

SAFETY DATA SHEET

According to Regulation (EC) N° 1907/2006 (REACH) ; 453/2010/EC

1. Substance/preparation and company name

Trade Name Monoethylene Glycol Industrial Grade.

Typical Applications Antifreeze industrial circuits.

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2. Hazard identification

2.1. Classification of the substance or mixture

Harmful if swallowed.

Classification according to Regulation (EC) No. 1272/2008 [CLP]:
Harmful if swallowed.

2.2. Label elements

Label according to Regulation (CE)N° 1272/2008 [CLP]:



H 302: Harmful if swallowed.

H373: May cause damage to kidney through prolonged or repeated ingestion exposure

3. Composition/Information on ingredients

Monoethylene Glycol

Chemical name	CAS-No	EC number	Content	Symbol(s)	Phrases
Ethanediol	107-21-1	203-473-3	>99%	Xn	R-22

See section 16 for explanation of R-phrases.

4. First aid measures

General advice	Remove contaminated clothing.
On contact with eyes	Wash affected eyes for at least 15 minutes under running water with eyelids held open.
On skin contact	Wash thoroughly with soap and water.
If inhaled	If difficulties occur after vapour/aerosol has been inhaled remove to fresh air and seek medical attention. Inhalation of heavy concentration of vapour, fumes or spray may cause mild irritation of the throat.
On Ingestion	Immediately transport to the hospital. Possible risk of vomiting and diarrhoea. Do not induce vomiting to avoid the risk of aspiration into the respiratory tract. Give nothing to drink.
Aspiration	If the product is believed to have entered the lungs (in case of vomiting for example) take the person to hospital for immediate care.

5. Fire fighting measures

Suitable extinguishing media:	Water spray, alcohol resistant foam, dry extinguishers, carbon dioxide (CO ₂)
Specific hazards	Evolution of fumes/fog. The substances/group of substances mentioned can be released in case of fire. Vapours heavier than air. Prevent ethylene glycol from decomposing into acetaldehyde, at 500 – 600°C.
Special protective equipment	In case of fire, wear a self contained breathing apparatus.
Further Information	The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed according to official regulations.

6. Accidental release measures

Personal precautions:	Use personal protective clothing. Do not inhale vapours/aerosol.
Environmental precautions:	Do not discharge into drains, surface waters, ground water.

Methods for cleaning up/taking up: Large amount: Pump off products.
Residues/spills: Bind the liquid by using a suitable absorbent material and dispose it according to the regulations.

7. Handling and storage

Handling Ensure thorough ventilation of stores and working areas.
Keep away from combustive substances.
Keep away from food and beverages.

Protection against fire and explosion. Take precautionary measures against static discharges. If exposed to fire, keep containers cool by spraying with water.

Storage Product is hygroscopic. Containers should be stored tightly sealed in dry place. Since zinc is not compatible with ethylene glycol, storage in galvanized containers is not recommended.
Avoid exposing to direct sunlight.

Incompatible products Dangerous reaction with strong oxidizing agents.

8. Exposure controls and personal protection

General safety and hygiene measures: Wash hands and forearms after handling.
Do not smoke, eat or drink during manipulations.

Occupational exposure limit: Vapours of monoethylene glycol (VLE):
125 mg/m³ (50 ppm) for 15 minutes.

Personal protective equipment:

Respiratory protection: Only in case of release of fumes/fog. Well ventilated areas are recommended for manipulation.
Required when vapours/aerosols are generated. Filter A-(P2)

Hands: Chemical resistant protective gloves are recommended.

Eyes: Safety glasses with side-shields.

PNEC Values:

Fresh water: 10 mg/l
Sea water: 1 mg/l
Water (intermittent releases): 10 mg/l
Fresh water sediment: 20,9 mg/Kg dw
Sea sediment: No Data mg/kg dw

Soil: 1,53 mg/kg dw

Sewage Treatment Plant: 1995 mg/l

Data based on individual components for the product.

Fresh water: 23,81 mg/l
Sea water: 2,33 mg/l
Water (intermittent releases): 23,81 mg/l
Fresh water sediment: 49,76 mg/Kg dw
Sea sediment: No Data mg/kg dw

Soil: 3,64 mg/kg dw

Sewage Treatment Plant: 4750 mg/l

9. Physical and Chemical properties

Physical state	Liquid
Color	Colorless.
Odour	Weak, characteristic.
pH	6,0-8,0
Boiling point/range	aprox.170°C
Solidification temperature	aprox.-30°C
Vapour pressure at 20°C	0.1 mbar a 20°C
Flash point	>100°C
Lower explosion limit	2,6% V/V
Upper explosion limit	12,6% V/V
Ignition temperature	>400°C
Density	1.10-1.12 g/cc at 20°C
Solubility in water	Unlimited.
Solubility in other solvents	Soluble in polar solvents.

