EXPOSURE CHARACTERIZATION

FOR

Ethylene glycol diethyl ether (CASRN: 629-14-1)
Ethane, 1,2-diethoxy-

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Prepared by

Exposure Assessment Branch
Chemical Engineering Branch
Economics, Exposure and Technology Division
Office of Pollution Prevention and Toxics
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0001

Exposure Characterization
Ethane, 1,2-diethoxy- (CASRN: 629-14-1)

Production Volume, Use, and Release Information

Ethane, 1,2-diethoxy- (CASRN 629-14-1) had an aggregated production and/or import volume in the United States of less than 500,000 pounds in calendar year 2005.

No industrial processing and uses were reported in the IUR for the chemical. No commercial and consumer uses were reported in the IUR for the chemical. The Hazardous Substances Data Bank (HSDB) for ethane, 1,2-diethoxy- (CASRN 629-14-1) states that the chemical is primarily used as an inert reaction medium; a diluent for detergents; or a solvent for ester gum, shellac, and some resins and oils.[1]

Based on use information, there is potential for environmental releases to water, land, and/or air during manufacturing, processing, and/or use. This chemical is reported as part of the Ethylene Glycol category in TRI, but not individually. The total release reported in the 2007 TRI from all reporting sites is 18,476,420 pounds for the chemicals in this category.

Exposure Characterization Summary

EPA identifies a medium potential that the general population and the environment might be exposed to chemicals in this category based on known uses and reported TRI releases.

EPA identifies a low relative ranking for this chemical for potential worker exposure based primarily on reported IUR production volumes, use information and the number of workers potentially exposed.

EPA identifies a high potential that consumers might be exposed to this chemical based on use in consumer products. The Source Ranking Database indicates that this chemical is found in consumer products.

EPA identifies a medium potential that children might be exposed to this chemical through household use of some consumer products based on IUR and other data sources. No uses in products specifically intended to be used by children were reported in these data sources.

[1] HSDB, 2008. Hazardous Substances Data Bank. Accessed, 08/26/2009, Ethylene glycol (CASRN: 629-14-1). http://toxnet.nlm.nih.gov/

Appendix B: Screening Level Exposure Characterization

Ethylene glycol diethyl ether (CASRN: 629-14-1)
Ethane, 1,2-diethoxy-

This exposure characterization was completed using both public, non-confidential sources, and one or more IUR submissions that were available as of this writing.

Volume and Use Information

This chemical had an aggregated production and/or import volume in the United States of less than 500,000 pounds in calendar year 2005.[2] Non-confidential information in the IUR indicates that this chemical was manufactured and/or imported at the following companies and sites: Ferro Corporation (Zachary, LA). There may be other companies and sites that are claimed confidential. Persons submitting IUR information for 2005 asserted that some or all of the information was confidential. Only non-confidential versions of reported IUR data are included in this summary.

No industrial processing and uses or commercial/consumer uses are reported in IUR submissions.

The Hazardous Substances Data Bank (HSDB) for this chemical states that the chemical is primarily used as an inert reaction medium; a diluent for detergents; or a solvent for ester gum, shellac, a solvent for ester gum, shellac, and some resins and oils.[3]

Environmental Releases

Environmental releases may impact general population and environmental exposures. Factors affecting releases include volumes produced, processed and used; numbers of sites; and processes of manufacture, processing, and use.

Based on IUR data, the maximum total number of industrial sites manufacturing, processing, or using this chemical is less than 100.

The following release statements are made based on inferences regarding the non-confidential use information reported in public data sources.

Chemicals with unknown industrial use can have variable release percentages during industrial processing and use. The actual percentage and quantity of release of the reported chemical associated with this category are not known.

