

JUSTIFICATION FOR NON-COMPETITIVE PROCUREMENT

COMPLETE THIS SECTION IF NEW CONTRACT(S)

For contract(s) in this request, answer applicable questions in each of the 4 major subject areas below in accordance with the Instructions for Preparation of Non-Competitive Procurement Form on the reverse side.

Request that negotiations be conducted only with Old World Industries for the product and/or services described herein.  
(Name of Person or Firm)

This is a request for: \_\_\_\_\_ (One-Time Contract Per Requisition # 40428, copy attached) or X Term Agreement  
or \_\_\_\_\_ Delegate Agency (Check one). If Delegate Agency, this request is for "blanket approval" of all contracts within the  
\_\_\_\_\_  
(Program Name) (Attach List) Pre-Assigned Specification No. \_\_\_\_\_  
Pre-Assigned Contract No. \_\_\_\_\_

COMPLETE THIS SECTION IF AMENDMENT OR MODIFICATION TO CONTRACT

Describe in detail the change in terms of dollars, time period, scope of services, etc. relationship to the original contract and the specific reasons for the change. Indicate both the original and the adjusted contract amount and expiration date with this change, as applicable. Attach copy of all supporting documents. Request approval for a contract amendment or modification to the following:

Contract #: \_\_\_\_\_ Company, or Agency Name: \_\_\_\_\_  
Specification #: \_\_\_\_\_ Contract or Program Description: \_\_\_\_\_  
Mod #: \_\_\_\_\_ (Attach List, if multiple)

Al Perez 773-894-1823 Al Perez Aviation 10/14/08  
Originator Name Telephone Signature Department Date

Indicate SEE ATTACHED in each box below if additional space needed:

( ) PROCUREMENT HISTORY  
The Department of Aviation (DOA) requires liquid runway deicer/anti-icer to ensure that runways are kept safe for airport operations during times when ice, freezing rain or snow are present and could jeopardize safety. The liquid runway deicer is used along with various other means to combat ice and snow including plowing, brooming, blowing, heated sand and solid deicers. Even with these other weapons, liquid deicer is necessary to allow for winter operations.  
  
In the past DOA has used various chemicals for liquid deicing including ethylene glycol (EG) prior to the mid 90's O'Hare then switched to a propylene glycol urea (PGU) mix as it was a more environmentally acceptable product which we used into 2005 when we completed over transition to Potassium Acetate (PA) which began in 2003/2004. This switch was based on both cost as PA was much less expensive and environmental concerns as PA was a better product with respect to the environment.  
  
Over the many years we have successfully bid the various products and had good competition. Last year a contract (PO15570) was awarded for a period of 5 years to provide PA, however towards the end of the 2008 snow season the vendor noted that the supply of the product was tightening due to the horrible winter, the demand for the raw ingredients for other purposes (fertilizer) and problems with mining of the potash used in the product. Since springtime the market has worsened as the miners of potash went on strike in Canada.  
  
When the current vendor ACE noticed in late May their inability to meet their contractual obligations for 2008/2009, DOA went out to bid for a new PA contract and received no bids as no one was able to secure the volume of the product we need for the airport system. In fact there is a nationwide shortage of PA that is likely to affect airports across the snow belt. We then rebid the contract asking for PG, however this bid also resulted in no acceptable bids. Bidders were unable to secure the volume of raw propylene glycol to meet our needs. While PG is

used in making deicer it is a different formulation from that for runways. Additionally, the product manufacturers for the most part exited the PG runway deicer business in the past few years as PA, given its environmental and pricing benefits, convinced airports to switch over.

Old World did not bid on our last bid as it was Target Market nor did they offer to provide product through a certified MBE/WBE as the product we specified did not contain urea. The last time we bid PG with urea several years ago there was an issue raised by other manufactures that only Old World had a urea blend. With that in mind the most recent bid eliminated urea. Unfortunately, as noted previously, the other manufacturers who may have in the past been able to meet our specifications for the PG/water mix did not have a product that was FAA approved anymore nor can they obtain the raw propylene glycol needed to make the product even if they had an acceptable formula.

It is DOA's hope that beyond this year we will be able to once again competitively bid this requirement.

ESTIMATED COST

See attached proposal. As part of this agreement DOA will agree to purchase 1,500,000 gallons as its usage allows by March 31, 2010. Once Old World mixes the product we are required to purchase as this product is not currently used anywhere else.

SCHEDULE REQUIREMENTS

Upon award of contract Old World will secure all of the raw materials and storage/blending facilities necessary to service O'Hare International Airport for 2008/2009 season beginning December 1, 2008. Old World has already confirmed with its various suppliers/subcontractors that the raw materials and infrastructure are being kept available to them.

EXCLUSIVE OR UNIQUE CAPABILITY

Old World is the only product manufacturer that has access to the raw materials (most notably propylene glycol) to provide 1,500,000 gallons of deicer to O'Hare International Airport.

Per the attached letters from the other two large manufacturers of liquid deicers, Clariant and Cryotech, neither company currently has the ability to provide FAA approved runway deicer.

Although Cryotech is working on a new product that they hope to get approval for this year, DOA is unable to wait to see if this will happen nor do we prefer to use a product without a proven track record. This is even more critical given the safety implications if the product does not perform well.


Old World is a local business and DOA is aware of the PGU's capabilities as it had been used successfully for many years at O'Hare International Airport.

Currently O'Hare has approximately 550,000 gallons of PA at its disposal for 08/09. Over the past 9 years we have averaged about 1,300,000 gallons per year of usage. Last year we used a record over 2,400,000 gallons. In 08/09 we will be adding additional pavement (approximately 8-10%) as part of the O'Hare Modernization Program which will likely increase the deicer usage.


OTHER

Midway Airport's deicer needs for 2008-2009 will be met utilizing the product our previous contractor (ACE) had left over after last season and which DOA is purchasing via a settlement agreement.

APPROVED BY:

  
Monica W. Smith  
Chief Procurement Officer

10-20-08  
DATE

  
L. S. Smith  
BOARD CHAIRPERSON  
10-30-08  
Approval Date

10/29/08  
DATE

# INSTRUCTIONS FOR PREPARATION OF NON-COMPETITIVE PROCUREMENT FORM (Rev 9/97)

If a City Department has determined that the purchase of supplies, equipment, work and/or services can not be done on a competitive basis, a sole source justification must be prepared on this Justification for Non-Competitive Procurement Form in which procurement is requested on a non-bid or non-competitive basis in accordance with 65 ILCS 5/8-10-4 of the Illinois Compiled Statutes. All applicable questions in each Subject Area below must be answered. The information provided must be complete and in sufficient detail to allow for a decision to be made by the Non-Competitive Procurement Review Board. The Board will not consider justifications with incomplete information or documentation. Also, attach Form F-7 (if One Time Contract); F-8 (if Delegate Agency Contract) or F-26 (if Term Agreement) to obtain a pre-assigned Specification and Contract Number for each contract in this request.

