Diethylene Glycol

SECTION 1. IDENTIFICATION

Product Identifier	Diethylene Glycol
Other Means of Identification	2,2'-Oxybisethanol, Bis(2-hydroxyethyl) ether, Dihydroxydiethyl ether
Product Code(s)	DI3610
Product Family	Organic Solvent
Recommended Use	Laboratory and industrial use.
Restrictions on Use	None known.
Supplier Identifier	Alphachem Limited, 2485 Milltower Court, Mississauga, Ontario, L5N 5Z6, (905) 821-2995
Emergency Phone No.	CANUTEC CANADA, 613-996-6666, 24 Hours
SDS No.	0694

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

Classification

Acute toxicity (Oral) - Category 4; Specific target organ toxicity (single exposure) - Category 2

Label Elements

Signal Word:
Warning

Hazard Statement(s):
Harmful if swallowed.
May cause damage to organs.

Precautionary Statement(s):
Wash hands and skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Do not breathe dust/fume/gas/mist/vapours/spray.
Response:
If SWALLOWED: Call a POISON CENTRE/doctor/ if you feel unwell.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Disposal:
Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance:

Chemical Name	CAS No.	%	Other Identifiers
Diethylene glycol	111-46-6	> 99	2,2'-Oxybisethanol, Bis(2-hydroxyethyl) ether, Dihydroxydiethyl ether

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. If experiencing respiratory symptoms (e.g. coughing, shortness of breath, wheezing), call a Poison Centre or doctor.

Skin Contact

Rinse with lukewarm, gently flowing water for 5 minutes. If skin irritation occurs, get medical advice or attention.

Eye Contact

Rinse the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes, while holding the eyelid(s) open. If eye irritation persists, get medical advice or attention.

Ingestion

Rinse mouth with water. Do not induce vomiting. If vomiting occurs, have person lie on side in the recovery position. Rinse mouth with water again. Immediately call a Poison Centre or doctor.

First-aid Comments

Some of the first-aid procedures recommended here require advanced first-aid training. Get medical advice or attention if you feel unwell or are concerned.

Most Important Symptoms and Effects, Acute and Delayed

None known.

Immediate Medical Attention and Special Treatment

Special Instructions

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog. Use water to keep non-leaking, fire-exposed containers cool.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Heating increases the release of toxic vapour. Closed containers may rupture violently when heated releasing contents.
In a fire, the following hazardous materials may be generated: very toxic, flammable formaldehyde; very toxic carbon monoxide, carbon dioxide.

Special Protective Equipment and Precautions for Fire-fighters

Evacuate area. Fight fire from a safe distance or a protected location. Approach fire from upwind to avoid hazardous vapours or gases. Stop leak before attempting to put out the fire. Product could form an explosive mixture and reignite.

If the leak cannot be stopped, let the fire burn itself out. Knock down vapours or gases with water fog or fine water spray. Use water spray to dilute spills to non-flammable mixtures. Use water spray to flush spills away from ignition sources. For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles. Dike and recover contaminated water for appropriate disposal.
Chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Remove or isolate incompatible materials as well as other hazardous materials. Eliminate all ignition sources if safe to do so.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Small spills or leaks: contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal.
Large spills or leaks: remove or recover liquid using pumps or vacuum equipment.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Wear personal protective equipment to avoid direct contact with this chemical. Do not breathe in this product. Only use where there is adequate ventilation. Prevent uncontrolled release of product. Do not weld, cut or perform hot work on empty container until all traces of product have been removed. Prevent accidental contact with incompatible chemicals. Label container with date received, date opened and disposal date. Keep containers tightly closed when not in use or empty.

Conditions for Safe Storage

Store in an area that is: cool, out of direct sunlight and away from heat and ignition sources, separate from incompatible materials (see Section 10: Stability and Reactivity). Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity). Store in the original, labelled, shipping container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	**TWA**	**STEL**	**TWA**	**Ceiling**	**8-hr TWA**	**TWA**
Diethylene glycol	Not established		Not established		10 mg/m3	

Appropriate Engineering Controls

The hazard potential of this product is relatively low. General ventilation is usually adequate. Use local exhaust ventilation and enclosure, if necessary, to control amount in the air.