[2] USEPA, 2006. Inventory Update Reporting Database. Version 1.03
[3] HSDB, 2008. Hazardous Substances Data Bank. Accessed, 08/26/2009, Ethylene glycol (CASRN: 629-14-1). http://toxnet.nlm.nih.gov/

The chemical is on the Toxics Release Inventory, as part of a category.[4] Chemicals in this category are reported as "certain glycol ethers" under the CAS number N230. The total release reported in 2007 from all reporting sites is 18,476,420 pounds. This total includes air releases of 16,416,033 pounds from on-site fugitive and point sources, in addition to on-site water releases of 87,035 pounds. Most of the remaining volume of release was deep-well injected, sent to land treatment, transferred for energy recovery or transferred to a POTW. Releases of individual chemicals in this category are not known.

Table 1. Summary of TRI Releases

Company Name, Site Location	Total Releases from Site (lb/yr)
EQ DETROIT INC, 1923 FREDERICK, DETROIT , WAYNE, MI	661,058
BALL METAL BEVERAGE CONTAINER CORP, 8935 POCAHONTAS TRAIL JAMES RIVER COMMERCE CENTER, WILLIAMSBURG , JAMES CITY, VA	359,000
REXAM BEVERAGE CAN CO RE: WINSTON SALEM PLANT, 4000 OLD MILWAUKEE LN, WINSTON-SALEM , FORSYTH, NC	344,746
CHRYSLER ST. LOUIS NORTH ASSEMBLY PLANT, 1050 DODGE DR, FENTON , ST LOUIS, MO	336,011
BALL METAL BEVERAGE CONTAINER CORP, 12340 TOWNSHIP RD 99 E, FINDLAY , HANCOCK, OH	308,000
WHIRLPOOL CORP MARION D IVISION, 1300 MARION-AGOSTA RD, MARION , MARION, OH	256,184
SANYO SOLAR (USA) LLC, 970 E 236TH ST, CARSON , LOS ANGELES, CA	242,783
REXAM BEVERAGE CAN CO RE: FREMONT PLANT, 2145 CEDAR, FREMONT , SANDUSKY, OH	239,200
REXAM BEVERAGE CAN CO RE: WHITEHOUSE PLANT, 10444 WATERVILLE, WHITEHOUSE , LUCAS, OH	209,963
CROWN CORK & SEAL CO (USA) INC CROWN CLOSURE DIV, 3011 BIRCH DR, WEIRTON , BROOKE, WV	202,266
REXAM BEVERAGE CAN CO OLIVE BRANCH FACILITY, 10800 MARINA DR, OLIVE BRANCH , DESOTO, MS	189,816
REXAM BEVERAGE CAN CO KENT WA FACILITY, 1220 N SECOND AVE, KENT , KING, WA	184,587
REXAM BEVERAGE CAN CO RE: BISHOPVILLE SC FACILITY, 609 COUSAR ST, BISHOPVILLE , LEE, SC	180,079
REXAM BEVERAGE CAN CO RE: EVA STREET ST PAUL MN, 139 EVA ST, SAINT PAUL , RAMSEY, MN	178,827
REXAM BEVERAGE CAN CO LONGVIEW FACILITY, 1001 FISHER RD, LONGVIEW , GREGG, TX	171,826
BALL METAL BEVERAGE CONTAINER CORP, 1900 BARNES ST, REIDSVILLE , ROCKINGHAM, NC	168,000
REXAM BEVERAGE CAN CO RE FOREST PARK FACILITY, 48 ROYAL DR, FOREST PARK , CLAYTON, GA	160,841
REPUBLIC ENGINEERED PRODUCTS INC. LORAIN PLANT, 1807 E 28TH ST, LORAIN , LORAIN, OH	160,001
BALL METAL BEVERAGE CONTAINER CORP, 8500 W TOWER AVE, MILWAUKEE , MILWAUKEE, WI	159,800
BMW MANUFACTURING CO LLC, 1400 HWY 101 S, GREER , SPARTANBURG, SC	159,730
Releases Grand Total	18,530,224

Source: TRI for 2007 from TriExplorer.
Note: only sites with top 20 releases were included in the list. Total release includes all reporting sites.

