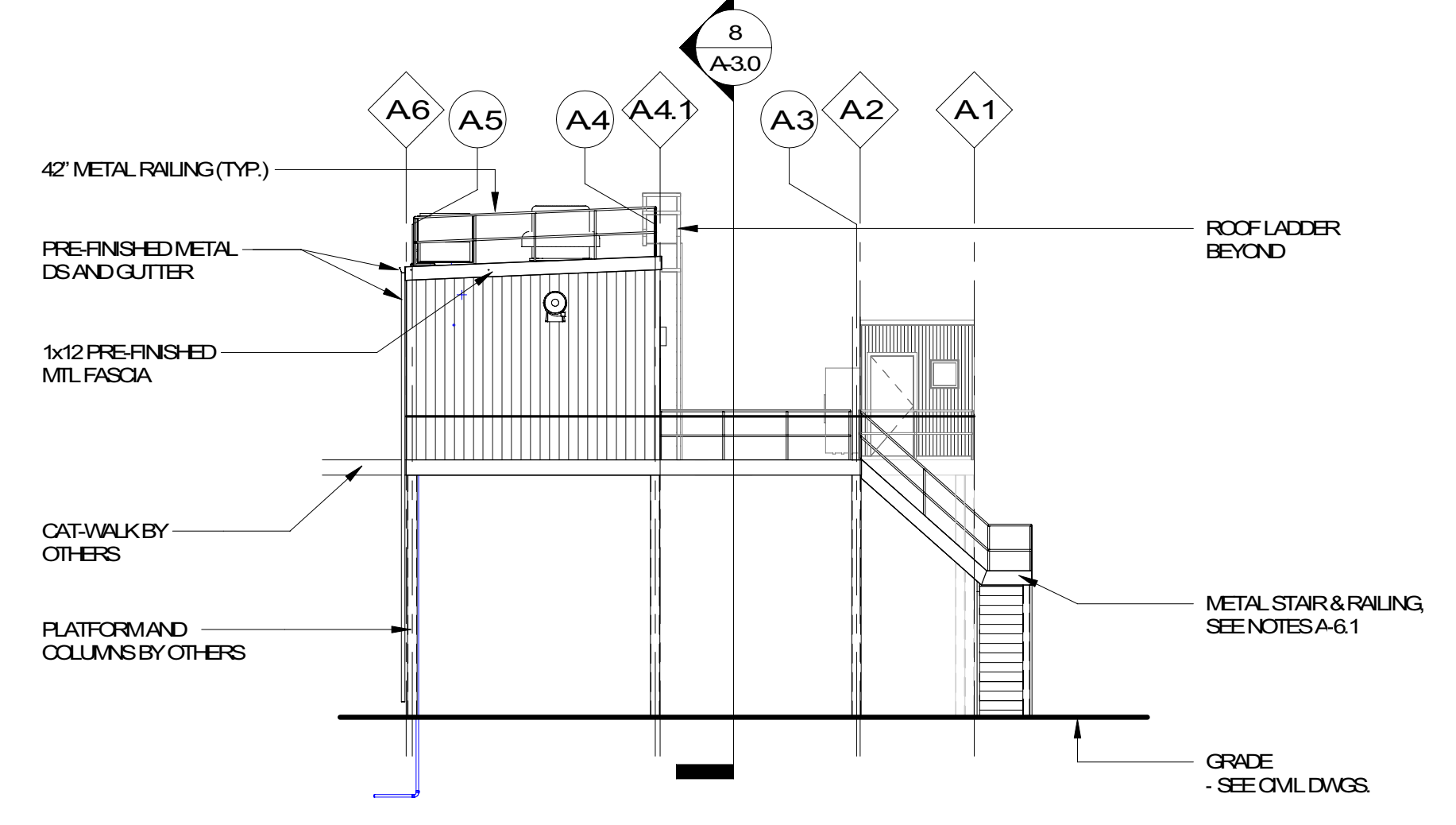
6 WEST ELEVATION - PICKER HOUSE
 3/32" = 1'-0"



5 SOUTH ELEVATION - PICKER HOUSE
 3/32" = 1'-0"



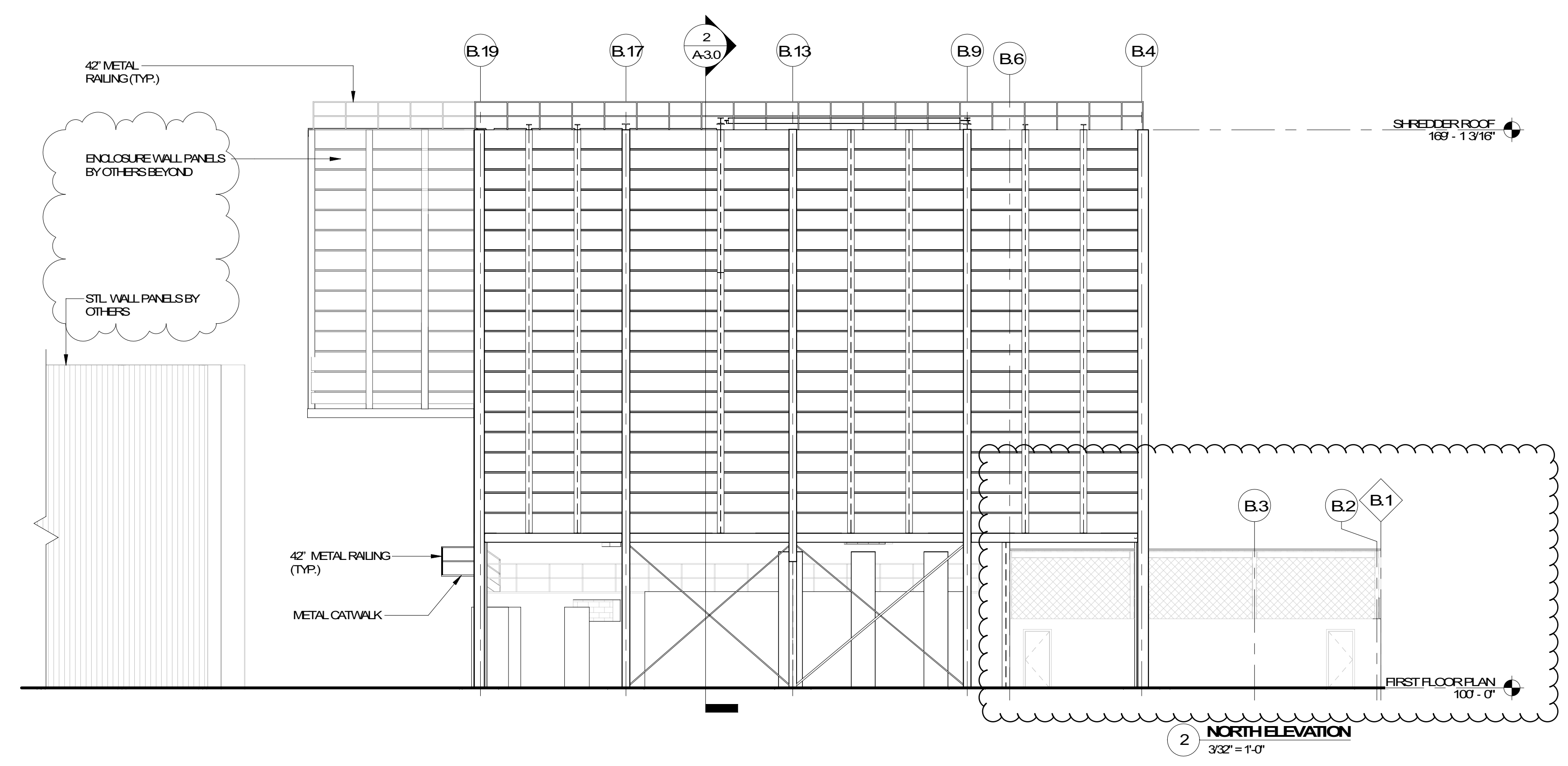
4 EAST ELEVATION - PICKER HOUSE
 3/32" = 1'-0"