Individual Protection Measures

Eye/Face Protection

Not required but it is good practice to wear safety glasses or chemical safety goggles.

Skin Protection

Not required, if used as directed. In case of an emergency (e.g. an uncontrolled release): wear chemical protective clothing e.g. gloves, aprons, boots.
Suitable materials are: butyl rubber, neoprene rubber, nitrile rubber, Viton®, Viton®/butyl rubber, Barrier® (PE/PA/PE), Silver Shield/4H® (PE/EVAL/PE).

Respiratory Protection

No specific guidelines are available. Contact chemical manufacturer, supplier or appropriate government agencies for advice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Clear colourless viscous liquid. Absorbs moisture from the air.
Odour	Odourless
Odour Threshold	Not available
pH	7 - 8 (estimated)
Melting Point/Freezing Point	-10.5 ºC (13.1 ºF) (melting); -10.5 ºC (13.1 ºF) (freezing)
Initial Boiling Point/Range	246 ºC (475 ºF)
Flash Point	124 ºC (255 ºF) (closed cup)
Evaporation Rate	0.001 (n-butyl acetate = 1)
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	10.8% (upper); 1.6% (lower)
Vapour Pressure	0.00076 kPa (0.00570 mm Hg) at 25 ºC
Vapour Density (air = 1)	3.7 (calculated)
Relative Density (water = 1)	1.12 at 20 ºC
Solubility	Soluble in all proportions in water; Highly soluble in alcohols (e.g. ethanol).
Partition Coefficient, n-Octanol/Water (Log Kow)	-1.47 (estimated)
Auto-ignition Temperature	224 ºC (435 ºF)
Decomposition Temperature	Not available
Viscosity	32.20 mm2/s at 20 ºC (calculated) (kinematic); 36.0 mPa.s at 20 ºC (dynamic)

Other Information

Physical State	Liquid

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources. High temperatures. Temperatures above 124.0 ºC (255.2 ºF)

Incompatible Materials

Strong oxidizing agents (e.g. perchloric acid), metals (e.g. aluminum), epoxides (e.g. ethylene oxide), aldehydes (e.g. acetaldehyde), halogenated compounds (e.g. trichloroethylene), halogens (e.g. chlorine), ketones (e.g. acetone), strong acids (e.g. hydrochloric acid).

Hazardous Decomposition Products

Peroxides.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Diethylene glycol	> 4600 mg/m3 (rat) (4-hour exposure)	15650 mg/kg (female rat)	13300 mg/kg

Skin Corrosion/Irritation

Human experience and animal tests show no or very mild irritation.

Serious Eye Damage/Irritation

Animal tests show very mild irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

No information was located.

Ingestion

Toxic, can cause death Causes depression of the central nervous system. Symptoms may include headache, nausea, dizziness, drowsiness and confusion. Harmful effects on the kidneys.

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

No information was located.

Respiratory and/or Skin Sensitization

No information was located for respiratory sensitization. Not a skin sensitizer.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Diethylene glycol	Not evaluated	Not Listed	Not Listed	

Reproductive Toxicity

Development of Offspring

Conclusions cannot be drawn from the limited studies available.

Sexual Function and Fertility

Conclusions cannot be drawn from the limited studies available.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

Conclusions cannot be drawn from the limited studies available.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Bury in a licensed landfill or burn in an approved incinerator according to federal, provincial/state, and local regulations.

SECTION 14. TRANSPORT INFORMATION

Not regulated under Canadian TDG regulations. Not regulated under US DOT Regulations.

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

Listed on the DSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

Listed on the TSCA Inventory.

SECTION 16. OTHER INFORMATION

NFPA Rating	**Health - 1 Flammability - 1 Instability - 0**
SDS Prepared By	Alphachem Limited
Phone No.	(905)-821-2995
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References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).
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