

Ethylene Glycol

SDS Preparation Date (mm/dd/yyyy): 08/20/2015

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SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Ethylene Glycol**

Product Code(s) : Not available.

Recommended use of the chemical and restrictions on use

: Antifreeze; Plasticiser; 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 # : TERRRAPURE ENVIRONMENTAL : 800-567-7455

Name, address, and telephone number of
the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Odorless.

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

Reproductive toxicity- Category 2

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

Specific Target Organ Toxicity, Single Exposure - Category 3 (cns)

Label elements

Hazard pictogram(s)



Signal Word

Warning!

Hazard statement(s)

Harmful if swallowed.

Suspected of damaging the unborn child.

May cause damage to the kidneys if swallowed.

May cause drowsiness or dizziness.

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Precautionary statement(s)

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Do not breathe mist or vapor.
Wear protective gloves/clothing and eye/face protection.
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.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

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</u> |
|----------------------|---|--------------|----------------------|
| Ethylene glycol | 1,2-Ethanediol 1,2-Dihydroxyethane EG | 107-21-1 | 100.00 |

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Call a physician or poison control centre immediately. Induce vomiting ONLY under the direct supervision of qualified medical personnel or a poison control centre. Never give anything by mouth to an unconscious person.
- Inhalation* : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. Get medical attention.
- 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. May cause drowsiness or dizziness. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. May cause slight eye and skin irritation. Symptoms include: Redness, swelling, itching and dryness. Suspected of damaging the unborn child.

Indication of any immediate medical attention and special treatment needed

- : Immediate medical attention is required. May be harmful or fatal if swallowed. Use of ethanol may be helpful to counter the toxic effects of ethylene glycol by interfering with the absorption rate in the stomach and intestine. Onset of symptoms may be delayed for 18 to 24 hours after ingestion. Symptoms may be delayed.



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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.

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.

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

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): Ethylene glycol (5000 lbs / 2270 kg).

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling



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- : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. This material is a harmful liquid. Wear protective gloves/clothing and eye/face protection. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment. 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. Use caution when opening cap. Keep containers tightly closed when not in use. Empty containers retain residue (liquid and/or vapour) and can be dangerous.
- 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.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

| <u>Chemical Name</u> | <u>ACGIH TLV</u> | | <u>OSHA PEL</u> | |
|----------------------|--|-------------|------------------------------|-------------|
| | <u>TWA</u> | <u>STEL</u> | <u>PEL</u> | <u>STEL</u> |
| Ethylene glycol | 100 mg/m ³ (aerosol) (Ceiling) | N/Av | 50 ppm (final rule limit) | 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 impervious gloves, such as butyl rubber. 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

- Appearance** : Clear, colourless liquid.
- Odour** : Little or no odour.
- Odour threshold** : N/Av
- pH** : N/Av
- Melting/Freezing point** : - 13°C (8.6°F)
- Initial boiling point and boiling range** : 198°C (388°F)



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Flash point : 111°C (232°F)
Flashpoint (Method) : closed cup
Evaporation rate (BuAe = 1) : N/Av
Flammability (solid, gas) : Not applicable.
Lower flammable limit (% by vol.) : 3.2%
Upper flammable limit (% by vol.) : 15.0%
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapour pressure : 0.05
Vapour density : 2.1
Relative density / Specific gravity : 1.12
Solubility in water : Complete
Other solubility(ies) : Soluble in most organic solvents.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution : -1.36
Auto-ignition temperature : 398°C (748°F)
Decomposition temperature : Not available.
Viscosity : 21 cp @ 20°C (68°F)
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 : Molecular Weight: :: 62.07
Molecular formula: C2-H6-O2

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 : Alkalies ;Strong oxidizing agents;Strong acids.
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



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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 or fatal if swallowed. Human poison by ingestion (lethal dose of Ethylene glycol for humans reported to be 100 mL). Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Initially, the central nervous system is stimulated, followed by depression. Could cause cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood). May potentially result in lethal kidney damage. Could also cause convulsions, coma, respiratory arrest and death.

Sign and symptoms skin

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

Sign and symptoms eyes

- : May cause mild eye irritation. Symptoms may include inflammation and tearing.

Potential Chronic Health Effects

- : Prolonged or repeated ingestion may cause bladder or kidney stones.

Mutagenicity

- : Not expected to be mutagenic.

Carcinogenicity

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

Reproductive effects & Teratogenicity

- : 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). Classification: Reproductive toxicity -Category 2 Suspected of damaging the unborn child.

Sensitization to material

- : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

- : Eyes, skin, respiratory system, central nervous system, liver and kidneys. 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). Classification: Specific target organ toxicity, single exposure-Category 2 Specific Target Organ Toxicity, Single Exposure - Category 3 (cns) May cause damage to the kidneys if swallowed. May cause drowsiness or dizziness.

