

Diethylene glycol

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SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Diethylene glycol**

Other means of identification : Not available.

Recommended use of the chemical and restrictions on use

: Industrial solvent.
Use pattern: Professional Use Only
Restriction on use: None known

Chemical family : Glycols.

Name, address, and telephone number
of the supplier:

Comet Chemical Company Ltd.

3463 Thomas Street
Innisfill, ON, Canada
L9S 3W4

Supplier's Telephone # : (705) 436-5580

24 Hr. Emergency Tel # : GFL Environmental - 1-888-772-2543

Name, address, and telephone number of
the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Odorless.

Most important hazards: Harmful if swallowed. May cause damage to organs if swallowed. Occupational exposure to the substance or mixture may cause adverse effects.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Acute toxicity, oral - Category 4

Specific target organ toxicity, single exposure - Category 2 (kidneys)

Label elements

Hazard pictogram(s)



Signal Word

Warning!

Hazard statement(s)

Harmful if swallowed.

May cause damage to the kidneys if swallowed.

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Wash thoroughly after handling.
Do not breathe mist or vapor.
Do not eat, drink or smoke when using this product.

If exposed or concerned: Call a POISON CENTER or doctor/physician.
IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
Rinse mouth.

Store locked up.

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

Other hazards

Other hazards which do not result in classification:
May cause eye, skin and respiratory tract irritation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Diethylene glycol	2-Hydroxyethyl ether	111-46-6	100.00

SECTION 4. FIRST-AID MEASURES**Description of first aid measures**

- Ingestion* : Call a physician or poison control centre immediately. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Rinse mouth.
- Inhalation* : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. Get medical attention if symptoms persist.
- Skin contact* : Immediately flush with plenty of water, while removing contaminated clothing. If irritation persists, seek prompt medical attention. Launder clothing before reuse.
- Eye contact* : Immediately flush eye(s) with plenty of water. After initial flushing, remove any contact lenses if worn, and continue flushing for at least 5 to 10 minutes. If irritation persists, seek prompt medical attention.

Most important symptoms and effects, both acute and delayed

- : Harmful if swallowed. May cause damage to the kidneys if swallowed. Direct eye contact may cause slight or mild, transient irritation. Direct skin contact may cause slight or mild, transient irritation.

Indication of any immediate medical attention and special treatment needed

- : Immediate medical attention is required. Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES**Extinguishing media***Suitable extinguishing media*

- : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Burning produces obnoxious and toxic fumes.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

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Hazardous combustion products

: Carbon oxides, formaldehyde and other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Do not enter without wearing specialized protective equipment suitable for the situation. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. A full-body encapsulating chemical protective suit with positive pressure self-contained breathing apparatus (NIOSH approved or equivalent) may be necessary.

Special fire-fighting procedures

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

: Ventilate the area. Stop spill or leak at source if safely possible. Dike for water control. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13).

Special spill response procedures

: In Canada: For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC).
US CERCLA Reportable quantity (RQ): See section 15.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Wear protective gloves/clothing and eye/face protection. Use with adequate ventilation. Do not ingest. Do not breathe mist or vapor. Avoid contact with eyes, skin and clothing. Wash with soap and water after handling. Keep away from extreme heat and flame. Keep away from acids and other incompatibles. Keep containers tightly closed when not in use.

Conditions for safe storage : Store in a cool, dry, well-ventilated area. Store away from areas of excessive heat, open flames, sparks, and other possible sources of ignition. Keep away from incompatibles. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks.

Incompatible materials : Alkalies; Strong oxidizing agents; Strong acids; Halogens.

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SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Diethylene glycol	10 mg/m ³ (AIHA WEEL)	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

: Use sufficient mechanical ventilation to maintain exposures below the TLV. Use local exhaust if mist or spray is generated.

Respiratory protection

: Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. Seek advice from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection

: Wear protective gloves. Advice should be sought from glove suppliers.

Eye / face protection

: Chemical goggles are recommended when there is a potential for splashing.

Other protective equipment

: Emergency showers and eyewash facilities should be nearby. Wear a chemically resistant apron and long sleeves when dispensing, to prevent skin contact.

General hygiene considerations

: Do not breathe mist or vapor. Avoid contact with eyes, skin and clothing. When using do not eat or drink. When using do not smoke. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	: Liquid
Colour	: Clear colourless liquid.
Odour	: odourless
Odour threshold	: N/Av
pH	: 7-8
Melting Point/Freezing point	: - 6.5°C (20.3°F)
Initial boiling point and boiling range	: 246°C (475°F)
Flash point	: 124°C (255.2°F)
Flashpoint (Method)	: closed cup
Evaporation rate (BuAe = 1)	: 0.001
Flammability	: Not applicable.
Lower explosion or flammability limit (% by vol.)	: 1.6%
Upper explosion or flammability limit (% by vol.)	: 10.8%
Oxidizing properties	: None known.
Explosive properties	: Not explosive
Vapour pressure	: <0.01 mmHg
Relative vapour density	: 3.7(Air = 1)

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Relative density / Specific gravity

: 1.18

Solubility in water : Complete

Other solubility(ies) : Soluble in most organic solvents.

