



Diethylene Glycol

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 03/30/2016

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Substance
Substance name	: Diethylene Glycol
CAS No	: 111-46-6
Formula	: C ₄ H ₁₀ O ₃
Synonyms	: 2,2'-oxybisethanol / 2,2'-dihydroxydiethyl ether / 2,2-dihydroxydiethyl ether / 2,2'-dihydroxyethyl ether / 2,2-dihydroxyethyl ether / 2,2-oxy-bis(ethanol) / 2,2'-oxydiethanol / 2,2-oxydiethanol / 2,2'-oxyethanol / 2-2-hydroxyethoxyethanol / 2-hydroxyethyl ether / 3-oxa-1,5-pentanediol / 3-oxapentamethylene-1,5-diol / 3-oxapentane-1,5-diol / beta,beta'-dihydroxydiethyl ether / beta,beta'-dihydroxydiethyl ether / bis(2-hydroxyethyl)ether / bis(beta-hydroxyethyl)ether / bissolvent APV / brecolane NDG / carbitol (=2,2'-oxy-bis(ethanol) / cellosolve (=2,2'-oxy-bis(ethanol) / deactivator E / deactivator H / DEG / dicol / digenos / diglycol / digol / dihydroxydiethyl ether / dissolvant APV / ethanol, 2,2'-oxybis- / ethylenediglycol / glycol ether / glycolethyl ether / oxapentane-1,5-diol / oxypentane-1,5-diol / TL4N

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	: Chemical raw material Fuel: additive Oil: additive Softener
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1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
4065 Commercial Ave.
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number	: (800) 424-9300; (703) 527 3887 (International) Chemtrec
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral), Category 4	H302
Specific target organ toxicity — Repeated exposure, Category 2	H373

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

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 (kidneys) through prolonged or repeated exposure (oral)
Precautionary statements (GHS-US)	: P260 - Do not breathe mist, spray, vapors P264 - Wash affected areas thoroughly after handling P270 - Do not eat, drink or smoke when using this product P301+P312 - If swallowed: Call doctor/physician or poison center. Rinse Mouth if you feel unwell P314 - Get medical advice/attention if you feel unwell P330 - Rinse mouth P501 - Dispose of contents/container to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

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2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name	Product identifier	%	GHS-US classification
Diethylene Glycol (Main constituent)	(CAS No) 111-46-6	100	Acute Tox. 4 (Oral), H302 STOT RE 2, H373

Full text of hazard classes and H-statements : see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- 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). Respiratory arrest: artificial respiration or oxygen. Vomiting: prevent asphyxia/aspiration pneumonia.
- First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
- First-aid measures after skin contact : Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.
- First-aid measures after eye contact : Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
- First-aid measures after ingestion : Rinse mouth with water. Do not induce vomiting. Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Slight irritation.
- Symptoms/injuries after skin contact : Slight irritation.
- Symptoms/injuries after eye contact : Not irritating.
- Symptoms/injuries after ingestion : Nausea. Vomiting. Abdominal pain. Diarrhoea. AFTER ABSORPTION OF HIGH QUANTITIES: Central nervous system depression. Headache. Dizziness. Drunkenness. Narcosis. Disturbances of consciousness. Blood in vomit. Change in urine output.
- Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Feeling of weakness. Skin rash/inflammation. Decreased renal function. Affection of the renal tissue.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Polyvalent foam. AFFF foam. Alcohol-resistant foam. BC powder. Carbon dioxide. Sand/earth.
- Unsuitable extinguishing media : Container may slop over if solid jet (water/foam) is applied.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : DIRECT FIRE HAZARD. Combustible. INDIRECT FIRE HAZARD. Temperature above flashpoint: higher fire/explosion hazard. Reactions involving a fire hazard: see "Reactivity Hazard".
- Explosion hazard : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".
- Reactivity : Violent to explosive reaction on exposure to temperature rise with (some) acids/bases. Upon combustion: CO and CO₂ are formed. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts with (some) acids: (increased) risk of fire/explosion.

5.3. Advice for firefighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.
- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

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Special protective equipment for fire fighters : Wear positive pressure self-contained breathing apparatus (SCBA). Protective fire fighting clothing (includes fire-fighting helmet, coat, pants, boots and gloves).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Gloves. Protective clothing. See "Material-Handling" to select protective clothing.
Emergency procedures : Mark the danger area. No naked flames. Wash contaminated clothes.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply.
Methods for cleaning up : Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite or powdered limestone. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Use earthed equipment. Keep away from naked flames/heat. Finely divided: spark- and explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

7.2. Conditions for safe storage, including any incompatibilities

Storage temperature : > -8.00 °C
Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.
Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. peroxides. water/moisture.
Storage area : Store in a dry area. Ventilation at floor level. Store at ambient temperature. Keep out of direct sunlight. Provide the tank with earthing. Meet the legal requirements.
Special rules on packaging : SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials : SUITABLE MATERIAL: carbon steel. steel. stainless steel. aluminium. zinc. glass. plastics. MATERIAL TO AVOID: No data available.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Safety glasses.