Not classified as a 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>LD₅₀</u> | |
|----------------------|---------------------------------|---|-------------------------|
| | <u>inh, rat</u> | <u>(Oral, rat)</u> | <u>(Rabbit, dermal)</u> |
| Ethylene glycol | 4300 ppm (10.92 mg/L) (aerosol) | 4000 mg/kg (rat) The estimated human lethal dose is: 1110 - 1665 mg/kg | 9530 mg/kg |

Other important toxicological hazards

- : CNS depression may result from extreme exposures.



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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

| <u>Ingredients</u> | CAS No | Toxicity to Fish | | |
|--------------------|----------|-----------------------------|---------------|----------|
| | | LC50 / 96h | NOEC / 21 day | M Factor |
| Ethylene glycol | 107-21-1 | 22 810 mg/L (Rainbow trout) | N/Av | None. |

| <u>Ingredients</u> | CAS No | Toxicity to Daphnia | | |
|--------------------|----------|-----------------------------|--------------------|----------|
| | | EC50 / 48h | NOEC / 21 day | M Factor |
| Ethylene glycol | 107-21-1 | 49 000 mg/L (Daphnia magna) | 7500 - 15 000 mg/L | None. |

| <u>Ingredients</u> | CAS No | Toxicity to Algae | | |
|--------------------|----------|---------------------------------------|-------------------|----------|
| | | EC50 / 96h or 72h | NOEC / 96h or 72h | M Factor |
| Ethylene glycol | 107-21-1 | 6500 - 13 000 mg/L/96hr (Green algae) | 10 000 mg/L/96hr | None. |

Persistence and degradability

: Ethylene glycol is considered to be readily biodegradable.

Bioaccumulation potential

: No data is available on the product itself.

| <u>Components</u> | <u>Partition coefficient n-octanol/ater (log Kow)</u> | <u>Bioconcentration factor (BCF)</u> |
|--------------------------------|---|--------------------------------------|
| Ethylene glycol (CAS 107-21-1) | - 1.36 | 10 |

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. Contact your local, state, provincial or federal environmental agency for specific rules.

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. TRANSPORTATION INFORMATION



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| 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 : See ECOLOGICAL INFORMATION, Section 12.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
: Not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

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

| Ingredients | 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 minimus Concentration |
| Ethylene glycol | 107-21-1 | Yes | 5000 lb/ 2270 kg | None. | Yes | 1% |

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard; Chronic health hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for 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:

| Ingredients | CAS # | California Proposition 65 | | State "Right to Know" Lists | | | | | |
|-----------------|----------|---------------------------|------------------|-----------------------------|-----|-----|-----|-----|-----|
| | | Listed | Type of Toxicity | CA | MA | MN | NJ | PA | RI |
| Ethylene glycol | 107-21-1 | No | N/Ap | Yes | Yes | Yes | Yes | Yes | Yes |

Canadian Information:

WHMIS Classification: Refer to Section 2 for a WHMIS Classification for this product.
All ingredients are present on the DSL.



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International Information:

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

| <u>Ingredients</u> | <u>CAS #</u> | <u>European EINECS</u> | <u>Australia AICS</u> | <u>Philippines PICCS</u> | <u>Japan ENCS</u> | <u>Korea KECI/KECL</u> | <u>China IECSC</u> | <u>NewZealand IOC</u> |
|--------------------|--------------|------------------------|-----------------------|--------------------------|-------------------|------------------------|--------------------|-----------------------|
| Ethylene glycol | 107-21-1 | 203-473-3 | Present | Present | (2)-230 | KE-13169 | Present | HSR001534 |

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CNS: Central Nervous System
COC: Cleveland Open Cup
CSA: Canadian Standards Association
DOT: Department of Transportation
EPA: Environmental Protection Agency
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

: Canadian Centre for Occupational Health and Safety, CCHInfoWeb Databases, 2015 (Chempendium, RTECs, HSDB, INCHEM).
European Chemicals Agency, Classification Legislation, 2015
Material Safety Data Sheet from manufacturer.
OECD- The Global Portal to Information on Chemical Substances - eChemPortal, 2015

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.



Comet Chemical Company Ltd.
 3463 Thomas Street
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 Canada

Information (M-F 8:00-5:00): 705-436-5580

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HMIS Rating : * - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
Health: *2 *Flammability:* 1 *Reactivity:* 0

NFPA Rating : 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
Health: 2 *Flammability:* 1 *Instability:* 0 *Special Hazards:* None

| | |
|--|--|
| <p>Prepared for: 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> |  |
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