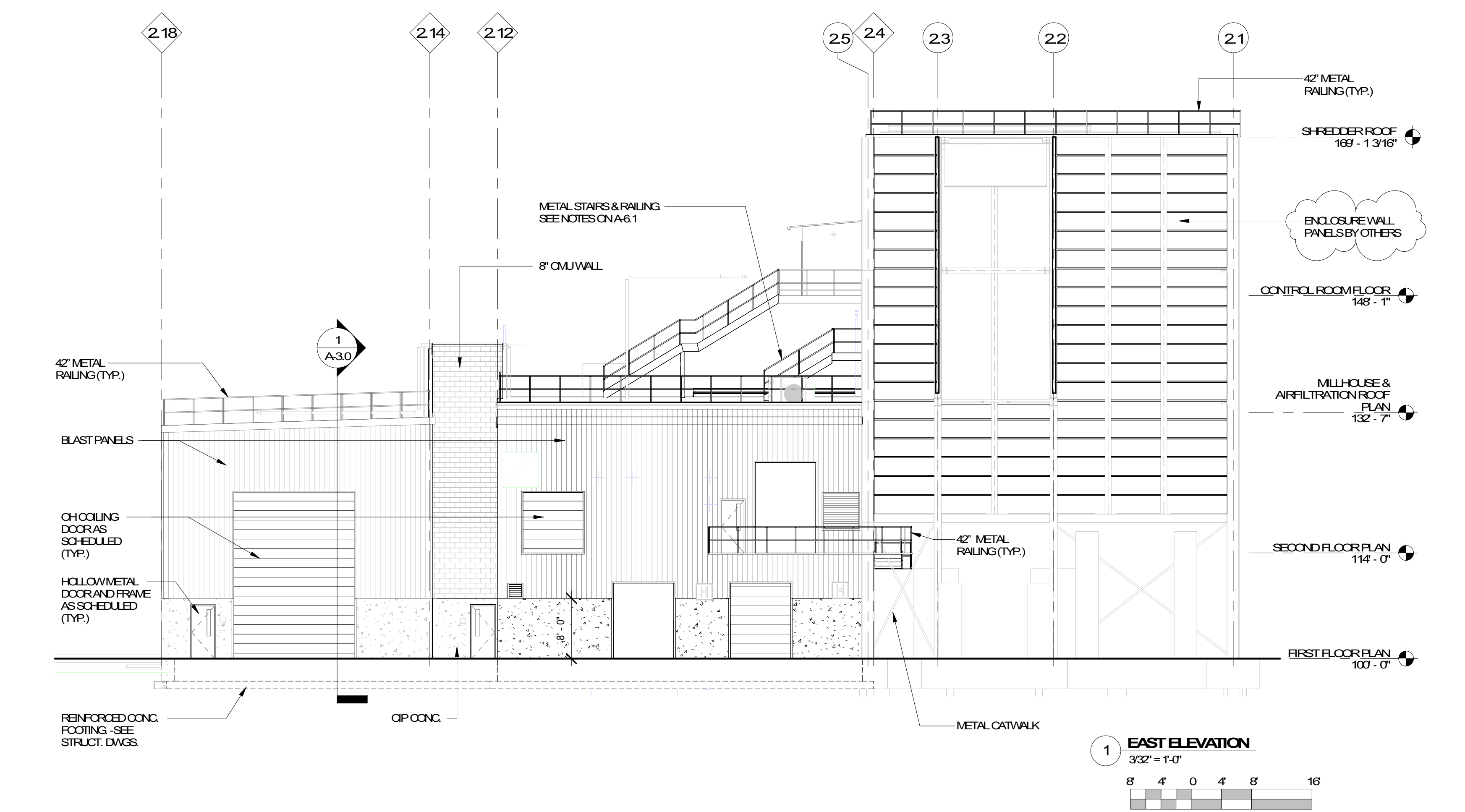
3 NORTH ELEVATION - PICKER HOUSE
 3/32" = 1'-0"



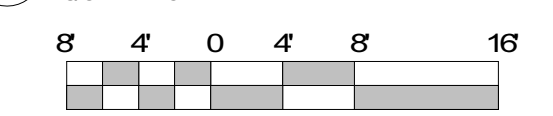
DIRECT DEVELOPER SERVICES REVISION TO PERMIT # 100873689 (BLDG D) REVISIONS INCLUDE :** 1. BREAK-ROOM HAS BEEN REMOVED. 2. THE D.4 / FULLY ENCLOSED TRANSFORMER ENCLOSURE HAS BEEN ADDED. 3. THE D.6 & D.7 / DEBRIS PILE WALLS HAVE BEEN UPDATED. 4. D.1 / MILLHOUSE EGRESS HAS BEEN REVISED. 5. THERE HAVE BEEN ADDITIONAL MINIMAL DIMENSIONAL CHANGES AND CLARIFICATIONS. 6 SHOP SUBMITTALS FOR THE CONTROL TOWER. / 11-6-2020 / DIST PMD 6 / STAMP FOR 11554 S AVE O / BLDG D



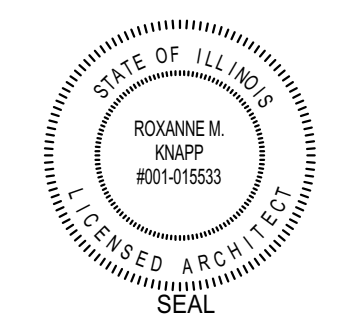
2 NORTH ELEVATION
 3/32" = 1'-0"



