



Material Safety Data Sheet

Ethylene glycol

MSDS# 09400

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethylene glycol

Catalog Numbers: AC146750000, AC295530000, AC295530010, AC295530025, AC295530051, AC410010000, AC410010000, AC410010010, AC410010040, AC410010200, 14675-0010, 14675-0025, 14675-0250, BP230-1, BP230-4, E177-20, E177-4, E178-1, E178-200, E178-200LC, E178-4, E178-500, E178J-4, E184-4, S800052, ZZE1785C15

Synonyms: 1,2-Dihydroxyethane; 1,2-Ethenediol; Ethylene alcohol; Glycol.

Company Identification: Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 201-796-7100

Emergency Number US: 201-796-7100

CHEMTREC Phone Number, US: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#: 107-21-1

Chemical Name: Ethylene glycol

%: >95

EINECS#: 203-473-3

Hazard Symbols: XN



Risk Phrases: 22

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Causes eye irritation. Hygroscopic (absorbs moisture from the air). May be harmful if swallowed. May cause kidney damage. May cause central nervous system effects. Target Organs: Kidneys, central nervous system, respiratory system, eyes.

Potential Health Effects

Eye: May cause moderate eye irritation.

Skin: Low hazard for usual industrial handling. A single prolonged skin exposure is not likely to result in the material being absorbed in harmful amounts.

Ingestion: The lethal dose in adult humans for ethylene glycol is about 100 ml (1/3 cup). Swallowing may cause nausea, vomiting or diarrhea. Excessive exposure may cause CNS effects, cardiopulmonary effects (metabolic acidosis), and kidney failure.

Inhalation: If ethylene glycol is heated or misted in work areas that are poorly ventilated, vapor/mist may accumulate and cause respiratory irritation and symptoms such as headache and nausea. Material has a very low vapor pressure at room temperature, so inhalation exposures are not expected unless material is heated or misted.

Chronic: May cause kidney injury. Repeated excessive exposure to ethylene glycol may cause irritation of the upper respiratory tract. In humans, effects have been reported on the central nervous system, including nystagmus (involuntary, rapid, rhythmic movement of the eyeball).

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire.

Autoignition Temperature: 398 deg C (748.40 deg F)

Flash Point: 111 deg C (231.80 deg F)

Explosion Limits: 3.20 vol %
Lower:

Explosion Limits: 15.30 vol %
Upper:

NFPA Rating: health: 2; flammability: 1; instability: 0;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid breathing spray or mist.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethylene glycol	100 mg/m3 Ceiling (aerosol only)	none listed	none listed

OSHA Vacated PELs: Ethylene glycol: None listed

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Glove protection is not normally required.

Clothing: Protective garments not normally required.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Color: clear, colorless - syrupy - viscous

Odor: sweetish odor

pH: Not available

Vapor Pressure: 0.05 mm Hg @ 20 deg C

Vapor Density: 2.14 (air=1)

Evaporation Rate: Not available

Viscosity: 21cP @ 20 deg C

Boiling Point: 197 deg C @ 760 mmHg (386.60°F)

Freezing/Melting Point: -13 deg C (8.60°F)

Decomposition Temperature: Not available

Solubility in water: Soluble

Specific Gravity/Density: 1.113 g/ml

Molecular Formula: C₂H₆O₂

Molecular Weight: 62.06

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions. Hygroscopic: absorbs moisture or water from the air.

Conditions to Avoid: Moisture, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, isocyanates, aliphatic amines, caustics.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 107-21-1: KW2975000

RTECS:

CAS# 107-21-1: Draize test, rabbit, eye: 500 mg/24H Mild;

Draize test, rabbit, eye: 100 mg/1H Mild;

Draize test, rabbit, eye: 0.012 ppm/3D;

Draize test, rabbit, eye: 1440 mg/6H Moderate;

LD50/LC50: Oral, mouse: LD50 = 5500 mg/kg;

Oral, rat: LD50 = 4700 mg/kg;

Skin, rabbit: LD50 = 9530 uL/kg;

Other: Ethylene glycol is more acutely toxic for humans than for laboratory animals by ingestion. The single oral lethal dose for humans has been estimated at 1.4 ml/kg (1.56 g/kg) or about 100 ml (111 g) for an adult.

Carcinogenicity: Ethylene glycol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 41000 mg/L; 96 Hr.; Unspecified

Fish: Bluegill/Sunfish: LC50 = 27500-41000 mg/L; 96 Hr.; Unspecified

Fish: Goldfish: LC50 = 27500-41000 mg/L; 96 Hr.; Unspecified

Water flea Phytobacterium phosphoreum: LC50 = 46300 mg/L; 48 Hr.; Unspecified

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: Not regulated

Hazard Class:

UN Number:

Packing Group:
Canada TDG
Shipping Name: Not regulated as a hazardous material
Hazard Class:
UN Number:
Packing Group:

USA RQ: CAS# 107-21-1: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 22 Harmful if swallowed.

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 107-21-1: 0

Canada

CAS# 107-21-1 is listed on Canada's DSL List

Canadian WHMIS Classifications: D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 107-21-1 is listed on Canada's Ingredient Disclosure List

US Federal

TSCA

CAS# 107-21-1 is listed on the TSCA
Inventory.

Section 16 - Other Information

MSDS Creation Date: 5/12/1999

Revision #10 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.
