

Section 1. Product and Company Identification

Product Name Ethylene Glycol
CAS Number 107-21-1

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Section 2. Hazards Identification

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4): H302

Specific target organ toxicity - repeated exposure, Oral (Category 2), Kidney: H373

GHS Label Elements

Pictograms:



Signal word: WARNING

Hazard and precautionary statements

Hazard statements

H302: Harmful if swallowed.

H373: May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary statements

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P264: Wash skin thoroughly after handling.

P270: Do not eat, drink, or smoke when using this product.

P301 + P312 + P330: If swallowed, call a poison center or doctor/physician if you feel unwell.

Rinse mouth.

P314: Get medical advice/attention if you feel unwell.

P501: Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC) or not covered by GHS: None



Section 3. Composition / Information on Ingredients

Common Name Ethylene Glycol
Synonym(s) 1,2-Ethanediol
Formula C₂H₆O₂
CAS Number 107-21-1

COMPONENT	CAS NUMBER	CONCENTRATION
Ethylene Glycol	107-21-1	≤ 100%

Section 4. First Aid Measures

Description of first aid measures

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

Inhalation: Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Skin contact: Wash off with soap and plenty of water. Consult a physician.

Eye contact: Flush eyes with water as a precaution.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed: The most important known symptoms and effects are described in the labelling and/or in section 11.

Indication of any immediate medical attention and special treatment needed: No data available

Section 5. Firefighting Measures

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

Special hazards arising from the substance or mixture: Carbon oxides

Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Further information: No data available

Section 6. Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.



Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections: For disposal see section 13.

Section 7. Handling and Storage

Precautions for safe handling: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. For precautions see section 2.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Hygroscopic.

Storage class (TRGS 510): Combustible liquids

Section 8. Exposure Controls / Personal Protection

Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
	Remarks	See Appendix D - Substances with No Established RELs		
Ethylene glycol	107-21-1	C	100.000000 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
		Eye & Upper Respiratory Tract irritation Not classifiable as a human carcinogen		
		C	100.000000 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Not classifiable as a human carcinogen		
		C	100 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Not classifiable as a human carcinogen		

Derived No Effect Level (DNEL)

Application Area	Exposure routes	Health effect	Value
Workers	Inhalation	Long-term local effects	35 mg/m ³
Workers	Skin contact	Long-term systemic effects	106mg/kg BW/d
Consumers	Inhalation	Long-term local effects	7 mg/m ³
Consumers	Skin contact	Long-term systemic effects	53mg/kg BW/d

Predicted No Effect Concentration (PNEC)

Compartment	Value
Soil	1.53 mg/kg
Marine water	1 mg/l
Fresh water	10 mg/l
Marine sediment	3.7 mg/kg
Fresh water sediment	37 mg/kg
Sewage treatment plant	199.5 mg/l
Aquatic intermittent release	10 mg/l

Exposure controls

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands

Body Protection: Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance: Colorless liquid

Odor: No data available

Odor Threshold: No data available

pH: No data available

Melting point/freezing point: -13°C (9°F)

Initial boiling point and boiling range: 196 - 198°C (385 - 388°F)

Flash point (closed cup): 111°C (232°F)

Evaporation rate: 1

Flammability (solid, gas): No data available

Upper/lower flammability or explosive limits

Upper explosion limit: 15.3% (V)

Lower explosion limit: 3.2% (V)

Vapor pressure: 0.11 hPa (0.08 mmHg) at 20°C (68°F), 0.13 hPa (0.10 mmHg) at 20°C (68°F)

Vapor density: 2.14 (Air = 1.0)

Relative density: 1.113 g/mL at 25°C (77°F)

Water solubility: completely miscible/soluble

Partition coefficient (n-octanol/water): log Pow: -1.36

Auto-ignition temperature: 400°C (752°F) Auto-flammability

Decomposition temperature: No data available

Viscosity: No data available

Explosive properties: No data available

Oxidizing properties: No data available

Other safety information

Relative vapor density: 2.14 - (Air = 1.0)

Section 10. Stability and Reactivity

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: No data available

Conditions to avoid: No data available

Incompatible materials: Strong acids, Strong oxidizing agents, Strong bases, Aldehydes, Aluminum

Hazardous decomposition products: In the event of fire: see section 5

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat: 4,700 mg/kg

Inhalation: No data available

LD50 Dermal - Rabbit: 10,626 mg/kg

Skin corrosion/irritation

Skin: Rabbit

Result: No skin irritation

Serious eye damage/eye irritation

Eyes: Rabbit

Result: Mild eye irritation - 24 h

Respiratory or skin sensitization: No data available

Germ cell mutagenicity: No data available

Carcinogenicity: This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No components of this product, present at levels greater than or equal to 0.1%, is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No components of this product, present at levels greater than or equal to 0.1%, is identified as a known or anticipated carcinogen by NTP.

OSHA: No components of this product, present at levels greater than or equal to 0.1%, is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Laboratory experiments have shown teratogenic effects. Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Specific target organ toxicity - single exposure: No data available

Specific target organ toxicity - repeated exposure: Oral - May cause damage to organs through prolonged or repeated exposure. - Kidney

Aspiration hazard: No data available

Additional Information

RTECS: KW2975000

When ingested early symptoms mimic alcohol inebriation and are followed by nausea, vomiting, abdominal pain, weakness, muscle tenderness, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema, hypocalcemic tetany, and severe metabolic acidosis. Without treatment, death may occur in 8 to 24 hours. Victims who survive the initial toxicity period usually develop renal failure along with brain and liver damage. Exposure to and/or consumption of alcohol may increase toxic effects.

Central nervous system - Irregularities - Based on Human Evidence



Section 12. Ecological Information

Toxicity

Toxicity to fish

LC50: Oncorhynchus mykiss (rainbow trout) - 18,500 mg/l (96 h)

LC50: Leuciscus idus (Golden orfe) - > 10,000 mg/l (48 h)

NOEC: Pimephales promelas (fathead minnow) - 32,000 mg/l (7 d)

NOEC: Pimephales promelas (fathead minnow) - 39,140 mg/l (96 h)

Toxicity to daphnia and other aquatic invertebrates

EC50: Daphnia magna (Water flea) - 74,000 mg/l (24 h)

NOEC: Daphnia (water flea) - 24,000 mg/l (48 h)

LC50: Daphnia magna (Water flea) - 41,000 mg/l (48 h)

Persistence and degradability: No data available

Ratio BOD/ThBOD: 0.78%

Bio accumulative potential: Does not bio accumulate.

Bioaccumulation

Other fish: 61 d - 50 mg/l

Bio concentration factor (BCF): 0.60

Mobility in soil: No data available

Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: No data available

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

DOT (US)

UN number: 3082

Class: 9

Packing group: III

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol)

Reportable Quantity (RQ): 5000 lbs

Poison Inhalation Hazard: No



IMDG: Not dangerous goods

IATA: Not dangerous goods

Section 15. Regulatory Information

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: The following components are subject to reporting levels established by SARA Title III, Section 313: Ethylene glycol, CAS-No. 107-21-1

SARA 311/312 Hazards: Acute Health Hazard, Chronic Health Hazard

Massachusetts Right to Know Components

Ethylene glycol (CAS-No. 107-21-1)

Pennsylvania Right to Know Components

Ethylene glycol (CAS-No. 107-21-1)

New Jersey Right to Know Components

Ethylene glycol (CAS-No. 107-21-1)

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

HMIS Rating

Health: 1*

Flammability: 1

Reactivity: 0

NFPA Rating

Health: 1

Flammability: 1

Reactivity: 0

Section 16. Other Information

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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