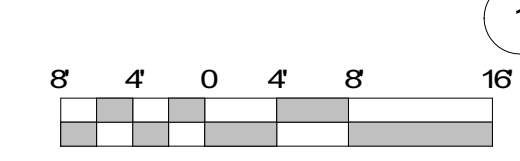
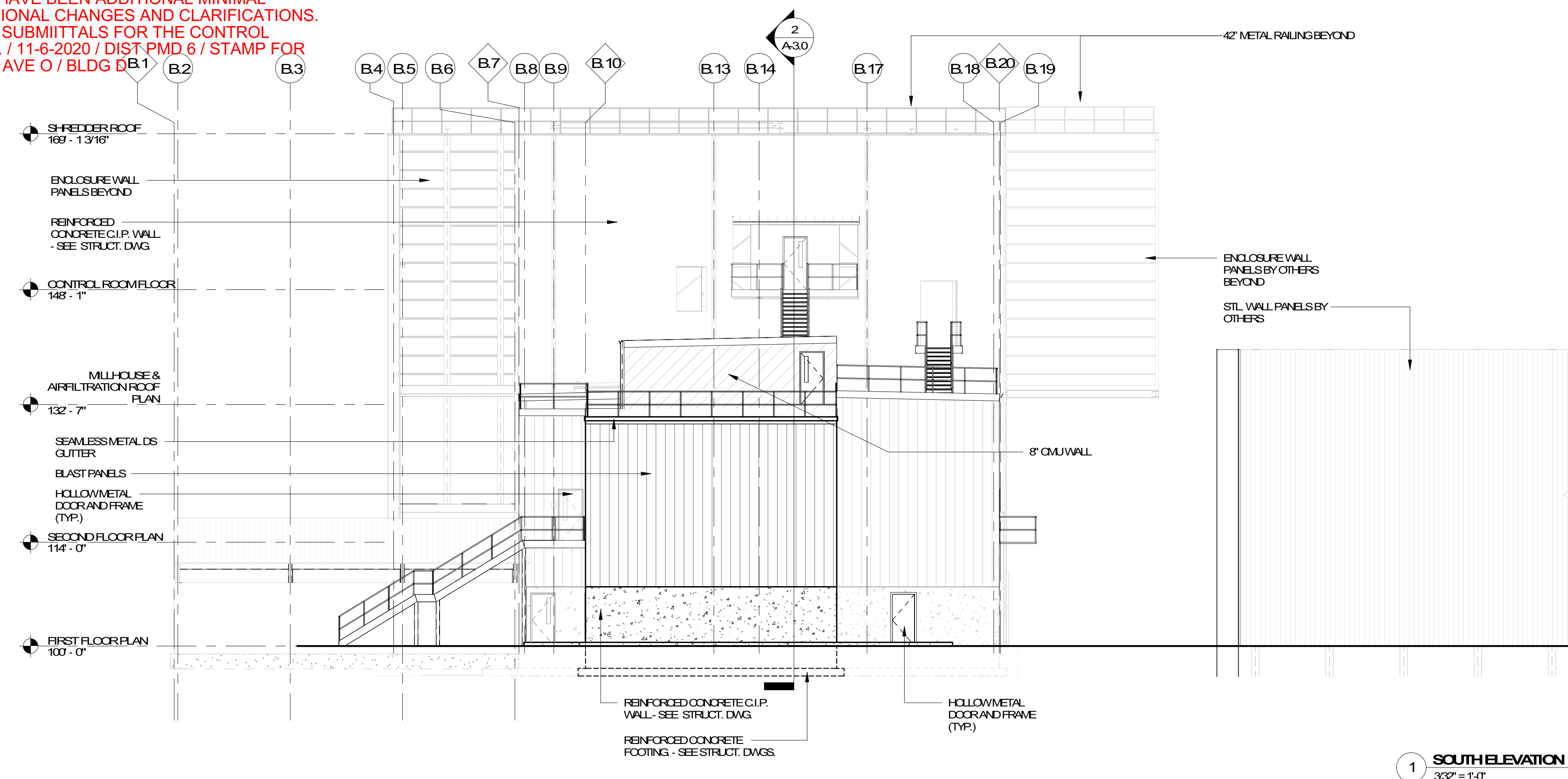
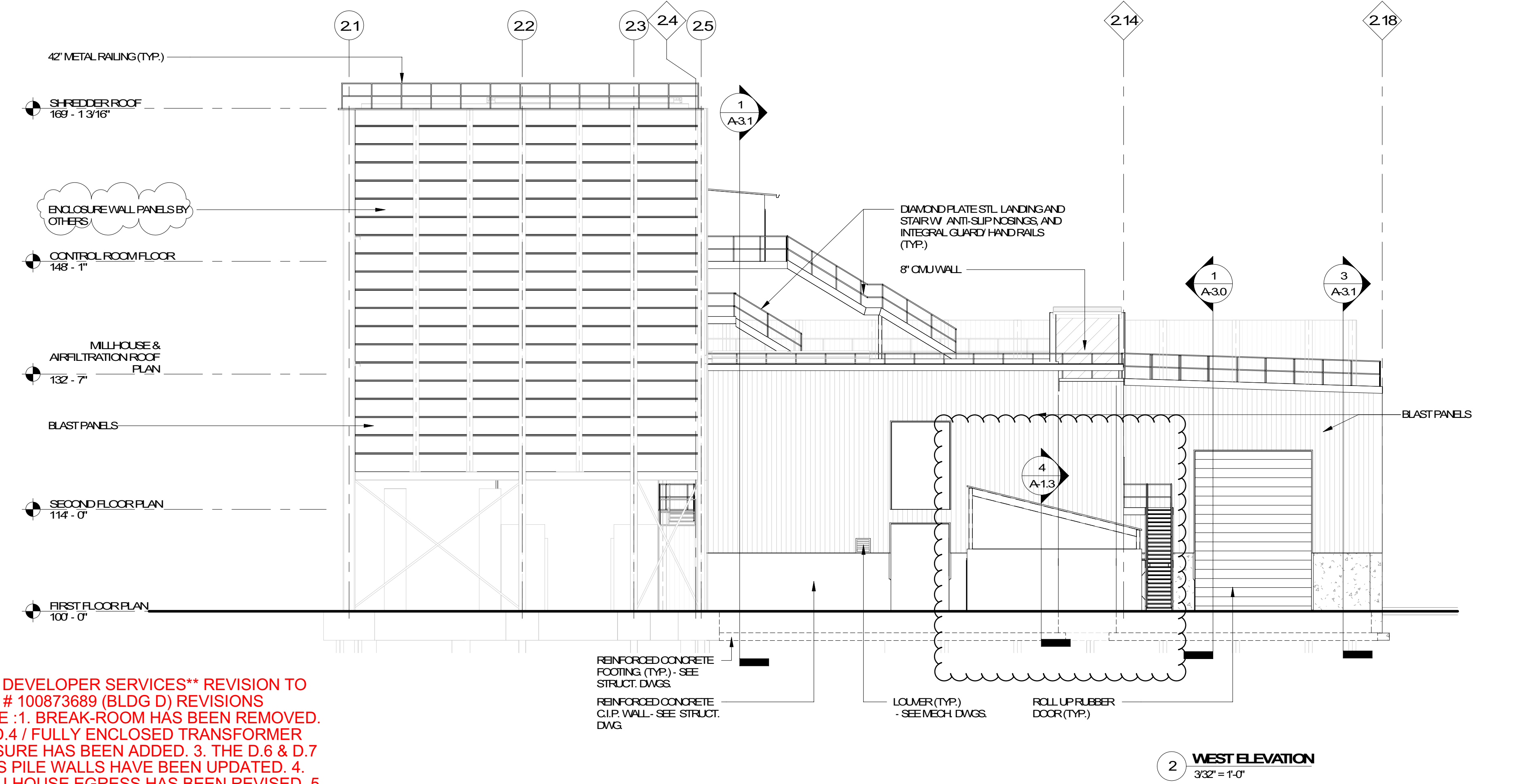
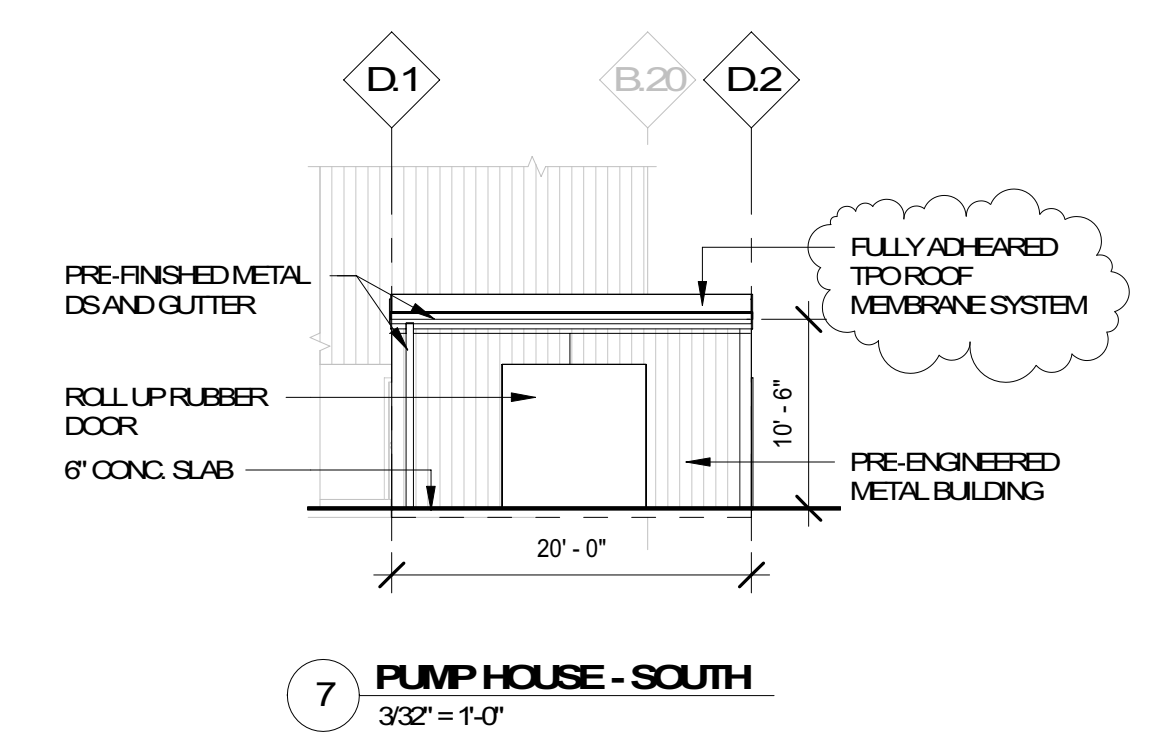