This chemical has a vapor pressure of 33.7 mmHg at 25ºC. Experience has shown that air releases due to volatilization have not been an issue for chemicals with vapor pressures below

[4] USEPA, 2007. Toxic Release Inventory. Accessed, 9/3/09. http://www.epa.gov/triexplorer/.

0.01 mm Hg. This chemical's vapor pressure indicates potential for air releases from volatilization.

Exposures to the General Population and the Environment

Based on the available information under the release section above, it is likely that there would be some releases to water, land, and/or air during manufacturing, processing, and use. A search of additional relevant databases did not provide any further information on releases of this chemical.

This chemical is included in the STORET.[5] Potential exposure to the general population, environment, and children is likely from this chemical found in ground water or surface water.

Persistence and bioaccumulation ratings for this chemical are P2 and B1.[6] These ratings suggest that this chemical is persistent in the environment; and is not bioaccumulative. This chemical is expected to possess moderate to high water solubility and high mobility in soil. The rate of hydrolysis is considered negligible and volatilization is considered low to moderate based on the estimated Henry's Law constants.

Based on the information considered, including environmental fate, known uses, reported TRI releases, and the Agency's expert judgment, EPA identifies, for purposes of risk-based prioritization, a medium potential that the general population and the environment might be exposed to chemicals in this category.

Exposures to Workers

Worker exposures may be impacted by many factors, including but not limited to volumes produced, processed and used; physical forms and concentrations; processes of manufacture, processing, and use; chemical volatility, and exposure controls, such as engineering controls and personal protective equipment.

Based on IUR data, the maximum total number of workers reasonably likely to be exposed to this chemical during manufacturing and industrial processing and use may be less than 100. There may be additional potentially exposed industrial workers who are not included in this estimate. This estimate does not include potentially exposed commercial workers.

The National Occupational Exposure Survey (NOES) has no data for total number of workers potentially exposed to this chemical under the CAS number 629-14-1.[7]

Based on IUR data, this chemical is manufactured in liquid forms, and worker exposures through dermal contact are possible for chemicals in these forms. There may be other physical forms that are claimed confidential. Physical and chemical property information indicates that the physical

[5] USEPA, 2008. STORET. Accessed, 02/12/08. http://www.epa.gov/storet/

[6] USEPA, 2009. Screening-Level Hazard Characterization for High Production Volume Chemicals, Glycol Ethers. August 2009.

[7] NIOSH, 1983. National Occupational Exposure Survey (NOES, 1981-1983). Accessed, 05/14/2008. http://www.cdc.gov/noes/

state of the pure chemical is liquid. Also, the non-confidential maximum concentration is up to 100%. There may be other concentrations that are claimed confidential.

This chemical has a vapor pressure of 33.7 mm Hg at 25ºC.[8] Experience has shown that worker inhalation exposures to vapors have not been an issue for chemicals with vapor pressures below 0.001 mm Hg. This chemical's vapor pressure could result in worker inhalation exposures to vapors if workers are near to the open liquid.

This chemical does not have OSHA Permissible Exposure Limits (PELs)[9].

None of the uses indicate an obvious potential for inhalation exposure.

Based on all available information, workers may be exposed by the dermal route. Although the TRI indicates air releases, it is not known whether workers are exposed to this chemical by the inhalation route.

EPA identifies, for the purposes of risk-based prioritization, a low relative ranking for potential worker exposure based on a low PV (<500,000 pounds), less than 100 workers potentially exposed, and the Agency's professional judgment. In addition, little information on the uses of these chemicals is available and the potential for worker exposure is uncertain.

Exposures to Consumers

There were no reported consumer uses in the 2006 IUR submissions for this chemical.

There is also potential for exposure to consumers based on information from public data sources.

This chemical was listed in the Source Ranking Database (SRD), which indicates that these chemicals were contained in one or more consumer products.[10] There is potential that consumers and children might be exposed to this chemical from consumer products containing this chemical.