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Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: chloroprene rubber. chlorosulfonated polyethylene. neoprene. nitrile rubber. PVA. PVC. viton. neoprene/SBR. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: No data available

Hand protection:

Gloves

Eye protection:

Safety glasses

Skin and body protection:

Protective clothing

Respiratory protection:

In case of inadequate ventilation wear respiratory protection



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 106.12 g/mol
Color	: Colorless
Odor	: Odorless
Odor threshold	: No data available
pH	: 5 - 8 (50 %)
pH 50% water solution	: 50 %
Relative evaporation rate (butylacetate=1)	: < 0.001
Relative evaporation rate (ether=1)	: > 3900
Melting point	: -6.5 °C (Test data)
Freezing point	: No data available
Boiling point	: 245 °C (Test data)
Flash point	: No data available
Critical temperature	: 408 °C
Auto-ignition temperature	: 372 °C (1013.25 hPa)
Decomposition temperature	: 287 °C
Flammability (solid, gas)	: No data available
Vapor pressure	: < 0.013 hPa (20 °C)
Vapor pressure at 50 °C	: 0.008 hPa (25 °C)
Critical pressure	: 46598 hPa
Relative vapor density at 20 °C	: 3.7
Specific Gravity	: 1.12
Relative density of saturated gas/air mixture	: 1
Density	: 1120 kg/m ³
Solubility	: Soluble in water. Soluble in ethanol. Soluble in ether. Soluble in acetone. Soluble in chloroform. Soluble in cyclohexanone. Soluble in ethyleneglycol. Water: 100 g/100ml (20 °C, Complete)
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: 33 mm ² /s (20 °C)

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Viscosity, dynamic	: 0.036 Pa.s (20 °C; 30 mPa.s; 25 °C)
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: 1.6 - 10.8 vol % 31 - 972 g/m ³

9.2. Other information

Specific conductivity	: 58.6E6
Saturation concentration	: 0.1 g/m ³
VOC content	: 0 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Hygroscopic. Slightly volatile.

SECTION 10: Stability and reactivity

10.1. Reactivity

Violent to explosive reaction on exposure to temperature rise with (some) acids/bases. Upon combustion: CO and CO₂ are formed. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts with (some) acids: (increased) risk of fire/explosion.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous polymerization will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Keep away from strong acids, strong bases and oxidizing agents.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

Diethylene Glycol (111-46-6)	
LD50 dermal rabbit	11,890.00 mg/kg (Rabbit)
ATE US (oral)	500.00 mg/kg bodyweight
ATE US (dermal)	11,890.00 mg/kg bodyweight

Skin corrosion/irritation : Not classified
pH: 5 - 8 (50 %)

Serious eye damage/irritation : Not classified
pH: 5 - 8 (50 %)

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : Slight irritation.

Symptoms/injuries after skin contact : Slight irritation.

Symptoms/injuries after eye contact : Not irritating.

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Symptoms/injuries after ingestion	: Nausea. Vomiting. Abdominal pain. Diarrhoea. AFTER ABSORPTION OF HIGH QUANTITIES: Central nervous system depression. Headache. Dizziness. Drunkenness. Narcosis. Disturbances of consciousness. Blood in vomit. Change in urine output.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Feeling of weakness. Skin rash/inflammation. Decreased renal function. Affection of the renal tissue.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air	: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006). TA-Luft Klasse 5.2.5.
Ecology - water	: Ground water pollutant. Not harmful to fishes (LC50(96h) >1000 mg/l). Not harmful to invertebrates (Daphnia) (EC50 > 1000 mg/l). Not harmful to algae (EC50 >1000 mg/l). Inhibition of activated sludge.

12.2. Persistence and degradability

Diethylene Glycol (111-46-6)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	0.02 g O ₂ /g substance
Chemical oxygen demand (COD)	1.51 g O ₂ /g substance
ThOD	1.51 g O ₂ /g substance
BOD (% of ThOD)	0.02

12.3. Bioaccumulative potential

Diethylene Glycol (111-46-6)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Diethylene Glycol (111-46-6)	
Surface tension	0.05 N/m
Log Koc	Koc,SRC PCKOCWIN v1.66; 1; Calculated value; log Koc; SRC PCKOCWIN v1.66; 0; Calculated value

12.5. Other adverse effects

Effect on ozone layer	: No known effect on the ozone layer
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations	: Do not discharge into drains or the environment. Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations.
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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not applicable

TDG

Refer to current TDG Canada for further Canadian regulations

Not applicable

Transport by sea

Not applicable

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Air transport

Not applicable

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

15.2. International regulations

CANADA

Diethylene Glycol (111-46-6)

WHMIS Classification

This SDS has been prepared according to the criteria of the Hazardous Products Regulations (HPR) (WHMIS 2015) and the SDS contains all of the information required by the HPR. Applicable GHS information is listed in section 2.2 of this SDS.

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

Diethylene Glycol (111-46-6)

State or local regulations

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

SECTION 16: Other information

Revision date : 03/30/2016

Full text of H-statements:

H302	Harmful if swallowed
H373	May cause damage to organs through prolonged or repeated exposure

NFPA health hazard

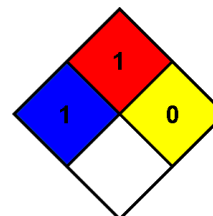
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

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



SDS GHS US (GHS HazCom 2012) OWI

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