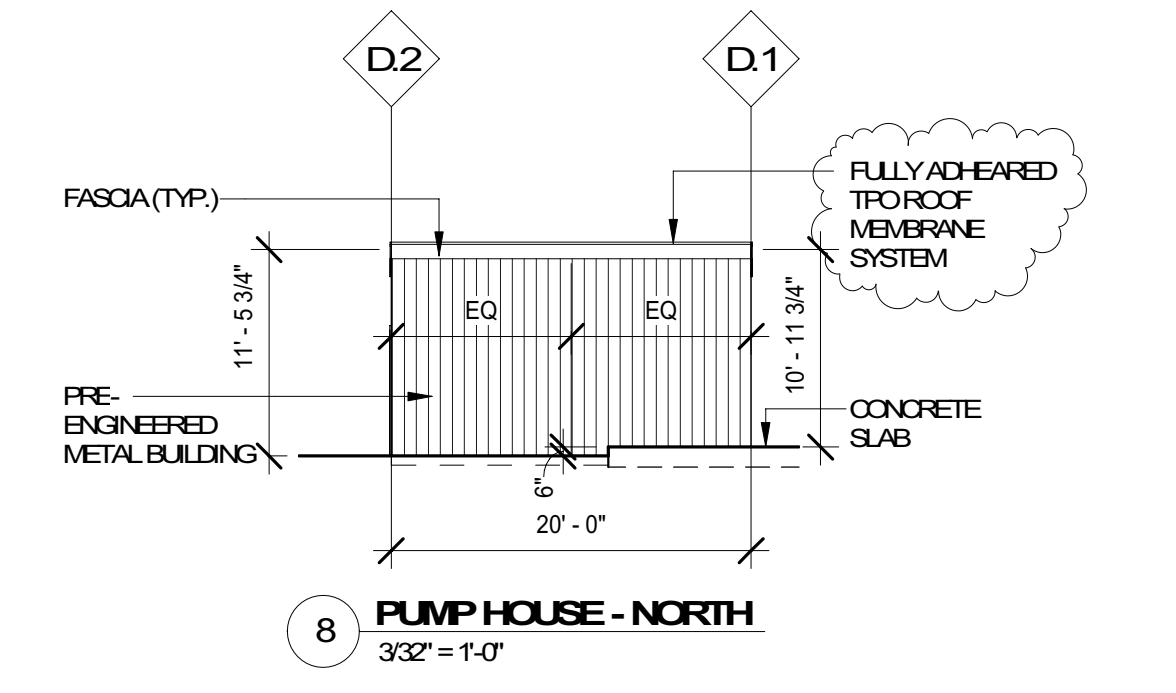
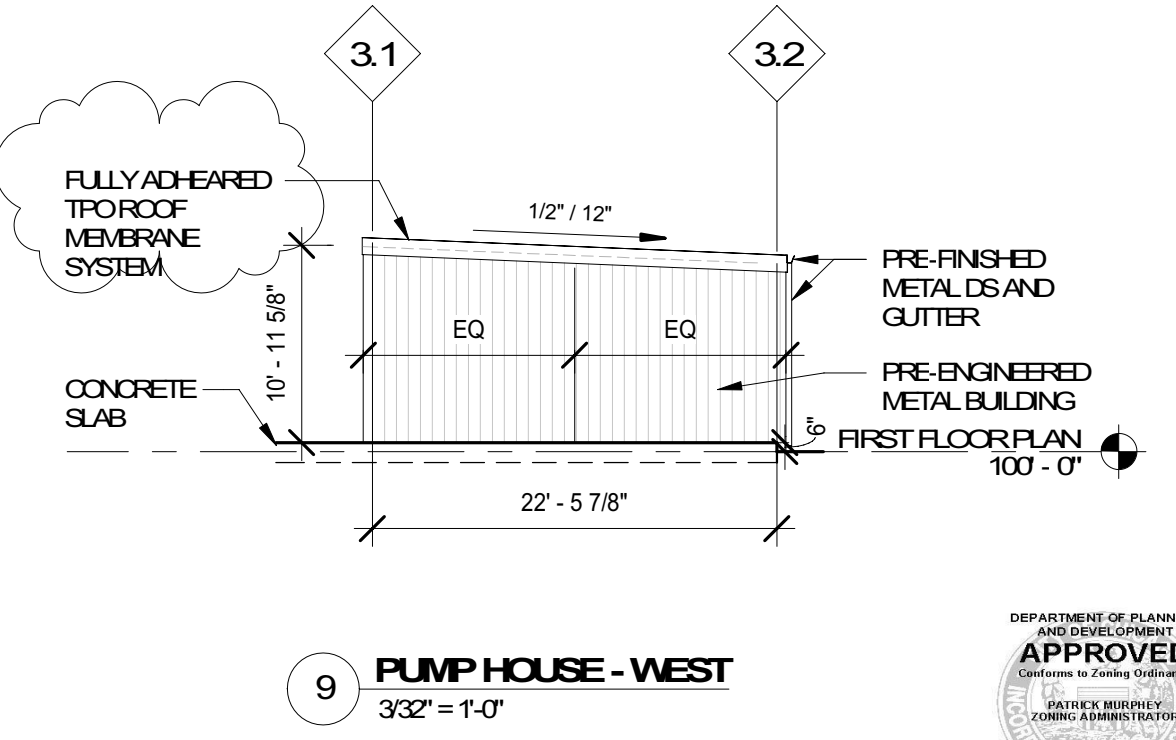
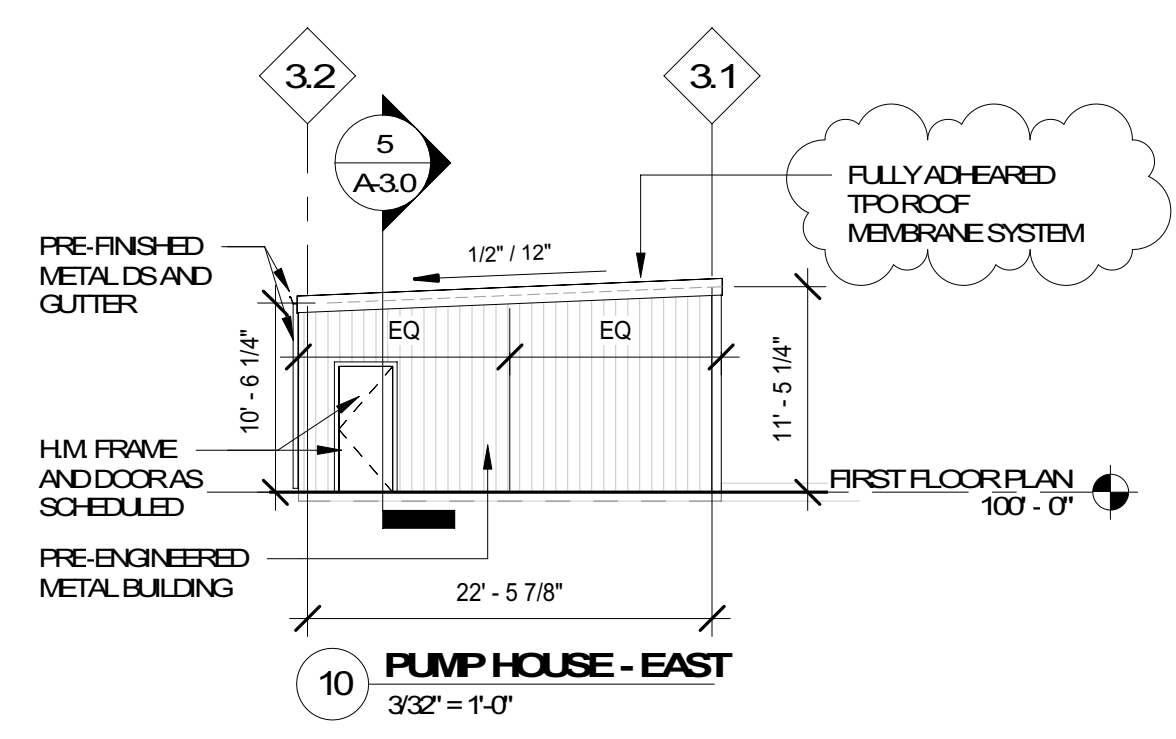
1 EAST ELEVATION
 3/32" = 1'-0"