EPA identifies, for the purposes of risk-based prioritization, a high potential that consumers might be exposed to this chemical based on the use of products containing this chemical reported in public data sources.

Exposures to Children

This chemical was found in consumer products. EPA identifies a medium potential that children might be exposed to this chemical through household use of some consumer products based on

[8] USEPA, 2009. Screening-Level Hazard Characterization for High Production Volume Chemicals, Glycol Ethers. August 2009.
[9] OSHA, 2009. Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs). http://www.osha.gov/SLTC/pel/recognition.html. Accessed, 09/01/2009.
[10] US EPA, 2008. Source Ranking Database (SRD). Accessed, 05/19/08. http://www.epa.gov/opptintr/exposure/pubs/srd.htm.

IUR and other data sources. No uses in products specifically intended to be used by children were reported in these data sources.

Non Confidential 2006 IUR Data Summary

CASRN 629-14-1

Manufacturing/Import Information

Production and import volume:	<500,000 pounds 1998: No reports found 2002: No reports found
List of non-CBI companies/sites*:	Ferro Corporation
Maximum number of industrial sites**:	1 to 99
Maximum number of industrial workers**:	1 to 99
Highest non-CBI maximum concentration*:	Greater than 90%
Non-CBI physical forms*:	Liquid

* There may be other companies/sites, concentrations and physical forms that are claimed confidential.
** Includes all manufacturing and industrial processing and use sites and workers. There may be additional industrial sites and workers that are not included in this estimate since not all submitters were required to report on industrial processing and use and/or there may be at least one use that contains a "Not Readily Obtainable" (NRO) response among the submissions.

Table 1
Industrial Processing and Use Information

Processing Activity	Industrial Sector	Function in Industrial Sector
None reported		

Table 1 Notes:
1. The combined total volume of all CBI and non-CBI industrial processing and use activities reported to IUR in 2006 account for ≤20% of the aggregate national production and/or import volume. [11]
2. The total non-CBI industrial processing and use activities reported to IUR in 2006 account for ≤20% of the aggregate national production and/or import volume.

Table 2
Commercial/Consumer Use Information

Commercial/ Consumer Product Category Description	Highest Maximum Concentration Range	Use in Children's Products
None reported		

[11] USEPA, 2006. Inventory Update Reporting Database. Version 1.03

ATTACHMENT 1:
NON-CBI DATA AND INFORMATION DETAILS

Public Databases Search (CASRN 629-14-1)

Table 1-7. Summary of Public Database Search Findings (CASRN 629-14-1)

Data Source	Descriptive Statement (Standard Drop-in Language)	Yes/ No
Children's Total Exposure to Persistent Pesticides and Other Persistent Organic Pollutants (CTEPP) Study, U.S. EPA; Accessed: 05/19/08. http://www.epa.gov/heasd/ctepp/index.htm	Potential exposure to children from this commonly used household chemical is likely.	NO
Contaminant Exposure and Effects-Terrestrial Vertebrates database (CEE-TV); Accessed: 05/19/08. http://www.pwrc.usgs.gov/contaminants-online/pages/CEETV/CEETVintro.htm	Potential exposure to the general population and the environment, from this chemical found in terrestrial vertebrates in estuarine and coastal habitats is likely.	NO
Current National Recommended Water Quality Criteria, U.S. EPA; Accessed: 05/14/08. http://www.epa.gov/waterscience/criteria/wqcriteria.html	Potential exposure to this chemical that may exceed recommended water quality criteria for general population and the environment is likely.	NO
EPA Environmental Monitoring and Assessment Program (EMAP), Accessed: 05/19/08. http://www.epa.gov/emap/index.html	Potential exposure to the environment from this chemical chosen by EMAP as an ecological indicator for the ecological condition of the aquatic environment.	NO
Everything Added to Food in the United States (EAFUS), U.S. FDA; Accessed: 05/19/08 http://vm.cfsan.fda.gov/~dms/eafus.html	Potential exposure to the general population and children is likely for this chemical that has been identified as a food additive by USFDA.	NO
Indoor Air Articles [Articles published by Brown et al. (1994), Daisey et al. (1994), Immerman and Schaum (1990), Samfield (1992), Shah et al. (1988), Sheldon et al. (1992), and Shields et al. (1996)].	Potential exposure to the general population and children from this chemical in indoor air is likely.	NO
List of Drinking Water Contaminants and their Maximum Contaminant Levels (MCLs); Accessed: 05/20/08. http://www.epa.gov/safewater/contaminants/index.html#mcls see also http://www.access.gpo.gov/nara/cfr/waisidx_02/40cfr141_02.html	Potential exposure to this Safe Drinking Water Act chemical for the general population and children is likely.	NO
National Air Quality System (AQS), U.S. EPA Office of Air and Radiation; Accessed: 05/15/08. http://www.epa.gov/aqspubl1/select.html	Potential exposure to the general population, environment, and children is likely for this National Air Monitoring System criteria air pollutant.	NO