10. Stability and reactivity

Hazardous reactions	No hazardous reactions if stored and handle as prescribed.
Substances to avoid	Powerful oxidizing agents and strong acids.
Hazardous decomposition products	No hazardous decomposition products if stored and handle as prescribed. Incomplete combustion and thermolysis produce soot and gases of varying toxicity such as CO, CO ₂ , various hydrocarbon and aldehydes.

11. Toxicological data

Acute toxicity:

LD50 (oral, rat): 7712 mg/Kg. (Literature)

LD50 (dermal, rabbit): >5000 mg/Kg. (Literature)

LC50 (inhalation, rat, 8 hours): >183 ppm (Literature)

Based on the individual component literature data, not tested as mixture.

LD50 (oral, rat): 18362 mg/Kg. (Literature)

LD50 (dermal, rabbit): >11905 mg/Kg. (Literature)

Ingestion comments

Ingestion constitutes the main danger because of the toxicity of ethylene glycol.

Acute intoxication is particularly dangerous for children.

Ingestion is followed first by digestive disorders (nausea, vomiting, abdominal pain), then loss of muscular coordination, convulsions, headaches and dizzy spells, preceding serious nervous disorders.

This develop into a state of torpor and then coma, at times accompanied by convulsions.

High metabolic acidosis (oxalic acid) leads to affliction of the renal ducts, with anuresis.

Intoxication can lead coma with metabolic acidosis that may be fatal.

For man, the lowest oral lethal dose known is 1.5 g/Kg

Subacute to chronic toxicity:

Sensitization:

Not expected to be a sensitizer.

Mutagenicity:

Mutagenicity (mammal cell test): negative (OECD 476)

Bacterial mutagenicity: Ames test: negative (in vitro) (IUCLID)

Carcinogenicity:

Not carcinogenic in two years studies in rats and mice . This material is not classified as carcinogen. Not listed by IARC, NTP, OSHA or EPA.

Teratogenicity:

Not expected

12. Ecological data

Acute toxicity

Toxicity to fish:

Oncorhynchus mykiss (Rainbow Trout) 22810 mg/l LC50 96 h

Pimephales promelas (fathead minnow) 49000 mg/l LC50 96 h

Aquatic invertebrates:

Daphnia Magna (Water flea) 41000 mg/l EC50 48 h

Aquatic plants:

Scenedesmus capricornutum (fresh water algae) 10940 mg/l IC50 96 h

Microorganisms:

Pseudomonas putida: >10000 mg/l Toxicity Threshold / 16 hours

Chronic toxicity

Chronic Toxicity to fish:

Oncorhynchus mykiss (Rainbow Trout) 14692 mg/l NOEC/ 12 days

Chronic Toxicity to aquatic invertebrates:

Ceriodaphnia dubia 3469 mg/l NOEC/ 7 days.

Aquatic plants: Scenedesmus capricornutum (fresh water algae) 10940 mg/l IC50 96 h

Assessment of aquatic toxicity

The product has not been tested. The statement has been derived from the properties of the individual components and literature review.

Persistence and Degradability

Biodegradation 97%/28d (OCDE 301 C): Readily biodegradable.

Distribution: log Pow: -1,36 (Experimental, Literature): No bioaccumulation is to be expected (log Pow<1).

Additional information Do not release into natural waters.

13. Disposal considerations

Waste disposal

Dispose of in a safe manner, in accordance with local regulations.

Disposal of contaminated packaging

Proceed in compliance with prevailing regulations.

14. Transport information

Not classified as hazardous under transport regulations.
(ADR / RID / ADNR / IMDG/GGVSee ICIAO/IATA)

15. Regulatory information

Regulations of the European Union (labeling) / National legislation / Regulations:



Hazard symbol: Harmful

Contains: Ethanediol

Risk phrases: H 302: Harmful if swallowed.
H373: May cause damage to kidney through prolonged or repeated ingestion exposure

Precaution phrases: P280: Wear protective gloves/protective clothing/eye protection/face protection.
P309+P310: IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician
P301+P330+P331: IF SWALLOWED: Rinse mouth and do NOT induce vomiting.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

16. Further information

Abbreviations and acronyms:

PNEC: Predicted No Effect Concentration.

Intermittent Release: Intermittent but only recurring infrequently i.e. less than once per month and for no more than 24 hours.

This safety data sheet is intended to provide information and recommendations as to: 1. how to handle chemical substances and preparations in accordance with the essential requirements of safety precautions and physical, toxicological and ecological data. 2. how to handle, store, use and transport them safely.

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