KNIGHT
Engineers & Architects
Knight E/A, Inc.
221 N. LaSalle Street
Suite 300
Chicago, IL 60601
Phone: (312) 577-3300
knightea.com



DIRECT DEVELOPER SERVICES REVISION TO PERMIT # 100873689 (BLDG D) REVISIONS INCLUDE :**
1. BREAK-ROOM HAS BEEN REMOVED.
2. THE D.4 / FULLY ENCLOSED TRANSFORMER ENCLOSURE HAS BEEN ADDED. 3. THE D.6 & D.7 / DEBRIS PILE WALLS HAVE BEEN UPDATED. 4. D.1 / MILLHOUSE EGRESS HAS BEEN REVISED. 5. THERE HAVE BEEN ADDITIONAL MINIMAL DIMENSIONAL CHANGES AND CLARIFICATIONS. 6 SHOP SUBMITTALS FOR THE CONTROL TOWER. / 11-6-2020 / DIST.PMD.6 / STAMP FOR 11554 S AVE O / BLDG D



PROJECT:
GENERAL III, LLC
STRUCTURE D - SHREDDER SORTING BUILDINGS
11554 S. AVENUE O
CHICAGO, IL., 60617

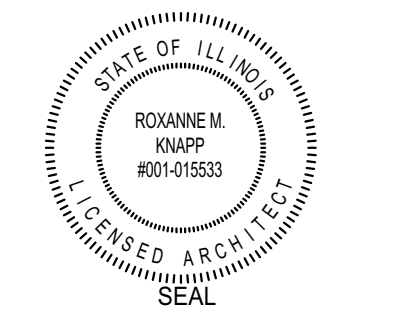
#	DATE	ISSUE
3	06/22/2020	ISSUE FOR PERMIT REVISION
2	04/01/2020	REVISION TO PERMIT
1	09/27/2019	ISSUED FOR PERMIT REVIEW

EXTERIOR ELEVATIONS

PROJECT #	DATE
7563	09/27/2019

A-21

KNIGHT
Engineers & Architects
Knight E/A, Inc.
221 N. LaSalle Street
Suite 300
Chicago, IL 60601
Phone: (312) 577-3300
knightea.com



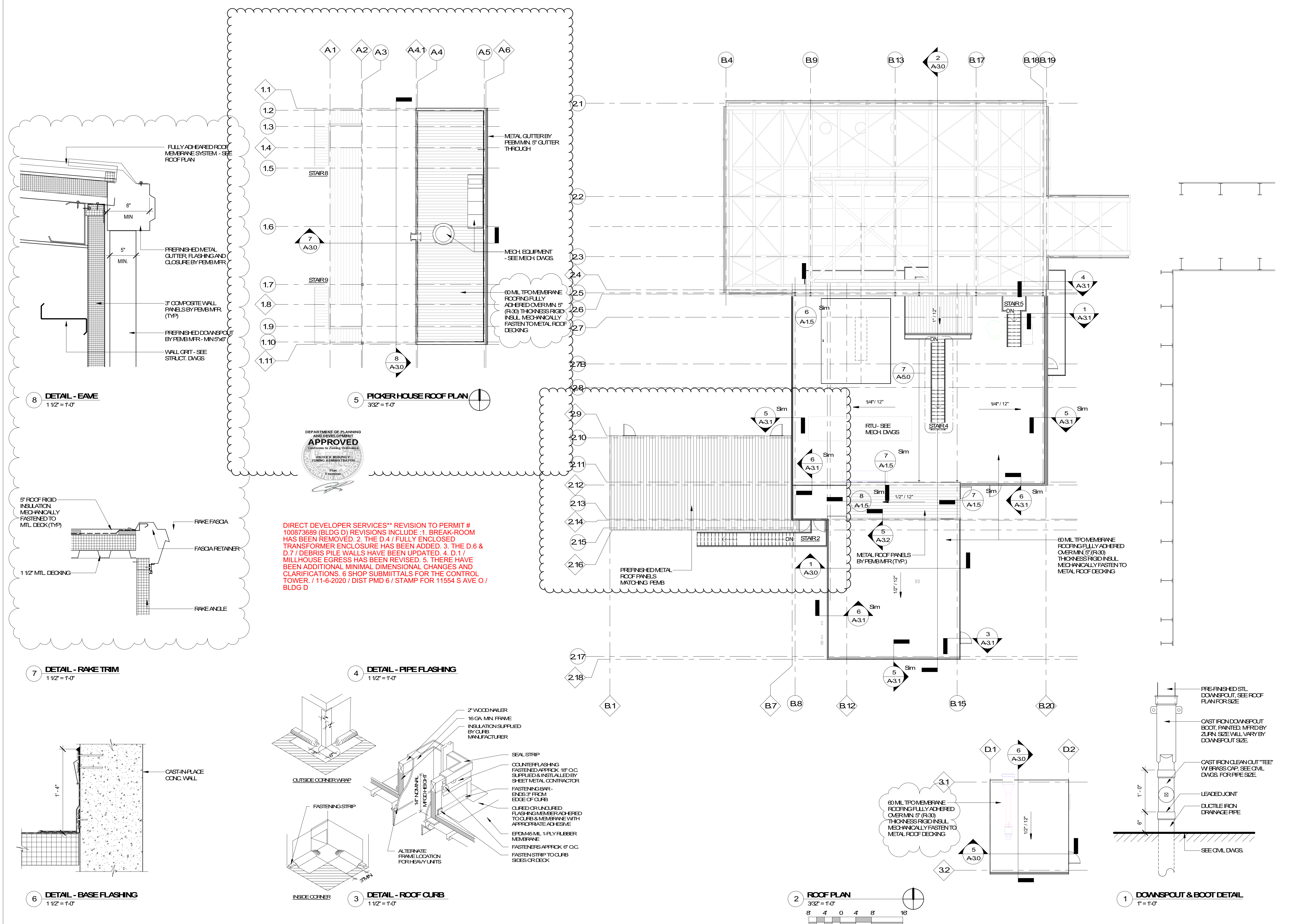
PROJECT:
GENERAL III, LLC
STRUCTURE D - SPREADER SORTING BUILDINGS
11554 S. AVE. E O
CHICAGO, IL, 60617

3	06/22/2020	ISSUE FOR PERMIT REVISION
2	04/01/2020	REVISION TO PERMIT
1	09/27/2019	ISSUED FOR PERMIT REVIEW
#	DATE	ISSUE