Table 1-7. Summary of Public Database Search Findings (CASRN 629-14-1)		
Data Source	**Descriptive Statement (Standard Drop-in Language)**	**Yes/ No**
National Contaminant Occurrence Database (NCOD), U.S. EPA; Accessed: 05/19/08. http://www.epa.gov/safewater/data/ncod/index.html	Potential exposure to the general population, environment, and children is likely for this contaminant found in drinking water.	NO
National Emission Inventory (NEI) Database, U.S. EPA; Accessed: 05/14/08. http://www.epa.gov/ttn/chief/net/	Potential exposure to the general population, environment, and children is likely from this chemical found in the air as a point, non-point or mobile source.	NO
National Fish Tissue Study, U.S. EPA Office of Science and Technology; Accessed: 05/19/08. http://www.epa.gov/waterscience/fishstudy/overview.htm	Potential exposure for the general population and children is likely to this chemical in fish tissue from lakes and reservoirs of the continental US.	NO
National Health and Nutrition Examination Survey (NHANES), Center for Disease Control; Accessed: 02/12/08. http://www.cdc.gov/nchs/nhanes.htm	Potential exposure to the general population, environment, and children is likely for this chemical included in a study that evaluates how environmental exposures function as risk factors for disease.	NO
National Human Adipose Tissue Survey (NHATS), U.S. EPA Office of Pollution Prevention and Toxics; Accessed: 05/19/08. http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=55204	Potential exposure to the general population and children is likely from this chemical that was found in a study of human adipose tissue.	NO
National Human Exposure Assessment Survey (NHEXAS), U.S. EPA National Exposure Research Laboratory; Accessed: 02/12/08. http://www.epa.gov/heasd/edrb/nhexas.htm	Potential exposure to the general population, environment, and children is likely from this chemical that was included in a community/ regional scale study to determine the association between exposure and daily activities.	NO
National Occupational Exposure Survey (NOES); Accessed: 05/14/2008. http://www.cdc.gov/noes/	Edit paragraph in Appendix B worker section according to findings. If Yes, include # of workers in next cell:	NO
National Sediment Inventory (NSI) Tissue Data, U.S. EPA Office of Water; Accessed: 05/16/08. http://www.epa.gov/waterscience/cs/nsidbase.html	Potential exposure to the general population and the environment is likely from this chemical found in sediments.	NO
National Status and Trends Program (NSTP) National Oceanic and Atmospheric Administration; Accessed: 05/19/08. http://nsandt.noaa.gov/nsandt_overview.htm	Potential exposure to the general population and the environment is likely from this chemical found in aquatic life in estuarine and coastal waters of the US.	NO
National Stream Quality Accounting Network (NASQAN) Surface Water and Sediment Data, U.S.G.S.; Accessed: 05/16/08. http://water.usgs.gov/nasqan/progdocs/wri014255/results/data.htm	Potential exposure to the general population, environment, and children is likely from this chemical found in one of the nation's four largest river systems: the Mississippi, the Columbia, the Colorado or the Rio Grande.	NO
National Water Quality Assessment (NAWQA) Program; Accessed: 02/12/08. http://infotrek.er.usgs.gov/servlet/page?_pageid=543&_dad=portal30&_schema=PORTAL30	Potential exposure to the general population, environment, and children is likely from this chemical found in ground water.	NO

