

Safety Data Sheet

Product Identifier: Ethylene glycol

Section 1 - IDENTIFICATION

Product Identifier:

Material Name: Ethylene glycol

Synonyms

Ethylene glycol; Ethanediol; MEG

Chemical Family

glycols

Recommended Use

chemical intermediate

Restrictions on Use

manufacture or preparation of food and pharmaceuticals; theatrical fogs or other artificial smoke generation applications; aircraft deicing applications

Manufacturer Information

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Section 2 - HAZARD(S) IDENTIFICATION

Classification in accordance with 29 CFR 1910.1200.

Acute Toxicity (Oral), Category 4

Specific Target Organ Toxicity - Repeated Exposure, Category 2 (kidneys)

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

WARNING

Hazard Statement(s)

Harmful if swallowed

May cause damage to kidneys through prolonged or repeated exposure.

Precautionary Statement(s)

Prevention

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

Response

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

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Storage

None needed according to classification criteria.

Disposal

Dispose of material in accordance with all local, regional, national and international regulations.

Hazard(s) Not Otherwise Classified

None

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component	Percent
107-21-1	Monoethylenethylene glycol	100

Section 4 - FIRST-AID MEASURES

Description of Necessary Measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention.

Skin Contact

Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing before reuse.

Eye Contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion

DO NOT induce vomiting. Rinse mouth out with water. Call a POISON CENTER or doctor/physician if you feel unwell. Never give anything by mouth to an unconscious or convulsive person.

Most Important Symptoms/Effects

Acute

Harmful if swallowed

Delayed

kidney damage

Indication of Immediate Medical Attention and Special Treatment Needed, If Needed

Treat symptomatically and supportively. Effects may be delayed. Keep affected person under observation. For ingestion, consider activated charcoal slurry.

Section 5 - FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

water, regular dry chemical, foam

Unsuitable Extinguishing Media

None known.

Special Hazards Arising from the Chemical

Hazardous Combustion Products

Combustion: oxides of carbon

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Special Protective Equipment and Precautions for Firefighters

Slight fire hazard.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Avoid inhalation of material or combustion by-products.

Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

* * *Section 6 - ACCIDENTAL RELEASE MEASURES* * *

Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation. Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Stop leak if possible without personal risk. Do not touch spilled material. Contain the discharged material. Avoid discharge into drains, surface water or groundwater. Absorb with sand or other non-combustible, absorbent material. Flush contaminated areas with water. Dispose in accordance with all applicable local regulations.

* * *Section 7 - HANDLING AND STORAGE* * *

Precautions for Safe Handling

Do not breathe vapor or mist. Avoid generating aerosols of this product or breathing vapors by the use of good engineering controls and work procedures. Do not get in eyes, on skin, or on clothing. Do not eat, drink, or smoke when using this product. Wear protective clothing to prevent contact. Use protective skin cream on exposed skin before and during work shift. After handling, always wash hands thoroughly with soap and water. Keep well away from foodstuffs, food containers and food preparation and consumption areas. Keep away from all ignition sources. Use only in well ventilated areas.

Conditions for Safe Storage, including any Incompatibilities

Store below 40 °C. Keep container tightly closed and in a cool, well-ventilated place. Keep container upright, when not in use, to prevent leakage. Keep well away from foodstuffs, food containers and food preparation and consumption areas. Material is very hygroscopic. Keep separated from incompatible substances.

Incompatibilities: oxidizing agents

* * *Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION* * *

Component Exposure Limits

Monoethylene glycol (107-21-1)

ACGIH: 100 mg/m³ Ceiling (aerosol only)

Mexico 100 mg/m³ Ceiling (aerosol)

Appropriate Engineering Controls

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eyes/Face Protection

Wear splash resistant safety glasses. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

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Skin Protection

Work clothing sufficient to prevent all skin contact should be worn, such as coveralls and long sleeves.

Glove Recommendations

Wear appropriate chemical resistant gloves. Change gloves when torn, punctured, or contaminated.