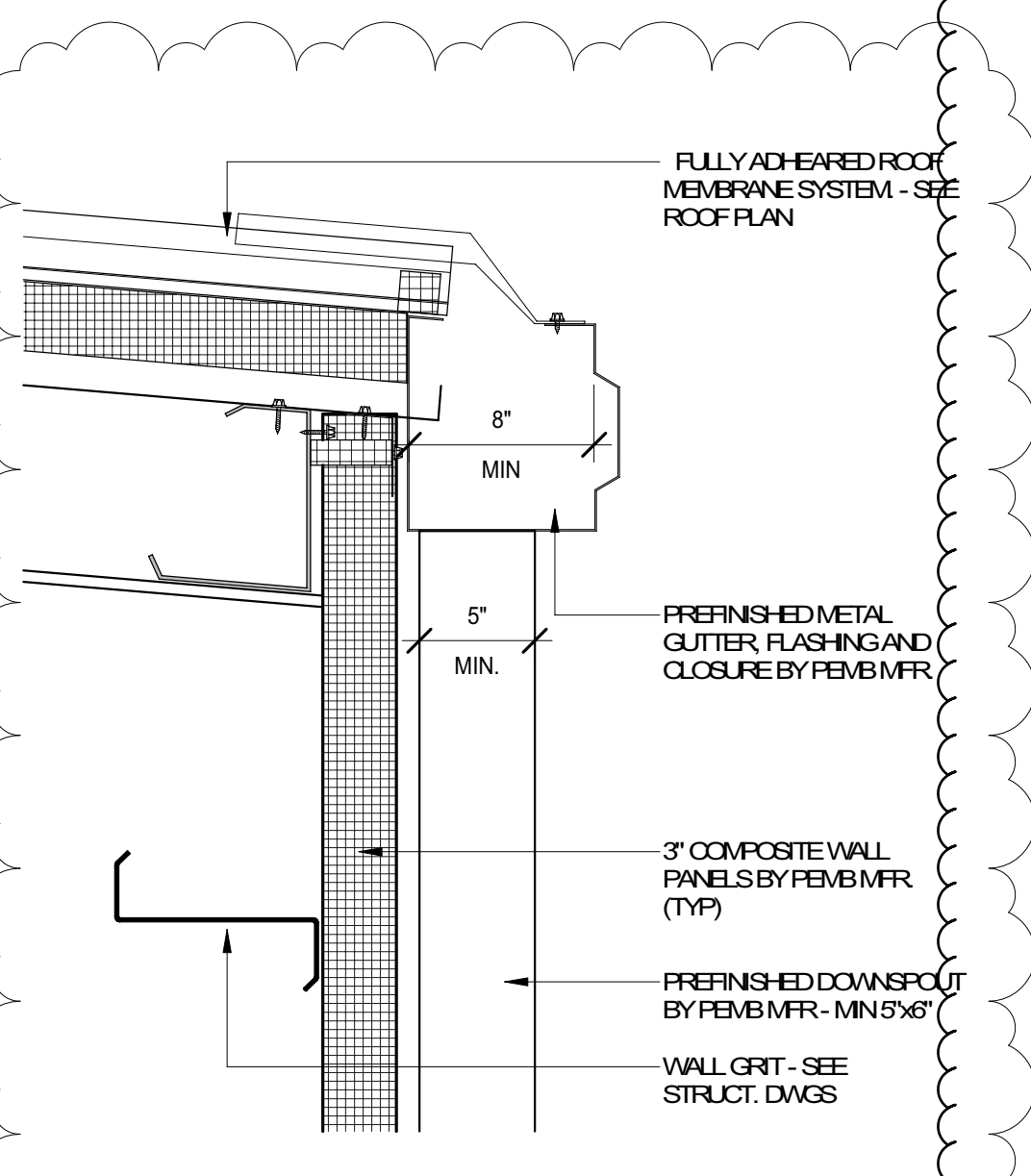
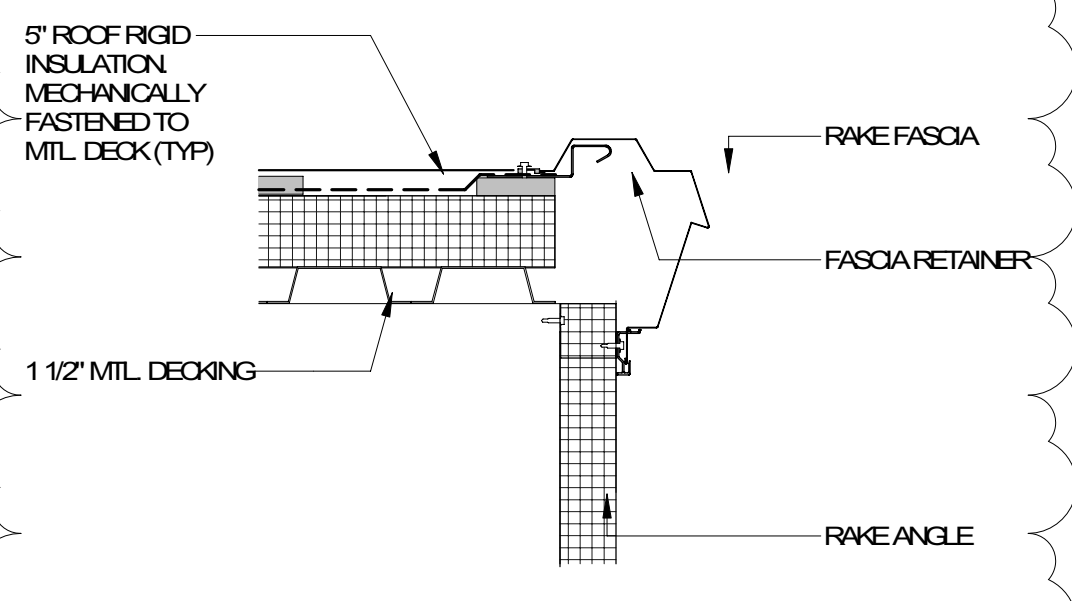
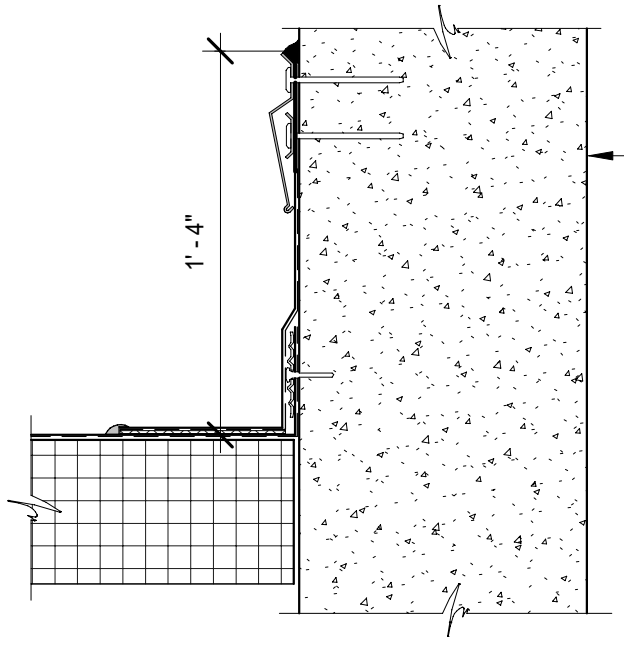
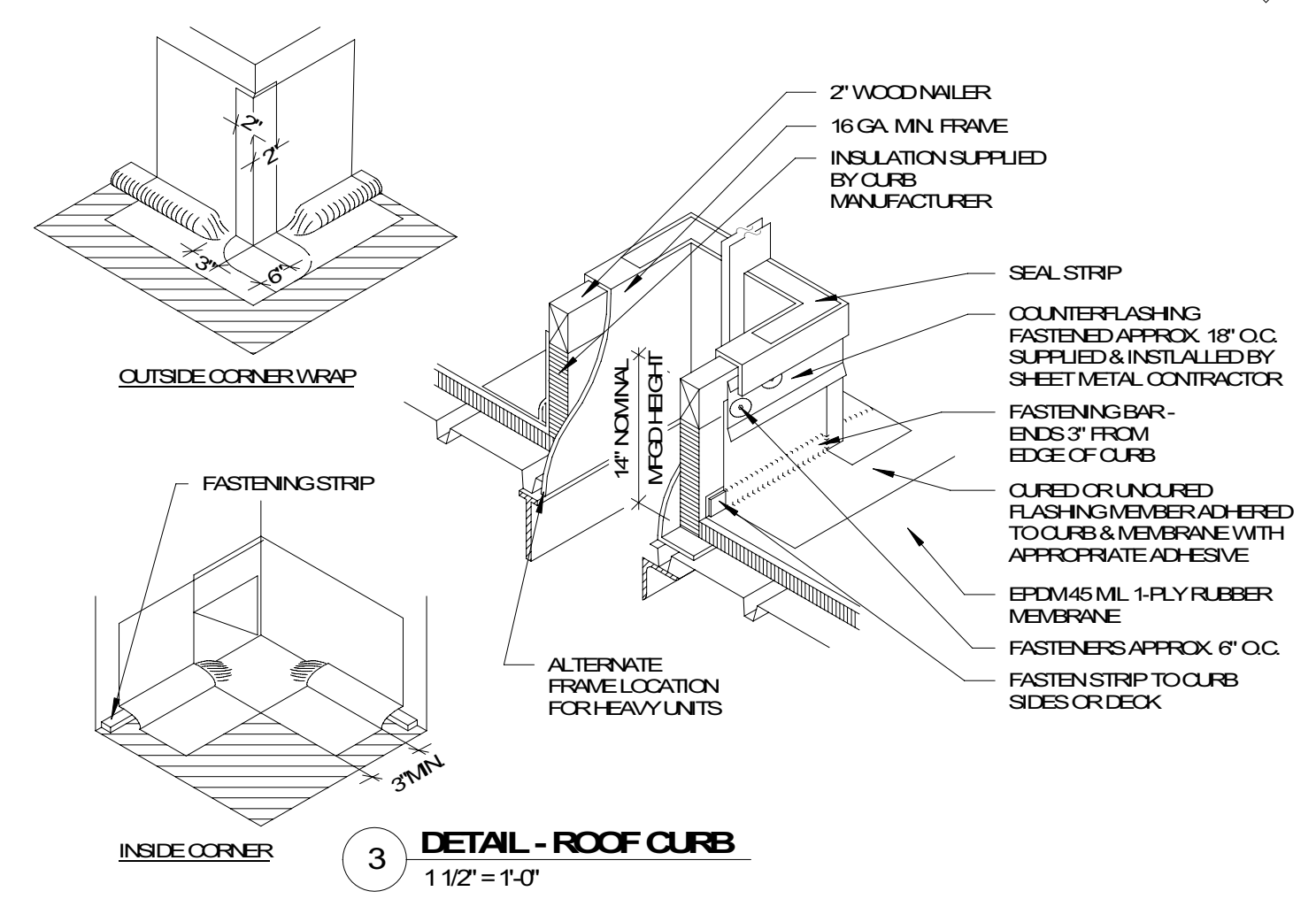
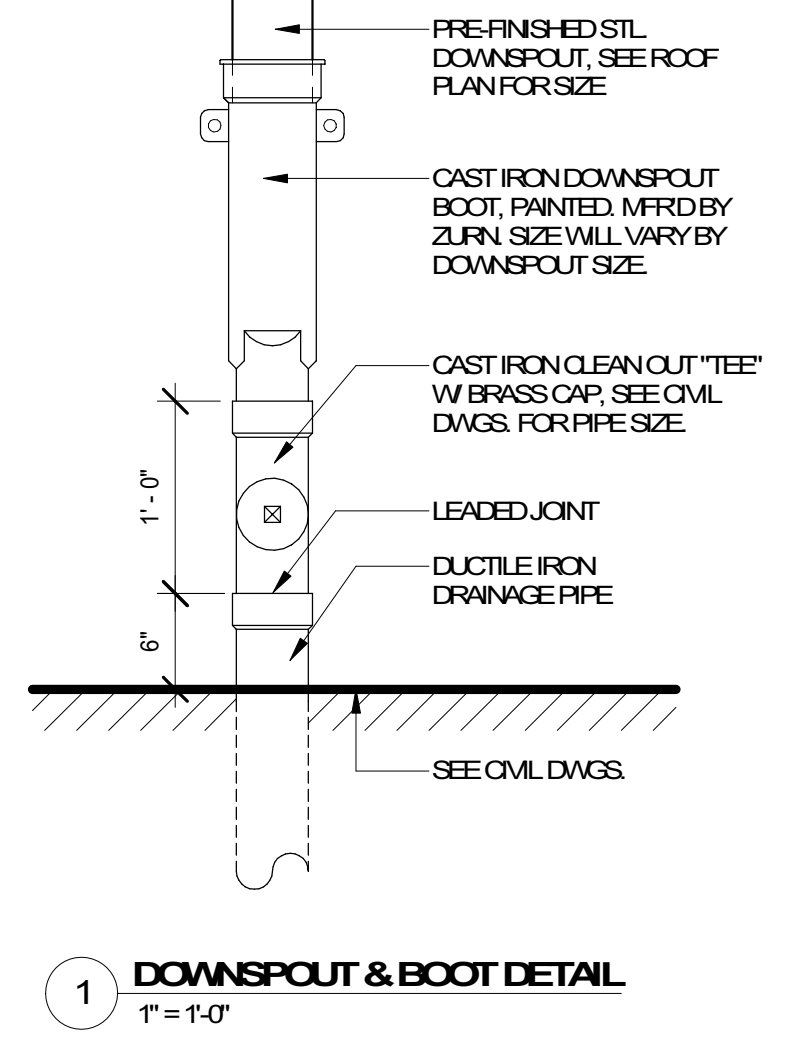
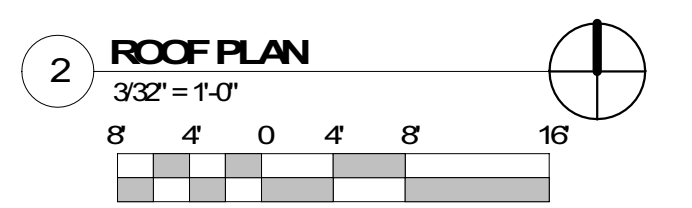
ROOF PLAN AND ROOF DETAILS