Table 1-7. Summary of Public Database Search Findings (CASRN 629-14-1)		
Data Source	**Descriptive Statement (Standard Drop-in Language)**	**Yes/ No**
Permit Compliance System (PCS), U.S. EPA; Accessed: 02/12/08. http://www.epa.gov/enviro/	Potential exposure to the general population, environment, and children is likely from this chemical monitored at discharge points through NPDES permits.	NO
Section 21 Petition regarding chemicals in air fresheners	Potential exposure to consumers and children is likely from this chemical that is contained in air fresheners.	NO
Source Ranking Database (SRD); Accessed: 05/19/08. http://www.epa.gov/opptintr/exposure/pubs/srd.htm	This chemical was listed in the Source Ranking Database (SRD), which indicates that this chemical was contained in one or more consumer products. There is potential that consumers and children might be exposed to this chemical from consumer products containing this chemical.	YES
STORET, U.S. EPA Office of Water; Accessed: 02/12/08. http://www.epa.gov/storet/	Potential exposure to the general population, environment, and children is likely from this chemical found in ground water or surface water.	YES
Total Exposure Assessment Methodology (TEAM), U.S. EPA; Accessed: 02/12/08.	Potential exposure to the general population, environment, and children is likely from this chemical measured in humans.	NO
Voluntary Children's Chemical Evaluation Program (VCCEP), U.S. EPA; Accessed: 10/17/08 http://www.epa.gov/oppt/vccep/pubs/vcceprsp.pdf	Potential exposure to the general population, environment, and children is likely from this chemical covered under a voluntary USEPA pilot program investigating chemicals with a high likelihood of exposure to children.	NO
Sources with Additional Information		
Hazardous Substances Data Bank (HSDB) http://toxnet.nlm.nih.gov/	Summarize in appropriate section after this table	YES
High Production Volume (HPV) Challenge Submission contains Use and Exposure Information http://cfpub.epa.gov/hpv%2Ds/	Summarize in appropriate section after this table	NO
Extended High Production Volume Program (EHPV), U.S. EPA; Accessed: 12/03/08. http://www.regulations.gov/fdmspublic/component/main?main=DocketDetail&d=EPA-HQ-OPPT-2006-1020	Summarize in appropriate section after this table	NO
National Institute of Health's (NIH) Household Products Database http://hpd.nlm.nih.gov/products.htm	This chemical was listed in the NIH Household Products Database, which indicates that this chemical was contained in one or more household products. There is potential that consumers and children might be exposed to this chemical from consumer products containing this chemical.	NO
Preliminary Assessment Information Rule (PAIR); TSCA Section 8(a)	PAIR information is confidential.	NO

Table 1-7. Summary of Public Database Search Findings (CASRN 629-14-1)		
Data Source	**Descriptive Statement (Standard Drop-in Language)**	**Yes/ No**
Screening Information Data Set (SIDS) documents contains Use and Exposure Information http://www.chem.unep.ch/irptc/sids/oecdsids/sidspub.html	Summarize in appropriate section after this table	NO
Toxic Release Inventory (TRI), U.S. EPA http://www.epa.gov/tri/	Summarize in appropriate section after this table	NO
OSHA PEL: http://www.osha.gov/SLTC/pel/recognition.html	Note: edit statement in Appendix B worker section and if Yes, include PEL in next cell:	NO
ACGIH TLVs and BEIs. 2009.	Note: edit statement in Appendix B worker section and if Yes, include TLV in next cell:	NO
NIOSH Pocket Guide to Chemical Hazards. http://www.cdc.gov/NIOSH/npg/npgdcas.html	Note: edit statement in Appendix B worker section and if Yes, include REL in next cell:	NO

HPV Submission Use and Exposure Information Summary

No HPV submission was found.