## PROCUREMENT HISTORY (INCLUDING FUTURE PROCUREMENT OBJECTIVES)

1. Describe the requirement and how it evolved from initial planning to its present, status.
2. Is this a first time requirement or a continuation of previous procurement from the same source? If so, explain the procurement history.
3. Explain attempts made to competitively bid the requirement. (Attach copy of notices and list of sources contacted).
4. Describe any research done to find other sources (List other cities contacted, companies in the industry contacted, professional organizations, periodicals and other publications used).
5. Explain future procurement objectives. Is this a one-time request or will future requests be made for doing business with the same source?
6. Explain whether or not future competitive bidding is possible. If not, why not?

## ESTIMATED COST

1. What is the estimated cost for this requirement (or for each contract, if multiple awards contemplated)? What is the funding source?
2. What is the estimated cost by fiscal year, if the job, project or program covers multiple years?
3. Explain the basis for estimating the cost and what assumptions were made and/or data used (ie. budgeted amount, previous contract price, current catalog or cost proposal from firms solicited, engineering or in-house estimate, etc).
4. Explain whether the proposed Contractor or the City has a substantial dollar investment in original design, tooling or other factors which would be duplicated at City expense if another source was considered. Describe cost savings or other measurable benefits to the City which may be achieved.
5. Explain what negotiation of price has occurred or will occur. Detail why the estimated cost is deemed reasonable.

## SCHEDULE REQUIREMENTS

1. Explain how the schedule was developed and at what point the specific dates were known.
2. Is lack of drawings and/or specifications a constraining factor to competitive bidding? If so, why is the proposed Contractor the only person or firm able to perform under these circumstances? Why are the drawings and specifications lacking? What is the lead time required to get drawings and specifications suitable for competition? If lack of drawings and specifications is not a constraining factor to competitive bidding, explain why only one person or firm can meet the required schedule.
3. Outline the required schedule by delivery or completion dates and explain the reasons why the schedule is critical.
4. Describe in detail what impact delays for competitive bidding would have on City operations, programs, costs and budgeted funds.

## EXCLUSIVE OR UNIQUE CAPABILITY

1. If contemplating hiring a person or firm as a Professional Service Consultant, explain in detail what professional skills, expertise, qualifications or other factors make this person or firm exclusively or uniquely qualified for the project. Attach copy of cost proposal and scope of services.
2. Does the proposed firm have personnel considered unquestionably predominant in the particular field?
3. What prior experience of a highly specialized nature does the person or firm exclusively possess that is vital to the job, project or program?
4. What technical facilities or test equipment does the person or firm exclusively possess of a highly specialized nature which is vital to the job?
5. What other capabilities and/or capacity does the proposed firm possess which is necessary for the specific job, project or program which makes them the only source who can perform the work within the required time schedule without unreasonable costs to the City?
6. If procuring products or equipment, describe the intended use and explain any exclusive or unique capabilities, features and/or functions the items have which no other brands or models, etc possess. Is compatibility with existing equipment critical from an operational standpoint? Explain why.
7. Is competition precluded because of the existence of patent rights, copyrights, trade secrets, technical data, or other proprietary data? Attach documentation verifying such.
8. If procuring replacement parts and/or maintenance services, explain whether or not replacement parts and/or services can be obtained from any other sources? If not, is the proposed firm the only authorized or exclusive dealer/distributor and/or service center? If so, attach letter from manufacturer.

## OTHER

1. Explain other related considerations and attach all applicable supporting documents (Information Technology Strategy Committee (ITSC) Approval form, etc.)
2. Explain what opportunities of direct/indirect involvement of Minority or Women Business Enterprises have been discussed and/or are available

this contract.

## REVIEW AND APPROVAL

This form must be signed by both the Originator of the request and approved by the Department Head or, authorized designee.



DEPARTMENT OF AVIATION

MEMORANDUM

Date: October 15, 2008

To: Montel M. Gayles  
Chief Procurement Officer

Attention: Habib Rehman  
Assistant Procurement Officer

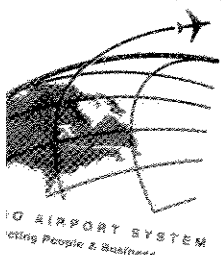
From: Richard L. Rodriguez  
Commissioner

Subject: Request Approval for Non-Competitive Procurement  
Liquid Runway Deicer for Chicago Airport System  
Vendor: Old World Industries  
Value: \$17,235,000  
Duration: 12/1/08 – 3/31/2010

The Department of Aviation (DOA) requests approval to proceed with a non-competitive procurement contract for the purchase of propylene glycol urea (PGU) liquid runway deicer for the upcoming winter season.

DOA has attempted twice in the last three (3) months to competitively bid its requirement for liquid runway deicer however due to raw material shortages caused by weather, labor unrest and problems mining the ingredients, the solicitations yielded no acceptable bids. As such DOA is now in a position that it must obtain an FAA approved product that only Old World Industries is capable of providing in the time frame and quantity we require to ensure our ability to deice the runways and taxiways at O'Hare International Airport.

The DOA will commit to procuring a minimum of 1,500,000 gallons of PGU which depending on the severity of the winter season may result in taking possession and purchasing the balance of the product into the 2009/2010 season. It is the DOA's intent to competitively bid its liquid runway deicer requirements for 2009/2010 and beyond assuming that market conditions improve to allow a solicitation of bids.



CHICAGO AIRPORT SYSTEM  
Connecting People & Business



If you have any questions or need additional information regarding this request please contact David Bowman at 686-7089.

Procurement Type:

Non-Competitive

Duration:

16 months with no extensions  
12/1/08 - 3/31/2010

Cost:

1,500,000 gallons X \$ 11.49 = \$17,235,000

User Deputy:

William Palivos

Phone: 686-3411

User Managing Deputy:

Al Perez

Phone: 894-1823

*AM* *AS* Reviewed by: Angela Manning, Managing Deputy Commissioner \_\_\_\_\_

Attachment: Sole Source Justification Package

# DPS PROJECT CHECKLIST

For DPS Use Only  
 Date Received \_\_\_\_\_  
 Date Returned \_\_\_\_\_  
 Date Accepted \_\_\_\_\_  
 (Print Name) \_\_\_\_\_

**IMPORTANT:** PLEASE READ AND FOLLOW THE INSTRUCTIONS FOR COMPLETING THE PROJECT CHECKLIST AND CONTACT THE APPROPRIATE UNIT MANAGER IF YOU HAVE ANY FURTHER QUESTIONS. ALL INFORMATION SHOULD BE COMPLETED, ATTACH ALL REQUIRED MATERIALS AND SUBMIT FOR HANDLING TO THE DEPARTMENT OF PROCUREMENT SERVICES, ROOM 403, CITY HALL, 121 N. LASALLE STREET, CHICAGO, ILLINOIS 60602.

cc 7754512010

**GENERAL INFORMATION:**

Date: 10/15/08

REQ No.: 40428

Spec: ~~00000000~~ 69447

PO No.: (if known):

Modification No.: (if known):

Contact Person: DAVID BLOMAN

Tel: 686-7089

Fax:

E-mail:

@cityofchicago.org

Project Manager: William ALIVOS

Tel: 686-3411

Fax:

E-mail:

@cityofchicago.org

Previous PO No.: (if known):

Project Description: Propylene Glycol Urea (PGU) liquid runway Deicer

**FUNDING:**

- City:  Corporate  Bond  Enterprise  Grant\*  Other  
 State:  IDOT/Transit  IDOT/Highway  Grant\*  Other  
 Federal:  FHWA  FTA  FAA  Grant\*  Other

LINE	FY	FUND	DEPT	ORGN	APPR.	ACTV	OBJT	PROJECT	RPTG	\$ DOLLAR AMOUNT
	08	740	85	4005	0340		0340			17,235,000

Estimated Value \$

17,235,000

\*IF GRANT FUNDED, A COPY OF THE APPROVED GRANT AND APPLICATION ARE REQUIRED and any other Terms and Conditions that may apply.