PROJECT #	DATE
7563	09/27/2019

A-15



DIRECT DEVELOPER SERVICES** REVISION TO PERMIT # 100873689 (BLDG D) REVISIONS INCLUDE: 1. BREAK-ROOM HAS BEEN REMOVED. 2. THE D.4 / FULLY ENCLOSED TRANSFORMER ENCLOSURE HAS BEEN ADDED. 3. THE D.6 & D.7 / DEBRIS PILE WALLS HAVE BEEN UPDATED. 4. D.1 / MILLHOUSE EGRESS HAS BEEN REVISED. 5. THERE HAVE BEEN ADDITIONAL MINIMAL DIMENSIONAL CHANGES AND CLARIFICATIONS. 6 SHOP SUBMITTALS FOR THE CONTROL TOWER, / 11-6-2020 / DIST PMD 6 / STAMP FOR 11554 S AVE O / BLDG D



SAFETY DATA SHEET (SDS)

OSHA Hazard Communication Standard 29 CFR 1910.1200. Prepared to GHS

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

Trade Name: **Free Flow 100[®], Free Flow 200[®], Free Flow 300[®]**
Product CAS: None

Recommended use: Stabilize RCRA Metals

Company Identification:

Free Flow Technologies, Inc.
4920 Forest Hills Rd, Suite 200
Loves Park, Illinois 61111

For information call: (815) 636-0166
Emergency Contact: Timothy Danzer
Fax: (815) 636-0560

SECTION 2 – HAZARD(S) IDENTIFICATION

GHS07 Acute Toxicity

Classification of the substance:

- H303 Acute Toxicity, category 5 (oral)
- H313 Acute Toxicity, category 5 (dermal)
- H332 Acute Toxicity, category 4 (inhalation)
- H315 Skin, eye irritation, category 2
- H317 Skin sensitization, category 1
- H335 Specific Target Organ Toxicity, category 3 (single exposure, respiratory tract irritation)



WARNING

Hazard Statements:

- H303 May be harmful if swallowed
- H313 May be harmful in contact with skin
- H332 Harmful if inhaled
- H315 Causes skin irritation
- H317 May cause an allergic skin reaction
- H335 May cause respiratory irritation

Precautionary Statements:

Prevention

- P261 Avoid breathing dust.
- P264 Wash hands thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.

SECTION 2 – HAZARD(S) IDENTIFICATION (CONT.)

