

SAFETY DATA SHEET

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

1. Substance/preparation and company name

Trade Name Luzar Organic Concentrated

Typical Applications Coolant – Antifreeze for closed cooling circuit.

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2. Hazard identification



H 302: Harmful if swallowed.

3. Composition/Information on ingredients

Ethylene Glycol with corrosion inhibitors.

Chemical name	CAS-No	EC number	Content	Pict.	Phrases
Ethanediol	107-21-1	203-473-3	>90%	GHS07 GHS08	H302, H373 P260, P264, P270 P301, P312, P330, P501

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 mist/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

Do not induce vomiting. Seek immediate medical attention. If person is fully conscious, give 1 cup of water. If medical advice is delayed and if an adult has swallowed several ounces of chemical, then give 100ml (grams) of hard liquor such as 80 proof whiskey (40% abv). For children, give proportionally less liquor at a dose of 8ml (8grams, 1 1/2 tsp.) liquor for each 5kg of body weight, or 2ml per kg body weight (e.g., 36ml for an 18kg child).

Note to physician

If several milliliters (60-100ml) of ethylene glycol have been ingested, early administration of ethanol may counter the toxic effect (metabolic acidosis, renal damage).

Consider hemodialysis or peritoneal dialysis & thiamine 100mg plus pyridoxine 50mg intravenously every 6 hours. If ethanol is used, a therapeutically effective blood concentration in the range of 100-150mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 434-9); loading dose 15mg/kg intravenously, followed by bolus dose of 10mg/kg every 12 hours; after 48 hours, increase bolus dose to 15mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG, or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Person receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Maintain adequate ventilation and oxygenation of the patient. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire fighting measures**Suitable extinguishing media:**

Water spray, alcohol resistant foam, dry extinguishers, carbon dioxide (CO₂)

Specific hazards

Evolution of fumes/fog.

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

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 away from combustive substances.

Keep away from food and beverages.

Protection against fire and explosion.

Take precautionary measures against static discharges.

Fire and explosion.

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.

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.

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)

Exposure Limits (Ethylene Glycol)

Ethylene Glycol Liquid Vapor Equilibrium (VLE): 125 mg/m³ (50ppm) for 15 minutes.

Hands:

Chemical resistant protective gloves are recommended.

Eyes:

Safety glasses with side-shields.

PNEC Values:***Pure Ethylene Glycol data***

<u>Fresh water:</u>	10 mg/l
<u>Sea water:</u>	1 mg/l
<u>Water (intermittent releases):</u>	10 mg/l
<u>Fresh water sediment:</u>	20,9 mg/Kg dw
<u>Sea sediment:</u>	No Data mg/kg dw
<u>Soil:</u>	1,53 mg/kg dw
<u>Sewage Treatment Plant:</u>	1995 mg/l

9. Physical and Chemical properties

Physical state	Liquid
Color	Fluorescent yellow.
Odour	Weak, characteristic.
pH	8-10
Boiling point/range	>150°C
Solidification temperature	-38°C approx.
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	1.11-1.15 g/cc at 20°C
Solubility in water	Unlimited.
Solubility in other solvents	Soluble in polar solvents.

10. Stability and reactivity

Hazardous Reactions

Stable under recommended storage conditions. See Handling and storage, Section 7.

Conditions to Avoid

Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials

Powerful oxidizing agents and strong acids.

Hazardous Polymerization

Will not occur.

Hazardous Decomposition Products

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic Acids.

11. Toxicological data

Pure Ethylene Glycol data

Acute toxicity

- Ingestion

Oral toxicity is expected to be moderate in humans due to Ethylene Glycol even though tests with animals show a lower degree of toxicity. Incidental ingestion of small amounts during normal handling is not likely to cause harmful effects. Swallowing large amounts may be lethal or near-lethal. It may cause nausea, vomiting, abdominal discomfort and diarrhea. Excessive exposure can result in metabolic acidosis, further central nervous system depression and kidney damage.