**SCOPE STATEMENT:**

Attached is a Detailed Scope of Services and/or Specification

**IMPORTANT:** THIS IS A CRITICAL PORTION OF YOUR SUBMITTAL. IN ORDER FOR DPS TO ACCEPT YOUR SUBMITTAL YOU MUST COMPLETE THE SPECIFIC SCOPE REQUIREMENTS AS SET FORTH IN THE SUPPLEMENTAL CHECKLIST FOR THAT UNIT.

The following is a general description of what should be included in a Scope of Services or Specification:  
 A clear description of all anticipated services and products, including: time frame for completion, special qualifications of prospective vendors, special requirements or needs of the project, locations, anticipated participating user departments, citation of any applicable City ordinance or state/federal regulation or statute.

**TYPE OF PROCUREMENT REQUESTED (check all that apply):**

**NEW REQUEST**

- Blanket Agreement  
 Standard Agreement  
 Small Orders

**MOD/AMENDMENT**

- Time Extension  
 Vendor Limit Increase  
 Scope Change/Price Increase/Additional Line Item(s)  
 Other (specify):

**FORMS:**

Requisition

Special Approvals



Non-Competitive Review Board (NCRB)

CONTRACT TERM: 12/1/08 - 2/3/10

Requested Term (number of months): 16 + 0 extensions

**PRE BID/SUBMITTAL REQUIREMENTS:**

Requesting Pre Bid/Submittal Conference?  Yes  No Requesting Site Visit?  Yes  No

N/A

# DPS PROJECT CHECKLIST

## ARCHITECTURAL/ENGINEERING SUPPLEMENTAL CHECKLIST

**Required Attachments:** Scope of Services, including location, description of project, services required, deliverables, and other information as required

### Risk Management

Will services be performed within 50 feet of CTA train or other railroad property?  Yes  No

Will services be performed on or near a waterway?  Yes  No

If applicable, Pre-Qualification Category No. Category Description:

For Pre-Qualification Program, attach list of suggested firms to be solicited

Other Agency Concurrence Required:  None  State  Federal  Other (fill in)

## AVIATION CONSTRUCTION SUPPLEMENTAL CHECKLIST

DOA sign-off for final design documents:  Yes  No

### Required Attachments:

Copy of Draft Contract Documents and Detailed Specifications.

### Risk Management:

Current Insurance Requirements prepared/approved by Risk Management: Yes  No

Will work be performed within 50 feet of CTA or ATS structure or property? Yes  No

Will work be performed airside? Yes  No

\*NOTE: Any non-construction Aviation request, complete the applicable section.

## COMMODITIES SUPPLEMENTAL CHECKLIST

**Required Attachments:** Detailed Specifications (Scope of Services) including detailed description of the product, delivery location, user department contact, price escalation considerations, Bidder's qualification, contract term and extension options, Contractor's qualifications, citation of any applicable City/State/Federal statutes or regulations, citation of any applicable technical standards and Price Lists/Catalogs, technical drawings and other exhibits and attachments as appropriate.

If Modification request, please verify and provide the following:

Contractor's Name: Old World Industries 1050120A

Contractor's Address: 4065 Commercial Avenue  
Northbrook, IL 60062

Contractor's e-mail Address: JSALTZMAN@OLDWORLDIND.COM

Contractor's Phone Number: 847 559-2046

Contractor's Contact Person: JOEL SALTZMAN

## CONSTRUCTION SUPPLEMENTAL CHECKLIST

### Required attachments:

Copy of Draft (80% Completion), Contract Documents and Detailed Specifications

### Risk Management

Will services be performed within 50 feet of CTA train or other railroad property?  Yes  No

Will services be performed on or near a waterway?  Yes  No

# DPS PROJECT CHECKLIST

## VEHICLES/HEAVY EQUIPMENT SUPPLEMENTAL CHECKLIST

### Required Attachments:

- Detailed Specifications including detailed description of the vehicle(s) or equipment, mounted equipment, if any, and options/accessories.
- Special Provisions (Delivery, Warranty, Manuals, Training, Additional Unit Purchase Options, Bid Submittal Information, etc.)
- Delivery Location(s)
- Technical Literature
- Drawings, if any
- Part Number List (            Manufacturer; or            Dealer;            or Other Source:            )
- Current Price List(s)/Catalog(s)
- Special Approval Form
- Exhibits and Attachments

If Modification request, please verify and provide the following:

Contractor's Name:

Contractor's Address:

Contractor's e-mail Address:

Contractor's Phone Number:

Contractor's Contact Person:

## PROFESSIONAL SERVICES SUPPLEMENTAL CHECKLIST

- Detailed description of project listing obligations of each party.
- The Schedule of Compensation
- Deliverables
- Request for individual contract services (if applicable)
- The appropriate EPS form
- ITSC (approved by BIS)
- OBM (approved by Budget form/memo)
- Grant document attached

Attach any documentation indicating any previous purchase activity to assist in the procurement process

## TELECOMMUNICATIONS AND UTILITIES SUPPLEMENTAL CHECKLIST

**Required Attachments:** Detailed Scope of Services/Specification which sets forth all of the anticipated services and products the user department wants provided, including time frame for completion, special qualifications of prospective vendors, special requirements or needs of the project, locations, anticipated participating user departments, citation of any applicable City ordinance or state/federal regulation or statute.

Has the project been reviewed by DGS?             Yes     No

Attach copy of DGS Recommendation; Reservation(s); or participate under current contract.

Does the project include software?             Yes     No

If yes, is signed ITSC form attached?             Yes     No

Does the location involve:

A public way?             Yes     No

Any concession in the City's facilities?             Yes     No

Is it anticipated City Council approval of the project or contract will be required?             Yes     No



# DPS PROJECT CHECKLIST

## ~~WORK SERVICES/FACILITY MAINTENANCE SUPPLEMENTAL CHECKLIST~~

**Required Attachments:** Detailed Specifications (Scope of Services) including detailed description of the work, locations (with supporting detail), user department contacts, work hours/days, laborer/supervisor mix, compensation and price escalation considerations, Bidder's qualification, contract term and extension options, Contractor's qualifications, ~~citation of any applicable City/State/Federal statutes or regulations~~, citation of any applicable technical standards and Price Lists/Catalogs, technical drawings and other exhibits and attachments as appropriate.