EHPV Submission Use and Exposure Information Summary

No EHPV submission was found.

HSDB Use and Exposure Information Summary

Skin, Eye and Respiratory Irritations:
Ethylene glycol diethyl ether vapor is irritating to the eyes and mucous membranes.
[Bingham, E.; Cohrssen, B.; Powell, C.H.; Patty's Toxicology Volumes 1-9 5th ed. John Wiley & Sons. New York, N.Y. (2001)., p. V7 176] **PEER REVIEWED**

Protective Equipment & Clothing:
Protective goggles or face shield; rubber gloves.
[U.S. Coast Guard, Department of Transportation. CHRIS - Hazardous Chemical Data. Manual Two. Washington, DC: U.S. Government Printing Office, Oct., 1978.] **PEER REVIEWED**

Glove manufacturers have recommended gloves of neoprene or nitrile butyl rubber construction for protection against liquid ethylene glycol diethyl ether.
[Sittig, M. Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2002. 4th ed.Vol 1 A-H Norwich, NY: Noyes Publications, 2002., p. 1091] **PEER REVIEWED**

Where the potential exists for exposure to ethylene glycol diethyl ether, use a ...NIOSH approved

supplied-air respirator with a full facepiece operated in the positive pressure mode or with a full facepiece, hood, or helmet in the continuous flow mode, or use a NIOSH approved self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive pressure mode.
[Sittig, M. Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2002. 4th ed.Vol 1 A-H Norwich, NY: Noyes Publications, 2002., p. 1091] **PEER REVIEWED**

Personnel protection: ... Wear appropriate chemical protective gloves, boots and goggles. Wear positive pressure self-contained breathing apparatus when fighting fires involving this material.
[Association of American Railroads; Bureau of Explosives. Emergency Handling of Hazardous Materials in Surface Transportation. Association of American Railroads, Pueblo, CO. 2005, p. 403] **PEER REVIEWED**

Major Uses:
INERT REACTION MEDIUM
PEER REVIEWED

SOLVENT FOR ESTER GUM, SHELLAC AND SOME RESINS AND OILS
[Browning, E. Toxicity and Metabolism of Industrial Solvents. New York: American Elsevier, 1965., p. 612] **PEER REVIEWED**

Organic synthesis (reaction medium), solvent and diluent for detergents
[Lewis, R.J. Sr.; Hawley's Condensed Chemical Dictionary 14th Edition. John Wiley & Sons, Inc. New York, NY 2001., p. 465] **PEER REVIEWED**

Dye solvents in non-grain raising stains
[Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984., p. V21 484] **PEER REVIEWED**

SIDS Document Use and Exposure Information Summary

No SIDS documents were found for this chemical.

TRI Release Data Summary

This chemical is reported under the category “certain glycol ethers” in TRI under the CAS number N230. Refer to Table 2-2.

MSDS Summary Information

A material safety data sheet (MSDS), from Alfa Aesar,[12] provides some information about the safety of the chemical including hazards, accidental release measures, handling and storage, exposure controls/personal protective equipment, toxicological information, disposal and transport information. This MSDS was provided to EPA in a separate PDF file: MSDS 629-14-1.pdf. This MSDS was downloaded from the Internet and serves as an example MSDS only.

[12] Alfa Aesar, 2008. Material Safety Data Sheet for 1,2 - diethoxyethane and CASRN# 629-14-1. Accessed, 8/26/2009. http://www.alfa.com/content/msds/USA/L14283.pdf

EPA has not reviewed the MSDS information nor does it endorse the company, the product, or the use of the MSDS information.

General Equipment: Impervious gloves, safety glasses/tightly sealed goggles.

Respirator: Use a suitable respirator when high concentrations are present.

Health Effects: Irritant to skin and respiratory system; strong irritant with danger of severe eye injury; possible risk of harm to the unborn child.