Prevention cont.	P280 Wear protective gloves, safety glasses, and protective clothing such as long sleeves and pant cuffs over shoes to minimize skin contact.
Response	<p>P302+P352 IF ON SKIN: Wash with plenty of soap and water.</p> <p>P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>P312 Call a POISON CENTER or doctor/physician if you feel unwell.</p> <p>P321 Specific treatment, see supplemental first aid information.</p> <p>P332+P313 If skin irritation occurs: Get medical advice/attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p>
Storage/Disposal	<p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P501 Dispose of container in accordance with local, regional, national, and/or international regulations.</p>

Hazards Ratings HMIS

HEALTH	1
FLAMMABILITY	0
REACTIVITY	1
PERSONAL PROTECTION	0

SECTION 3 – COMPOSITION, INFORMATION ON INGREDIENTS

Chemical Name	CAS	Approx. % (w/w)	LD50	LC50
Phosphate Compounds	7758-23-8	0 - 80	Not Available	Not Available
Calcium Oxide	1305-78-8	10 - 70	Not Available	Not Available
Sulfur Trioxide	7446-11-9	0 - 40	Not Available	Not Available
Silicon Dioxide	60676-86-0	2.5 – 15	Not Available	Not Available
Aluminum Oxide – Non-fibrous	1344-28-1	0.5 - 5	Not Available	Not Available
Iron Oxide	1309-37-1	0.5 - 5	Rat, oral, >5000 mg/kg	Not Available
Sodium Bicarbonate	144-55-8	0 - 70	Mouse, oral, 3360 mg/kg	Not Available
Magnesium Oxide	1309-48-4	0 - 60	Not Available	Not Available

SECTION 4 – FIRST AID MEASURES

- After Eye Contact:** Flush eyes with water while lifting lids. Seek medical attention.
- After Skin Contact:** Wash skin with soap and water, remove contaminated clothing and shoes. If irritation develops, seek medical attention.
- After Ingestion:** Dilute with water, fruit juice or vinegar. Seek medical attention.
- After Inhalation:** Remove to fresh air, if irritation develops, seek medical attention.

Most important symptoms and effects, both acute and delayed.

Refer to Section 11 – Toxicological Information

Indication of any immediate medical attention and special treatment needed.

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5 – FIRE FIGHTING MEASURES

Suitable extinguishing equipment:

This material is noncombustible.

Extinguishing equipment that is not appropriate for a particular situation:

Do not use water on adjacent fires. Extinguish adjacent fires with dry chemical or CO₂.

Specific hazards that develop from the chemical during the fire:

No specific hazards are identified.

Protective equipment or precautions for firefighters:

No special measures required.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment to prevent skin exposure and inhalation. Keep unprotected persons away.

Environmental Precautions:

Avoid runoff to waterways and sewers.

Methods and materials used for containment and cleanup:

Use appropriate protective equipment while using dry cleanup methods (sweep/shovel) which minimize dusting. Reclaim in watertight containers. Small amounts may be flushed with water to drain.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling:

Swells when wet, may expand the container. Keep eyewash bottles available throughout work area.

Conditions for safe storage, including any incompatibilities:

Store away from water or acids.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters

Component	Formula	CAS	PEL	TLV
Phosphate Compounds	Ca(H ₂ PO ₄) ₂ H ₂ O	7758-23-8	Not established	Not established
Calcium Oxide	CaO	1305-78-8	5 mg/m ³	2 mg/m ³
Sulfur Trioxide	SO ₃	7446-11-9	1 mg/m ³	0.2 mg/m ³
Silicon Dioxide**	SiO ₂	60676-86-0	0.1 mg/m ³ *	0.1 mg/m ³ *
Aluminum Oxide	Al ₂ O ₃	1344-28-1	10 mg/m ³ +	10 mg/m ³ +
Iron Oxide**	Fe ₂ O ₃	1309-37-1	15 mg/m ³	5 mg/m ³
Sodium Bicarbonate	NaHCO ₃	144-55-8	15 mg/m ³ *	10 mg/m ³ *
Magnesium Oxide	MgO	1309-48-4	15 mg/m ³ *	10 mg/m ³ *

* Respirable Dust

+ 5 mg/M³ as Respirable Fraction

**Silicon Dioxide and Iron Oxide are listed by IARC as potential carcinogens.

Exposure Controls

Engineering Controls:

Use general and local exhaust to keep dust levels within acceptable limits.

Personal Protective Equipment Pictograms:



Breathing Protection:

Use NIOSH approved dust respirator when exposure limits exceeded.

Hand Protection:

Wear gloves to minimize skin contact.

Eye Protection:

Wear tight fitting goggles.

Skin Protection:

Wear long sleeves, gloves, and pant cuffs over shoes to minimize skin contact.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White-gray powder.	Boiling Point:	N/A
Odor:	Odorless	Flammable, Lower Limit:	N/A
Odor Threshold:	N/A	Flammable, Upper Limit:	N/A
Solubility:	N/A	Flash Point:	N/A
Partition Coefficient:	Not determined.	Auto Ignition Temperature:	N/A
pH:	6.0 – 12.0	Freezing/Melting Point:	N/A
Density:	80 – 85 lbs/ft ³	Viscosity:	N/A
Vapor Pressure:	N/A	Decomposition Temp.:	N/A
Vapor Density:	N/A	Evaporation Rate:	N/A
Molecular Formula:	Mixture		

SECTION 10 – STABILITY AND REACTIVITY

Reactivity:

No dangerous reactions known under conditions of normal use.

Chemical Stability:

Stable, keep dry.

Thermal decomposition/conditions to be avoided:

Avoid extreme temperatures.

Possibility of hazardous reactions:

Contains calcium oxide and may react with water or acid to produce heat.

Incompatible materials:

Water, strong acids.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicological Effects

Component	Formula	LD50	LC50
Phosphate Compounds	Ca(H ₂ PO ₄) ₂ H ₂ O	Not Available	Not Available
Calcium Oxide	CaO	Not Available	Not Available
Sulfur Trioxide	SO ₃	Not Available	Not Available
Silicon Dioxide**	SiO ₂	Not Available	Not Available
Aluminum Oxide	Al ₂ O ₃	Not Available	Not Available
Iron Oxide**	Fe ₂ O ₃	rat, oral, >5000 mg/kg	Not Available
Sodium Bicarbonate	NaHCO ₃	mouse, oral, 3360 mg/kg	Not Available
Magnesium Oxide	MgO	Not Available	Not Available

**Silicon Dioxide and Iron Oxide are listed by IARC as potential carcinogens.

SECTION 11 – TOXICOLOGICAL INFORMATION (CONT.)

Routes of exposure

Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Potential health effects

Eye: Acute: May cause mild eye irritation
Chronic: No data available

Skin: Acute: Causes skin irritation
Chronic: Repeated and prolonged exposure may cause dermatitis

Ingestion: Acute: May cause irritation
Chronic: No data available

Inhalation: Acute: May cause respiratory irritation
Chronic: No data available

Symptoms from exposure

Target Organs: Eyes, respiratory passages, skin, digestive tract. Pre-existing respiratory diseases including asthma and emphysema may also be aggravated.

Eye: May cause irritation/inflammation and tissue damage.

Skin: May cause irritation to moist skin.

Ingestion: May cause ulceration to the digestive tract.

Inhalation: May cause irritation/inflammation to nasal and upper respiratory passages.

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity:

No further relevant information available.

Persistence and degradability:

No further relevant information available.

Bioaccumulative potential:

No further relevant information available.

Mobility in soil:

No further relevant information available.

SECTION 13 – DISPOSAL CONSIDERATIONS

Recommended Waste Treatment Methods:

No treatment necessary.

Recommended Package Disposal:

Dispose of in container in accordance with local, regional, national, and/or international regulations.

SECTION 14 – TRANSPORT INFORMATION

UN Number:	N/A
UN proper shipping name:	N/A
Transport Hazard class:	N/A
Packing group number:	N/A
Environmental hazards:	N/A
Special Precautions:	To prevent dust, cover product with tarp if not in bulk bag container.

SECTION 15 – REGULATORY INFORMATION

SARA Title III - Section 302 Extremely Hazardous Material - None

SARA Title III – Section 31/312 – Hazard Categories:

Fire Hazard – No
Sudden Release of Pressure – No
Reactivity Hazard – Yes
Immediate Health Hazard – Yes
Delayed Health Hazard - Yes

SARA Title III – Section 313 - This material is not subject to the toxic chemical reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

SECTION 16 – ADDITIONAL INFORMATION

Information herein is based on data believed to be accurate at the time of the preparation. No warranty or representation, express or implied, is made to the accuracy or completeness of the SDS. No responsibility can be assumed by vendor for any damage or injury resulting from misuse, failure to follow recommended practices, or from any hazards inherent in the nature of the product.

SECTION 16 – ADDITIONAL INFORMATION (CONT.)

SDS Effective: 12/1/2014