### **Risk Management:**

Will services be performed within 50 feet (50') of CTA train or other railroad property?  Yes  No

Will services be performed on or near a waterway?  Yes  No

Will services require the handling of hazardous/bio-waste material?  Yes  No

Will services require the blocking of streets or sidewalks which may affect public safety?  Yes  No

**If Modification or Amendment request, please verify and provide the following:**

Contractor's Name:

Contractor's Address:

Contractor's e-mail Address:

Contractor's Phone Number:

Contractor's Contact Person:

**CITY OF CHICAGO  
 PURCHASE REQUISITION**

**Copy (Department)**

<b>DELIVER TO:</b>  209 AIRFIELD OPERATIONS OFFICE AMC BUILDING, O'HARE CHICAGO, ILL 60666, IL	<b>REQUISITION:</b> 40428  <b>PAGE:</b> 1 <b>DEPARTMENT:</b> 85 - DEPT OF AVIATION <b>PREPARER:</b> David A Bowman <b>NEEDED:</b> <b>APPROVED:</b> 10/14/2008
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**REQUISITION DESCRIPTION**

NEW NON COMPETITIVE PROCUREMENT CONTRACT FOR PROPYLENE GLYCOL UREA (PGU) LIQUID RUNWAY DEICER . 16 MONTH CONTRACT BEGINNIING 12/1/08 - 3/31/10. ESTIMATED VALUE \$17,235,000 (1,500,000 GALLONS @ \$11.49 / GALLON) SPECIFICATION NUMBER: 69447

**COMMODITY INFORMATION**

1,500,000      (11.49)

LINE	ITEM	QUANTITY	UOM	UNIT COST	TOTAL COST						
1	7754512010	#####	Gallon	0.00	0.00						
ANTI-ICER AND DE-ICER, RUNWAY (LIQUID) - PROPYLENE GLYCOL UREA (DELIVERY PER DETAILED SPECIFICATIONS)											
<b>SUGGESTED VENDOR:</b> OLD WORLD INDUSTRIES, INC.			<b>REQUESTED BY:</b> David A Bowman								
DIST	BFY	FUND	COST CTR	APPR	ACCNT	ACTV	PROJECT	RPT CAT	GENRL	FUTR	Dist. Amt.
1	008	0740	0854005	0340	220340	0000	00000000	000000	00000	0000	0.00
<b>LINE TOTAL:</b>											<b>0.00</b>

**REQUISITION TOTAL: 0.00**

Where a commodity is for a particular or unique use other than standard quality, grades, color, size or other characteristics, give details of how it will be and for what purpose. Requisitions prepared incorrectly will be returned to the using department.

**From:** <Bryan.McCreary@clariant.com>  
**To:** <DAVID.BOWMAN@cityofchicago.org>  
**Date:** 10/10/2008 3:32:30 PM  
**Subject:** Re: Deicer availability for 2008/09 snow season

Dave,

Per our conversation, Clariant is not currently in a position to offer the City of Chicago a minimum volume of 1,500,000 gallons of liquid runway deicing fluid.

Bryan McCreary  
North American Sales Manager  
Clariant Deicers

"DAVID BOWMAN"  
<DAVID.BOWMAN@cityofchicago.org>  
To  
<bryan.mccreary@clariant.com>  
cc  
"ANGELA MANNING"  
<amanning@cityofchicago.org>,  
10/09/2008 12:16 PM "AL PEREZ"  
<aperez@cityofchicago.org>,  
"William Palivos"  
<wpalivos@cityofchicago.org>  
Subject  
Deicer availability for  
2008/09 snow season

Bryan,

Per our conversation this morning please advise as to Clariant's ability to provide an approved liquid runway deicer for the upcoming snow season to the City of Chicago Department of Aviation (DOA). The DOA would require a commitment to a minimum availability of 1,500,000 gallons of liquid runway deicer.

Thank you for your timely response to this email.

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This e-mail, and any attachments thereto, is intended only for use by the addressee(s) named herein and may contain legally privileged and/or confidential information. If you are not the intended

recipient of this e-mail (or the person responsible for delivering this document to the intended recipient), you are hereby notified that any dissemination, distribution, printing or copying of this e-mail, and any attachment thereto, is strictly prohibited. If you have received this e-mail in error, please respond to the individual sending the message, and permanently delete the original and any copy of any e-mail and printout thereof.



October 2, 2008

Ms. Margaret Kline  
City of Chicago  
Department of Procurement Services  
Room 403, City Hall  
121 North LaSalle Street  
Chicago, IL 60602

RE: Specification No. 67509A, RFQ 3029

Dear Ms. Klein:

Cryotech Deicing Technology regrets to inform you that we cannot provide a bid for propylene glycol fluid deicer for use on runways at this time.

Cryotech provides propylene glycol based products for aircraft use. While there is not a supply shortage for our current market there is not available propylene glycol to add volume for an additional market such as runways.

Cryotech has an alternate product being tested now to AMS1435 that will also be performance tested with friction and various ice melting tests. Cryotech expects this product to be very similar to our BX36 ®, but without the potassium acetate component. This product could be bid at a later date (likely within 4 – 6 weeks) and would alleviate the shortage concerns of the potassium acetate and propylene glycol products.

As stated previously, Cryotech requests some of the RFQ requirements be relaxed if a bid for additional runway fluid is requested:

- Reduce or remove the minimum guaranteed volume requirement.
- Change from fixed season pricing to quarterly pricing.
- Change from Net 60 day payment terms to Net 30 day terms.
- Change to less restrictive insurance requirements including pollution liability and waiver of subrogation.
- Relax delivery requirements so product can be shipped from other locations.
- Remove or relax the requirement that restricts bidding to target market providers. This would allow bidders to provide product directly from the manufacturing plant or from other supply locations. Cryotech supports and uses many small and minority businesses as terminals, carriers, and suppliers. A list can be provided upon request.

If the City of Chicago would consider this product and/or has any questions about this product or the market situation, please do not hesitate to contact us.

Submitted,

CRYOTECH DEICING TECHNOLOGY

  
ROXANNA HUFFMAN  
Manager, Operations

**Office of Airports Briefing Paper**  
**on**  
**Potential Shortage of Potassium Acetate Runway Deicer Fluid**  
**September 15, 2008**

**Issue: The FAA has learned of a potential shortage of potassium acetate [KAc] based runway deicer fluid [RDF] for the 2008/09 winter season**

**Background**

- We have been informed by the leading manufacturer of KAc-based runway deicers, Cryotech Deicing Technology [CDT] headquartered in Fort Madison, Iowa, that the availability of their E36 [trade name] will be significantly limited for the 2008/2009 winter season.
- This situation is a direct result of the lack of raw materials used in the manufacturing of any KAc-based product.
- Raw materials are in short supply due to an on-going mine strike in Canada. As reported by CDT, last year they produced **9 million gallons** of E36 for the 2007/2008 winter season, but will only produce around **3 million gallons** for this upcoming winter season.
- We are fairly sure that other manufacturers of KAc products in North America will probably facing similar shortages of their KAc products.
- KAc-based products are the main RDF used in the U.S. As reported by CDT, if the mine strike ended today, the delivery of raw materials and the manufacturing of additional KAc-based products would still take a few months to alleviate this situation.
- Under Part 139, there are approximately 560 commercial airports. The FAA will work with the airports that use these fluids.