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: -1.47

Auto-ignition temperature : 224°C (435.2°F)

Decomposition temperature : Not available.

Viscosity : 32.20 mm²/s

Particle characteristics :

Volatiles (% by weight) : No information available.

Volatile organic Compounds (VOC's)

: N/Av

Absolute pressure of container

: N/Av

Flame projection length : N/Av

Other physical/chemical comments

: None reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions

: No dangerous reaction known under conditions of normal use.

Conditions to avoid : Avoid excessive heat, sparks and open flame. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.

Incompatible materials : Incompatible materials (see Section 7).

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: YES

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: If mists are inhaled, may cause tearing, general anesthesia, headache, coughing, respiratory stimulation, nausea, vomiting, pulmonary, kidney and liver damage.

Sign and symptoms ingestion

: Harmful if swallowed. May cause central nervous system effects.

Sign and symptoms skin

: May cause mild skin irritation. Product may be absorbed and cause symptoms similar to those listed for ingestion.

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Sign and symptoms eyes : May cause mild eye irritation. Symptoms may include inflammation and tearing.

Potential Chronic Health Effects

: May cause central nervous system (CNS) depression, liver damage and kidney damage.

Mutagenicity

: Not expected to be mutagenic.

Carcinogenicity

: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: This product is not expected to cause reproductive or developmental effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

May cause damage to the kidneys if swallowed.

Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin or eye disorders, and impaired liver or kidney functions.

Synergistic materials

: Not available.

Toxicological data

: See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Diethylene glycol	> 4.6 mg/L (aerosol) (No mortality)	19 600 mg/kg (rat) The estimated human lethal dose is: 500 - 5000 mg/kg	12 500 mg/kg

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS #</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Diethylene glycol	111-46-6	77 900 mg/L (Fathead minnow)	7694 mg/L (30 days) (QSAR)	None.

<u>Ingredients</u>	<u>CAS #</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Diethylene glycol	111-46-6	> 100 mg/L (Daphnia magna)	7500 - 15 000 mg/L (Read-across)	None.

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Ingredients	CAS #	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Diethylene glycol	111-46-6	9362 mg/L/96hr (Green algae) (QSAR)	> 100 mg/L/72hr (Read-across)	None.

Persistence and degradability

: Readily biodegradable.

Bioaccumulation potential

: No data is available on the product itself.

Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
Diethylene glycol (CAS 111-46-6)	- 1.47 (estimated)	3 (estimated)

Mobility in soil

: No data is available on the product itself.

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle waste according to recommendations in Section 7.



Methods of Disposal

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

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None	Not regulated.	Not regulated	none	
49CFR/DOT Additional information	If the quantity of Ethylene glycol is greater than 5000 pounds per container, the following DOT shipping description applies: RQ UN3082, Environmentally hazardous substances, liquid, n.o.s. (Ethylene glycol), 9, III.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				

Special precautions for user

: None known or reported by the manufacturer.

Environmental hazards

: This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.



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SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity (RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de Minimis Concentration
Diethylene glycol	111-46-6	Yes	N/Ap	N/Av	No	No

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Acute toxicity (Oral); Specific target organ toxicity, single exposure

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Diethylene glycol	111-46-6	No	N/Ap	No	No	Yes	No	Yes	Yes

Canadian Information:

All ingredients are present on the DSL.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Diethylene glycol	111-46-6	203-872-2	Present	Present	(2)-415; (2)-2979	KE-27694	Present	HSR002709

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CNS: Central Nervous System
- COC: Cleveland Open Cup
- CSA: Canadian Standards Association
- DOT: Department of Transportation
- EPA: Environmental Protection Agency
- IARC: International Agency for Research on Cancer
- LC: Lethal Concentration
- LD: Lethal Dose

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N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TLV: Threshold Limit Values
TWA: Time Weighted Average

References :

1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices
2. ECHA - European Chemical Agency
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases
4. Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists
6. California Proposition 65 List
7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal

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Revision Information

: Updated SDS to the comply with new 2023 WHMIS format

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Comet Chemical Company Ltd. 3463 Thomas Street Innisfill, ON L9S 3W4 Information (M-F 8:00-5:00): 705-436-5580 www.cometchemical.com</p>	
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.); (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	

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