Recommended material type: butyl rubber Viton(R)

Respiratory Protection

If ventilation is not sufficient to effectively prevent buildup of mists or vapors, appropriate respiratory protection must be provided.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	Appearance:	Clear colorless viscous liquid
Color:	Colorless	Physical Form:	Liquid
Odor:	Odorless	Odor Threshold:	Not available
pH:	6-7.5 @ 10 °C 100 g/l	Melting Point:	-13 °C
Boiling Point:	197.4 °C	Flash Point:	111 °C
Evaporation Rate:	Not available	LEL:	3 % Volume
UEL:	28 % Volume	Vapor Pressure:	0.123 hPa @ 25 °C
Vapor Density (air = 1):	Not available	Density:	1.11 g/cm ³ 20 °C
Specific Gravity (water = 1):	Not available	Water Solubility:	Miscible in all proportions
Coeff. Water/Oil Dist:	1.36 log Pow	Auto Ignition:	398 °C
Viscosity:	16.1 mPas @ 25 °C	Volatility:	Not available

Section 10 - STABILITY AND REACTIVITY

Reactivity

No hazard expected.

Chemical Stability

No data available.

Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. May ignite or explode on contact with combustible materials.

Incompatible Materials

oxidizing agents

Hazardous Decomposition

Combustion: oxides of carbon

Section 11 - TOXICOLOGICAL INFORMATION

Acute Toxicity

Harmful if swallowed. May cause kidney damage.

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Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Monoethylene glycol (107-21-1)

Oral: Rat LD50: 7712 mg/kg

Dermal: Mouse LD50: >3500 mg/kg

Inhalation: Rat 6-hr LC50: >2,5 mg/l

Information on Likely Routes of Exposure

Inhalation

No information on significant adverse effects.

Ingestion

Harmful if swallowed.

Skin Contact

The material was found to be non-irritating.

Eye Contact

The material was found to be non-irritating.

Immediate Effects

Harmful if swallowed

Delayed Effects

May cause kidney damage.

Medical Conditions Aggravated by Exposure

No data available.

Irritation/Corrosivity Data

The material was found to be non-irritating.

Respiratory Sensitization

No information available for the product.

Dermal Sensitization

This material is not considered to be a skin sensitizer.

Germ Cell Mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Component Carcinogenicity

Monoethylene glycol (107-21-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Reproductive Toxicity

Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure

No target organs identified.

Specific Target Organ Toxicity - Repeated Exposure

kidneys

Aspiration Hazard

No data available.

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Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

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Fish: 96-hr LC50 Pimephales promelas: 72860 mg/l
7-d NOEC Pimephales promelas: 15380 mg/l
Algae: 96-hr EC50 Pseudokirchneriella subcapitata: >6500 - 13000 mg/L
Invertebrate: 48-hr EC50 Daphnia magna: > 100 mg/l
7-d NOEC Ceriodaphnia dubia: 8590 mg/l

Persistence and Degradability

Biodegradable.

Bioaccumulation

This material is believed not to bioaccumulate.

Mobility

No information available for the product.

Bioconcentration

No information available for the product.

Biodegradation

No information available for the product.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable local regulations.

Disposal of Contaminated Packaging

Recycle if possible. Dispose in accordance with all applicable regulations.

Section 14 - TRANSPORT INFORMATION

US DOT Information

Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Contains: Ethylene glycol), RQ

UN/NA #: UN3082 **Hazard Class:** 9 **Packing Group:** III

Required Label(s): 9

Additional Information: Reportable quantity 5050.5 lbs / 2292.9 kg (544.23 gal / 2060.1 L).

Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

TDG Information

Not regulated as dangerous goods.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Monoethylene glycol (107-21-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

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SARA 311/312

Acute Health: Yes Chronic Health: Yes Fire: No Pressure: No Reactive: No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Monoethylene glycol	107-21-1	Yes	Yes	Yes	Yes	Yes

Not regulated under California Proposition 65

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
Monoethylene glycol	107-21-11	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

Summary of Changes

Revision 2.0000, 27 August 2015: Correction of US DOT information.

NFPA Ratings: Health: 2 Fire: 1 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CPR - Controlled Products Regulations; DOT - Department of Transportation; DSL - Domestic Substances List; EPA - Environmental Protection Agency; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; Kow - Octanol/water partition coefficient; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit

Other Information

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End of Sheet