**FAA Actions:**

- As part of its continuing efforts to address additional/alternative deicing products, the FAA's Office of Airports will conduct testing of several runway deicer fluids that contain lesser amounts of KAc at **Pease International Tradeport Airport in New Hampshire** in late September. **NOTE: These tests were already planned prior to the FAA's notification of a potential shortage of KAc-based runway deicers.**
- One tested RDF will be a commercially available propylene glycol + urea RDF.
- Products showing successful results still need to pass aircraft compatibility tests under SAE Aerospace material specification AMS 1435.
  - All runway deicers must pass the friction testing and AMS 1435 specifications before being used on runways. One possible solution in an emergency situation is for the FAA to work with ATA to relax the one-year storage stability tests since airport operators can not use leftover RDF until it passes these tests. Fortunately, most if not all of these products are already in the one-year test.
- We anticipate success of most, hopefully all of these products, thus offering additional alternatives to airport operators.
- The results of the friction trials are expected in mid October and will be broadly disseminated to our certificated airports via Cert Alert, and to our non-certificated airports via newsletters and bulletins through our industry partners such as AAAE, ACI, ATA, NASAO, and AOPA.
- The FAA has an excellent working relationship with our industry partners and we are all committed to finding workable solutions to address this potential shortage of RDF, whose impact may vary from airport to airport.

**Recommended FAA Alternative measures:**

Airport operators have the option to use solid or liquid-based runway deicers

**Alternative Products and Sand –**

- Airport operators have other alternative fluid and solid runway deicers available on the market.
- One operational solution may be to use a fluid RD along with a solid RD, and sanding.

**Fluid alternatives-**

- FAA Advisory Circular 150/5200-30, *Airport Winter Safety and Operations*, (which is under rewrite and out for public comment) also recommends the fluids propylene glycol [PG] and ethylene glycol [EG] products meeting SAE AMS 1435.
  - These recommendations include products that contain lesser amounts of KAc or none at all. For example, BX36 has less KAc than E36, while some products combine PG+KAc, and products made of PG+urea have no KAc.
- We have been informed that sufficient supplies of PG+urea are available for existing and new customers.

**Solid alternatives-**

- AC 150/5200-30 also recommends dry material namely, urea, sodium formate, and sodium acetate products that satisfy SAE AMS 1431.
- Of the three dry materials, sodium acetate products are the most vulnerable to the shortage.
- However, we have not received reports of shortages in these products.

**Sand Selection** - should be as prescribed by AC 150/5200-30

**Contingency Back-Up Planning-**

- We recommend that airport operators that rely on KAc-based products take three actions.
- We recommend airports start developing a contingency plan that may include the use of glycol-based fluid alternative, a solid RD and/or sand.
- We also suggest airports owners ensure their tenants and operators well informed of the shortage.
- Involve the airport environmental specialist on the selection process so that the environmental runoff impacts are accounted for, if there are any.

**From:** WILLIAM PALIVOS  
**To:** DAVID BOWMAN  
**Date:** 7/8/2008 1:56:06 PM  
**Subject:** Historical Deicer Numbers

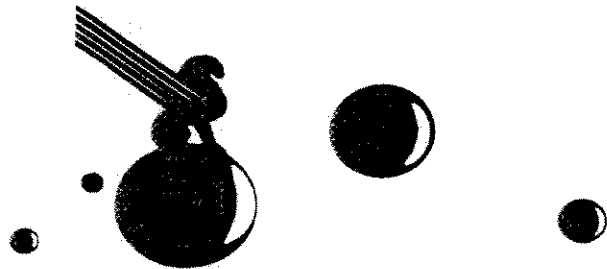
Dave,

These are the historical deicer purchase numbers for the last 9 years

Snow season	ORD Deicer purchased
1999-2000	860,608 gals
2000-2001	1,704,270 gals
2001-2002	723,918 gals
2002-2003	1,115,935 gals
2003-2004	1,610,660 gals
2004-2005	822,295 gals
2005-2006	778,366 gals
2006-2007	1,597,724 gals
2007-2008	2,465,252 gals

**CC:** AL PEREZ; GEORGE LYMAN; WILLIAM PALIVOS





**OLD WORLD INDUSTRIES, INC.**  
4065 COMMERCIAL AVENUE  
NORTHBROOK, ILLINOIS 60062-1851  
847-559-2000 • FAX 847- 559-1329

October 14, 2008

Mr. David Bowman  
Department of Aviation  
City of Chicago  
Department of Procurement Services  
Room 403, City Hall  
121 North LaSalle Street  
Chicago, IL 60602

Dear Dave,

Old World Industries, Inc ("Seller") is pleased to offer the following proposal in response to the City of Chicago's Department of Aviation ("Buyer") emergency request for quotation of essential products. Terms that must be incorporated into Buyer's purchase order are as follows:

**Term:** December 1, 2008 – March 31, 2010

**Product:** ORD 2000 Propylene Glycol/Urea blend runway deicer (specification attached)

**Volume:** 1,500,000 gallons non-cancelable, minimum purchase commitment. Additional volume subject to mutual acceptance of then current price and conditions as agreed to by both Buyer and Seller, Any remaining physical inventory as of March 31, 2009 will be billed to Buyer and paid for by Buyer, within stated payment terms. The remaining physical inventory will be stored by Seller at Seller's expense and shipped at no cost to Buyer as required with the understanding the entire 1,500,000 gallons will be shipped not later March 31, 2010.

**Price:** \$11.49 per gallon, delivered to O'Hare International Airport

**Payment Terms:** Net 60 days from date of invoice

**Freight:** Freight to be prepaid by Seller. All demurrage incurred due to delay of product discharge at O'Hare Airport will be billed at cost to the Buyer, as it is incurred.

Mr. David Bowman  
Department of Aviation  
City of Chicago  
October 10, 2008  
Page 2 of 3

**Production/Storage:**

Seller currently maintains Propylene Glycol storage capacity of 586,000 gallons at IMTT terminals in Lemont, Illinois. Upon acceptance of this proposal and receipt of purchase order from Buyer, Seller will execute an additional lease of 383,750 gallon safe fill capacity storage tank with blending capabilities (max batch size – 320,000 gallons) which will be employed to produce and store ORD 2000. The blend tank will be connected by pipeline to Seller's current Propylene Glycol storage tank. The blend tank requires installation of blending equipment with capital required by Seller and requires a minimum 30 days for installation of referenced equipment.