For ethylene glycol:

Lethal Dose, Human, adult 100ml

LD50, Rat: 6.000-13.000mg/kg

- Eyes contact

May cause mild eye irritation. Corneal injury is unlikely or insignificant. Vapors or mist may cause temporary eye irritation.

- Skin contact

A single exposure is not likely to cause skin irritation. Prolonged or repeated skin contact may cause skin sensitization and an associated dermatitis in some individuals.

- Skin Absorption

A single prolonged exposure is not likely to result in material being absorbed through skin in harmful amounts. Massive contact with damaged skin may result in absorption of potentially harmful amounts. Skin absorption of this material may be increased through injured skin.

LD50, Rabbit: >22.270mg/kg

- Inhalation

Breathing small amounts of this material during normal handling is not likely to cause harmful effects. High vapor concentrations caused, for example, by heating the material in an enclosed and poorly ventilated workplace, may produce nausea and headache.

LC50, 7 h, Aerosol, Rat: >3,95mg/L

Repeated Dose Toxicity

Repeated excessive exposure may cause irritation of the upper respiratory tract. In humans, effects have been reported on the following organs: Central nervous system. Observations in humans include: Nystagmus (involuntary eye movement). In animals, effects have been reported on the following organs: Kidney, Liver.

Chronic Toxicity and Carcinogenicity

Ethylene glycol did not cause cancer in long-term animal studies.

Developmental Toxicity

Based on animal studies, ingestion of very large amounts of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation or skin contact, the primary routes of occupational exposure, had minimal effects on the fetus in animal studies.

Reproductive Toxicity

Ingestion of large amounts of ethylene glycol has been shown to interfere with reproduction in animals.

Genetic Toxicology

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. Ecological data

Pure Ethylene Glycol data

CHEMICAL FATE

Movement & Partitioning:

Bioconcentration potential is low (BCF <100 or Log Pow <3). Potential for mobility in soil is very high (Koc between 1 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Henry's Law Constant (H): 8,05E-09 atm*m3/mole; 25 C Estimated
Partition coefficient, n-octanol/water (log Pow): -1,36 Measured
Partition coefficient, soil organic carbon/water (Koc): 1 Estimated

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
Material is ultimately biodegradable (reaches >70% mineralization in OECD test(s) for inherent biodegradability).

OECD Biodegradation Test

Biodegradation: > 94%
Exposure Time: 28 d
Method: OECD 301F Test
Biodegradation: 90 %
Exposure Time: 1 d
Method: OECD 302B Test

ECOTOXICITY

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, rainbow trout (*Oncorhynchus mykiss*), static, 96 h: 18.000 – 46.000 mg/L

Aquatic Invertebrate Acute Toxicity

LC50, water flea *Daphnia magna*, static, 48 h: 46.300 – 51.000 mg/L

Aquatic Plant Toxicity

EC50, green alga *Selenastrum capricornutum*, biomass growth inhibition, 96 h: 9.500 – 13.000 mg/L

Toxicity to Micro-organisms

EC50, OECD 209 Test; activated sludge, respiration inhibition, 30 min: 225 mg/L

13. Disposal considerations

Do not dump into any sewers, on the ground, or into any body of water. All disposal practices must be in compliance with all Federal, State/ Provincial and local laws and regulations. Regulations may vary in different locations. For unused & uncontaminated product, the preferred options include sending to a licensed, permitted: Recycler, Reclaimer, Incinerator or other thermal destruction device.

14. Transport information

ROAD & RAIL

NOT REGULATED

MARITIME
NOT REGULATED

AIR
NOT REGULATED

INLAND WATERWAY
NOT REGULATED

15. Regulatory information

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



H 302: Harmful if swallowed.

US. Toxic Substances Control Act (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

European Inventory of Existing Commercial Chemical Substances (EINECS)

This product is on the EINECS inventory.

16. Further information

Risk phrases:

Health hazards:

H302: Harmful if swallowed.

H373: May cause damage to organs through prolonged or repeated exposure.

Precautionary Statement:

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

P264: Wash thoroughly after handling.

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

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P330: Rinse mouth.

P501: Dispose of contents/container in accordance with local/regional/national/international regulation

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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