**Lead Times:**

Seller will deliver a minimum of 50,000 gallons of ORD 2000 within two hours after receiving notification by the Buyer and an additional 50,000 gallons every three hours after the initial delivery.

**Force Majeure:**

Seller shall not be liable for non-performance or a delay in performance due wholly or partly to any cause, condition or event that is beyond its reasonable control (a "Force Majeure"). Upon the occurrence of any such Force Majeure Event, Seller shall give Buyer reasonable notice thereof and may suspend and reduce deliveries during the period of such event, and the total quantity of Product deliverable under this Agreement shall be reduced by the quantities so omitted. The following, while not an exclusive listing, shall be considered to be Force Majeure Events: accidents; acts of God including but not limited to disease, draught, earthquakes, explosion, fire, floods, storms, wind; acts of war or terrorism; actions of any governmental or legislative authority; court actions and decrees; labor unrest or strikes; machinery malfunctions, breakdowns or unplanned turnarounds; riots; sabotage; transportation interruptions; or any cause or circumstance, whether similar or dissimilar to the foregoing, which makes economically impracticable the production, storage, transportation or delivery of the Product or any material or service used in or in connection with its production.

Mr. David Bowman  
Department of Aviation  
City of Chicago  
October 10, 2008  
Page 3 of 3

This offer is valid through close of business on Thursday, October 17, 2008.

Sincerely,

**Old World Industries, Inc.**

Joel Saltzman  
Senior Vice President – General Manager

**Accepted by:**

---

**Signature:**

---

**Title:**

---

**Date:**

---

# ORD 7000

LIQUID  
PG/UREA

## Product Information Sheet

### Runway Deicer

#### Description

PG/Urea Runway Deicing Fluid is formulated to meet the new and tighter environmental considerations facing airport operators. It is designed for airport runway applications where low operating temperatures are experienced. PG/Urea Runway Deicing Fluid meets the stringent requirements of AMS 1435.

#### Application

##### DEICING

The primary purpose of chemical deicing is not to melt surface ice, but rather to diffuse down through the snow and ice to break the bond between frozen precipitation and the runway. Use about 1 gallon per 1000 sq. ft.. Usage may vary depending on density and depth of frozen precipitation.

##### ANTI-ICING

The most cost effective way to utilize runway deicing fluid is by preventing frozen precipitation from sticking. (typical use: 1/3 - 1/2 gallon/1000 sq. ft.)

#### EQUIPMENT

Standard liquid spraying units can be used. Check with equipment manufacturer for exact recommendations.

#### Storage and Handling

Storage tanks are recommended to be of stainless steel, fiberglass, reinforced plastic or mild steel coated with protective liner. Clean and inspect equipment before and after the winter season.

#### Specifications

<b>APPEARANCE</b> . . . . .	Blue™, mobile liquid
<b>FREEZE POINT (ASTM D1177)</b> . . . . .	Lower than -40°F
<b>SPECIFIC GRAVITY</b> . . . . .	1.05 - 1.10
<b>POUNDS PER GALLON, TYPICAL</b> . . . . .	9.1
<b>pH</b> . . . . .	9.5 - 10.5
<b>FLASH POINT (CC)</b> . . . . .	None

\* Clear upon customer request

#### Safety and Environment

Tests show PG/Urea Runway Deicing Fluid is biodegradable in both surface waters and wastewater treatment plants. Always read and understand Material Safety Data Sheet before using the product.

#### Benefits

- Active at sub-zero temperatures
- Excellent snow melting characteristics
- Allows extended airport operation during weather event
- Sprayable liquid for ease of application
- Moderate pH range (9.5 - 10.5)
- PG deicer is not subject to the reporting requirements of EG deicer fluids.



The Science of Deicing™



Effective Date: 10/18/00

## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT & COMPANY INFORMATION

#### PRODUCT IDENTITY: Propylene Glycol/Urea Runway Deicer Fluid – ORD 2000

Chemical Name: Propylene Glycol  
Urea  
Chemical Family: Glycol  
Urea  
Synonyms: 1,2 Propanediol; Methyl Ethylene Glycol  
Carbamide  
Chemical Formula:  $C_3H_8O_2$   
 $CO(NH_2)_2$

OLD WORLD INDUSTRIES, INC.  
4065 COMMERCIAL AVENUE  
NORTHBROOK, ILLINOIS 60062  
PHONE: 847-559-2000  
EMERGENCY PHONE: 1-800-424-9300 (CHEMTREC)

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>MATERIAL</u>	<u>CAS#</u>	<u>% BY WT</u>
Propylene Glycol	57-55-6	50%
Urea	57-13-6	20%

Exposure Guidelines: OSHA STANDARDS - None established.

Guidelines:

ACGIH THRESHOLD LIMIT VALUES - None established.

AIHA WEEL: 50 ppm total, 10 mg/m<sup>3</sup> aerosol only.

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

Liquid is irritating to eyes and skin. Ingestion of propylene glycol can result in mental sluggishness, followed by difficulty in breathing and heart failure, kidney and brain damage. Combustible liquid when exposed to heat or flame.

#### HAZARD RATING SYSTEM

NPFA: HEALTH: 0    FLAMMABILITY: 1    REACTIVITY: 0

KEY: 0 - Minimal,    1 - Slight,    2 - Moderate,    3 - Serious,    4 - Severe

#### POTENTIAL HEALTH EFFECTS

Target Organs:                      Central nervous system, skin, eyes, respiratory system, liver, kidneys.

Routes of Exposure:                Ingestion, skin contact and absorption, eye contact, inhalation.

Eyes:                                    Stinging and mild hyperemia have occurred with eye exposure.

Skin:                                    Essentially non-irritating. Prolonged contact may cause skin softening. Slightly toxic to animals by absorption.

Ingestion:                            Considered relatively non toxic following acute ingestion, however, lactic acidosis, stupor, and seizures have been reported following chronic ingestion. Renal and hepatic toxicity have been noted in animals. Probable oral lethal dose for humans is above 15 g/kg; for 70 kg person (150 lb), more than 1 qt (2.2 lb).

Inhalation:                            If inhaled, symptoms include general anesthetic effect, headache, coughing, nausea or vomiting.

Signs/Symptoms:                    Overexposure to propylene glycol can cause CNS depression, malaise, dizziness, fatigue, and headache, liver or kidney injury, and death from anesthetic effects.

Chronic Effects:                      Damage to liver, kidneys, lungs, blood, and central nervous system.

#### 4. FIRST AID MEASURES

*Ensure physician has access to this MSDS.*

- Eyes:** Immediately flush eyes with large amounts of water for 15 minutes, lifting lower and upper lids. Get medical attention as soon as possible. Contact lenses should never be worn when working with this chemical.
- Skin:** Flush area of skin contact immediately with large amounts of water for at least 15 minutes while removing contaminated clothing. If irritation persists after flushing, get medical attention promptly. Wash clothing before re-use.
- Inhalation:** If inhaled, immediately remove victim to fresh air and call **emergency medical care**. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
- Ingestion:** If swallowed give two glasses of water and immediately **call physician**. Induce vomiting of conscious patient by pressing finger down throat. Small amounts entering mouth should be rinsed out for 5 minutes.

#### 5. FIRE FIGHTING MEASURES

##### FIRE & EXPLOSION HAZARD DATA

- |                                 |                  |            |
|---------------------------------|------------------|------------|
| Flashpoint (OC):                | none             |            |
| Auto Ignition Temp:             | none established |            |
| LEL:                            | 2.6% by volume   |            |
| UEL:                            | 12.6% by volume  |            |
| Sensitive to Mechanical Impact: | No               | Static: No |
- Extinguishing Media:** Alcohol foam, water, foam, carbon dioxide, or dry chemical
- Special Procedures:** Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode.
- Explosion Hazards:** For mist in air, moderate explosion hazard when exposed to flames.
- Small Fire:** Dry chemical, carbon dioxide or halon.
- Large Fires:** Water spray, fog or standard foam is recommended. Cool containers that are exposed to flames with water from the side until well after fire is out. If the fire involves a tank car or truck, isolate the area for 1/2 mile in all directions. Stay away from ends of tanks

## 6. ACCIDENTAL RELEASE MEASURES

- Large Spill:** Wear self-contained breathing apparatus and full protective clothing. Stop leak if you can do so without risk. Ventilate area. Dike area if feasible. Take up with vermiculite, dry sand, or earth.
- Small Spill:** Use full protective clothing including high efficiency particulate respirator. Take up with vermiculite, dry sand, or earth.

## 7. HANDLING AND STORAGE

Keep containers tightly closed. Store in a cool, dry, well-ventilated location, away from strong oxidizers, potential fire hazards, and incompatible chemicals.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Respiratory Protection:** Respiratory protection is required if airborne concentration exceeds TLV. At any detectable concentration, any self-contained breathing apparatus with a full facepiece and operated in a pressure-demand or other positive pressure mode or any supplied-air respirator with a full facepiece and operated in a pressure-demand or other positive pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive pressure mode.
- Escape:** Any air-purifying full facepiece respirator (gas mask) with a chin-style or front- or back-mounted organic vapor canister or any appropriate escape-type self-contained breathing apparatus.
- Skin Protection:** Protective gloves recommended when prolonged skin contact can not be avoided. Safety shower should be available.
- Eye Protection:** Safety goggles and face shield. Emergency eyewash should be available. Contact lenses should not be worn when working with this chemical.
- Engineering Controls:** Use general or local exhaust ventilation to meet TLV requirements.
- Special Precautions:** Trace quantities of propylene oxide (PO) may be present in this product. While these trace quantities could accumulate in the headspace areas of storage transport vessels, they are not expected to create a condition which will result in PO concentration greater than the OSHA established permissible exposure limit of 20 ppm (8 hour TWA) for PO.



**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Colorless viscous liquid
Odor:	Slight ammonia odor
Physical State:	Liquid
Boiling Point:	188°C (370°F) @ 760 mm Hg
Freezing Point:	-59°C (-74.2°F)
Solubility:	Complete
% Volatiles:	50
Specific Gravity (H <sub>2</sub> O=1):	1.09 @25°C (77°F)
Evaporation Rate:	Not available
Odor Threshold:	Not available
Oil/Water Coefficient:	Not available

**10. STABILITY AND REACTIVITY**

Stability:	Stable under normal conditions of use. Can react with oxidizing materials stable under ordinary conditions. Tends to oxidize at high temperatures.
Incompatibility:	Strong oxidizing agents and strong acids. May react with hydrofluoric acid + nitric acid + silver nitrate to form the explosive silver fulminate.
Hazardous Products Decomposition:	Acrid smoke and irritating fumes. Carbon monoxide and carbondioxide may evolve.
Hazardous Polymerization:	Will not occur

**11. TOXICOLOGICAL INFORMATION**

Irritation data:	skin-human	500 mg/7D MILD
	skin-human	104 mg/3D MODERATE
	skin-man	10%/2D
	eye-rabbit	100 mg/24H MILD
Mutagenic Data:	DNA Inhibition System (mouse: subcutaneous) 8000 mg/kg	
	Cytogenetic Analysis (mouse: subcutaneous) 8000 mg/kg	
	Cytogenetic Analysis (hamster: fibroblast) 32 g/l	

## Toxicity Data:

intraperitoneal-mouse	TDL <sub>0</sub> : 100 mg/kg
oral-child	TDL <sub>0</sub> : 79 g/kg
oral-rat	LD <sub>50</sub> : 20 g/kg
intraperitoneal-rat	LD <sub>50</sub> : 6660 mg/kg
subcutaneous-rat	LD <sub>50</sub> : 22500 mg/kg
intravenous-rat	LD <sub>50</sub> : 6423 mg/kg
intramuscular-rat	LD <sub>50</sub> : 14 g/kg
oral-mouse	LD <sub>50</sub> : 22 g/kg
intraperitoneal-mouse	LD <sub>50</sub> : 9718 mg.kg
subcutaneous-mouse	LD <sub>50</sub> : 17370 mg/kg
intravenous-mouse	LD <sub>50</sub> : 6630 mg/kg

## Classification of carcinogenicity:

None

**12. ECOLOGICAL INFORMATION****ENVIRONMENTAL FATE**

## Ecotoxicity Values:

No data available

## Terrestrial Fate:

1,2-Propanediol has been shown to biodegrade readily by a number of biological screening studies, and is expected to biodegrade in soil. Based on its complete water solubility and log Kow (-0.92), 1,2-propanediol can be expected to be susceptible to significant leaching. However, concurrent biodegradation may proceed rapidly enough to diminish the importance of leaching. Evaporation from dry surfaces is likely to occur; however, volatilization from moist soils may not be significant.

## Aquatic Fate:

Aquatic hydrolysis, oxidation, volatilization, bioconcentration, and adsorption to sediment are not expected to be significant fate processes. Therefore, when 1,2-propanediol is released to the aquatic environment, it is expected to be removed via biological processes.

## Atmospheric Fate:

1,2-Propanediol is expected to exist almost entirely in the vapor-phase in the ambient atmosphere, based on a vapor pressure of 0.08 mm Hg at 20°C. (1,2). It is degraded rapidly in the vapor-phase by reaction with photochemically produced hydroxyl radicals (estimated half-life of 32 hr in an average ambient atmosphere). The complete water solubility of 1,2-propanediol suggests that physical removal from the atmosphere via rainfall is possible. [(1) Weber RC et al; Vapor Pressure Distribution of Selected Organic Chemicals. USEPA-600/2-81-021 p. 28 (1981) (2) Eisenreich SJ et al; Environ Sci Technol 15: 30-8 (1981)]

**Biodegradation:**

Standard dilution BOD water, 5-day 64% Theoretical Biochemical Oxygen Demand, sewage inocula (1). Warburg respirometer, 40-day 78% Theoretical Biochemical Oxygen Demand, sewage inocula (2). Nutrient broth, 100% degradation in 4 days (aerobic conditions), 100% degradation in 4-9 days (anaerobic conditions), activated sludge or digester sludge inocula, no significant degradation in sterile controls (3). Standard dilution BOD water, 5-day 2.2% Theoretical Biochemical Oxygen Demand, 10-day 56.7% Theoretical Biochemical Oxygen Demand, 50-day 80% Theoretical Biochemical Oxygen Demand, sewage inocula (4). Standard dilution BOD water, 5-day 62% Theoretical Biochemical Oxygen Demand, 20-day 79% Theoretical Biochemical Oxygen Demand, sewage inocula (5); synthetic seawater dilution, 5-day 55% Theoretical Biochemical Oxygen Demand, 20-day 83% Theoretical Biochemical Oxygen Demand, raw wastewater inocula (5). Sewage die-away, 74.5% Theoretical Biochemical Oxygen Demand in 5 days (6). 1,2-Propanediol has been found to be degradable via anaerobic biotechnology (7,8). Wastewater treatment, 95% removal in 6 hr, activated sludge inocula (9). Standard dilution BOD water, 5-day 26.6% Theoretical Biochemical Oxygen Demand; seawater dilution, 5-day 59.5% Theoretical Biochemical Oxygen Demand (10). [(1) Bridie AL et al; Water Res 13: 627-30 (1979) (2) Helfgott TB et al; An Index of Refractory Organics. USEPA-66/2-77-174 (1977) (3) Kaplan DL et al; Environ Sci Technol 16: 723-5 (1982) (4) Lamb CB, Jenkins GF; p. 326-9 in Proc 8th Industrial Waste Conf, Purdue Univ (1952) (5) Price KS et al; J Water Pollut Control Fed 46: 63-77 (1974) (6) Wagner R; Vom Wasser 47: 241-65 (1976) (7) Chou WL et al; Biotechnol Bioeng Symp 8: 391-414 (1979) (7) Speece RE; Environ Sci Technol 17: 416A-427A (1983) (9) Grumwald A et al; Vodni Hospod 34: 247-52 (1984) (10) Takemoto S et al; Suishitsu Odaku Kenkyu 4: 80-90 (1981)]

**Abiotic Degradation:**

The experimentally determined rate constant for the vapor-phase reaction of 1,2-propanediol with photochemically produced hydroxyl radicals has been reported to be  $12 \times 10^{-12}$  cm<sup>3</sup>/molecule-sec at 22°C (1); the atmospheric half-life for this reaction can be estimated to be 32 hours, assuming an average atmospheric hydroxyl radical concentration of  $5 \times 10^5$  molecules/cm<sup>3</sup> (1). The rate constant for the reaction of 1,2-propanediol with hydroxyl radicals in aqueous solution is approximately  $0.94-1.68 \times 10^9$  L/mol-sec (2); if the hydroxyl radical concentration of sunlit natural water is assumed to be  $1 \times 10^{-17}$  moles/L (4), the half-life would be approximately 1.3-2.3 years. Glycols are generally resistant to aqueous hydrolysis in the environment (5). [(1) Atkinson RA; Chem Rev 85: 60-201 (1985) (2) Anbar M, Neta; Int J Appl Radiation and Isotopes 18: 493-523 (1967) (3) Dorfman LM, Adams GE; Reactivity of the Hydroxyl Radical in Aqueous Solution. NSRD-NBS-46, National Bureau of Standards (1973) (4) Mill T et al; Science 207: 886-7 (1980) (5) Lyman WJ et al;

Handbook of Chemical Property Estimation Methods NY: McGraw-Hill p. 7-4 (1982)]

**Bioconcentration:**

Based on a log Kow of -0.92 (1), the BCF for 1,2-propanediol can be estimated to be <1 from a recommended regression-derived equation (2). [(1) Hansch C, Leo AJ; Medchem Project Issue No 26. Claremont CA: Pomona College (1985) (2) Lyman WJ et al; Handbook of Chemical Property Estimation Methods NY: McGraw-Hill p. 5-4 (1982)]

**Soil Adsorption/Mobility:**

1,2-Propanediol is completely miscible in water and has a log Kow of -0.92 (1,2). These properties are indicative of very high mobility in soil. [(1) Merck Index; An Encyclopedia of Chemicals, Drugs and Biologicals 10th ed p. 1130-1 (1983) (2) Hansch C, Leo AJ; Medchem Project Issue No 26. Claremont CA: Pomona College (1985)]

**Volatilization:**

The Henry's Law Constant for 1,2-propanediol is approximately  $1.2 \times 10^{-8}$  atm m<sup>3</sup>/mole (1). This value of Henry's Law Constant indicates that 1,2-propanediol is essentially not volatile from water (2). [(1) Simmons P et al; p. 212-7 in Book Pap, Int Tech Conf. Research Triangle Park, NC: Amer Assoc Text (1976) (2) Lyman WJ et al; Handbook of Chemical Property Estimation Methods NY: McGraw-Hill p. 15-16 (1982)]

### 13. DISPOSAL CONSIDERATIONS

DO NOT discharge to sewer. Wear appropriate personal protection. Take up with sand, vermiculite, or similar inert material. Dispose in accordance with federal, state and local regulations.

### 14. TRANSPORT INFORMATION

Proper Shipping Name:	Propylene Glycol/Urea
ID No.:	Not regulated
Hazard Class:	Not regulated
Packaging Group:	Not regulated
Label:	Not regulated

### 15. REGULATORY INFORMATION

*THIS PRODUCT CONTAINS COMPONENT(S) CITED ON THE FOLLOWING REGULATIONS:*

*United States*

TSCA - Inventory:	Listed
Water Standards:	Not regulated.

Atmospheric Standards Not regulated.

CERCLA : Not regulated.

SARA Title III: Section 311/312 - Categories: Acute

Section 312 - Inventory Reporting: Propylene glycol is not subject to Tier I and/or Tier II annual inventory reporting.

Section 313 - Emission Reporting: Propylene glycol is not subject to Form R reporting requirements.

Section 302 - Extremely Hazardous Substances: Propylene glycol is not listed.

#### *Other Regulations*

##### California

Exposure Limits - Ceilings: not listed

Dir. List of Haz. Substances: not listed

##### Florida

Hazardous Substances List: not listed

##### Massachusetts

Right-to-Know List: not listed

##### Minnesota

Haz. Subs. List: listed

##### New Jersey

Right-to-Know List (Total): not listed

##### Pennsylvania

Right-to-Know List: listed

##### Michigan

Critical Materials List: not listed

##### Canada

WHMIS: 1% on Ingredient Disclosure List - item 1362 (1454),  
not regulated

### 16. OTHER INFORMATION

Contact: Karen Engelbrecht

Phone: (847) 559-2000

Old World Industries, Inc. makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use.

handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, Inc. as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, Inc. assume liability arising out of the use by others of this product referred to herein. The data in this MSDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.