

Safety Data Sheet TRIETHYLENE GLYCOL

SDS no. 32MVAJMR • Version 1.0 • Date of issue: 2023-04-29

SECTION 1: Identification

GHS Product identifier

Product name TRIETHYLENE GLYCOL

Other means of identification

Product Product Number

Trigol
TEG
TRIETHYLENE GLYCOL LR TL069

Recommended use of the chemical and restrictions on use

Solvent and plasticizer in vinyl, polyester and polyurethane resins; dehydration of natural gas; humectant in printing inks; extraction solvent and laboratory reagent.

Supplier's details

Name ChemSupply Australia Pty Ltd
Address 38-50 Bedford Street
5013 Gillman South Australia
Australia

Telephone 08 8440 2000
email www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

Not a hazardous substance or mixture.

GHS label elements, including precautionary statements

Not a hazardous substance or mixture.

Other hazards which do not result in classification

Not a hazardous substance or mixture.

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 150.18

Components

Component	CAS no.	Concentration
TRIETHYLENE GLYCOL (EC no.: 203-953-2)	112-27-6	100 - 100 % (weight)
CLASSIFICATIONS: No data available. HAZARDS: No data available.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain and drench facilities in work area.
If inhaled	Remove from exposure, rest and keep warm. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen. Seek medical attention in severe cases, if symptoms develop, or if breathing is difficult.
In case of skin contact	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist.
In case of eye contact	If contact with the eye(s) occur, wash with copious amounts of water for approximately 15 minutes holding eyelids(s) open. Take care not to rinse contaminated water into the non-affected eye. If irritation develops seek medical attention.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Small fire: Use dry chemical, CO₂, water spray or foam.

Large fire: Use water spray, fog or foam.

Specific hazards arising from the chemical

Hazards from Combustion Products: Toxic and/or irritating fumes, smoke and gases including carbon monoxide and carbon dioxide. May burn but do not ignite readily. Runoff may pollute waterways. Fire may produce irritating, poisonous and/or corrosive fumes. Containers may explode when heated.

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate the area of all non-essential personnel. Avoid inhalation and ingestion. Avoid contact with skin, eyes and clothing. Wear protective clothing specified for normal operations (see Section 8)

Methods and materials for containment and cleaning up

Absorb or contain liquid with sand, earth or spill control material. Shovel up and place in a labelled, sealable container for subsequent safe disposal.
Prevent from entering into drains, ditches or rivers.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid ingestion and inhalation. Avoid contact with eyes, skin, and clothing. Ensure good ventilation at the workplace.

Conditions for safe storage, including any incompatibilities

Store in tightly closed containers, in a cool, dry, well-ventilated area away from incompatible materials.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection

Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state

Liquid

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Appearance	Clear, colourless to light yellow viscous liquid.
Color	No data available.
Odor	Practically odourless; mild odour.
Odor threshold	No data available.
Melting point/freezing point	-5 to -7 °C.
Boiling point or initial boiling point and boiling range	285 °C.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	Flammable Limits - Lower: 0.9 vol%. Flammable Limits - Upper: 9.2 vol%.
Flash point	165 °C (CC); 171 °C (CC); 177 °C (CC).
Explosive properties	Explosive vapour-air mixtures may be formed above the flash point, at elevated temperatures, or when exposed to heat, flame, or spark.
Auto-ignition temperature	347 °C at 1013 hPa; 371 °C.
Decomposition temperature	No data available.
Oxidizing properties	No oxidizing properties.
pH	6.5 - 7.5 (100 g/l H ₂ O, 20 °C).
Kinematic viscosity	Viscosity: 47.8 cP at 20 °C.
Solubility	Solubility in Water: Miscible (soluble) in all proportions. Solubility in Organic Solvents: Miscible with alcohol, benzene, toluene; soluble in oxygenated solvents; slightly soluble in ethyl ether, chloroform; practically insoluble in petroleum ether.
Partition coefficient n-octanol/water (log value)	log P(o/w): -1.98 (25 °C) (calculated); -1.24 to -1.9 (calculated).
Vapor pressure	1.33 hPa at 114 °C.
Evaporation rate	<0.005 compared with Butyl acetate.
Density and/or relative density	Specific Gravity: 1.125 at 20 °C.
Relative vapor density	5.17.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

Other Information: Bulk density: 1126.49 kg/m³ (at 20 °C).

Refractive index: (n 20 °C/D) 1.4559.

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Chemical stability

Stable under normal temperatures, pressures and conditions of storage and handling. Hygroscopic.

Possibility of hazardous reactions

Can react with oxidizing materials. Glycols undergo violent decomposition in contact with 68-72% perchloric acid.

Conditions to avoid

High temperatures, strong heating, flames, ignition sources, exposure to moisture and incompatible materials.

Incompatible materials

Strong oxidizing agents, strong acids, sulfuric acid, perchloric acid, alkalis and isocyanates.

Hazardous decomposition products

Toxic and/or irritating fumes, smoke and gases including carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Acute Toxicity - Oral: LD50 (rat): 15000 mg/kg;

Ingestion: Ingestion may cause gastrointestinal irritation with nausea, vomiting and diarrhoea. Possible aspiration hazard. Absorption of large quantities may cause damage of the liver and kidneys.

Inhalation: Exposure to mists may cause mild respiratory tract irritation. Inhalation of vapour/mists is not expected to cause adverse effects.

Skin corrosion/irritation

Acute Toxicity - Dermal: LD50 (rabbit): 22460 mg/kg.

May cause slight skin irritation, with redness, dryness, inflammation and itching.

Serious eye damage/irritation

Causes mild eye irritation. Liquid causes irritation and may cause transient disturbances of corneal epithelium. However, these effects diminish. Adverse effects are not expected to be permanent. Vapours are non-irritating.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Summary of evaluation of the CMR properties

No data available.

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

No data available.

Aspiration hazard

No data available.

Additional information

Chronic Effects: Chronic ingestion of moderate amounts can cause changes to the liver, kidneys, bladder, and enzyme levels. Prolonged exposure may cause skin irritation. Prolonged exposure can cause nausea, headache, and vomiting. Chronic exposure may cause blood effects (severe aplastic anaemia, anaemia, and blood platelet reductions) and central nervous system effects (drowsiness, fatigue, tremors and mental dullness), pulmonary congestion and oedema and liver and kidney damage.

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TRIETHYLENE GLYCOL: *TOXICITY:

typ. dose mode specie amount units other

LDLo orl hmn 5000 mg/kg

LD50 orl rat 17 gm/kg

LD50 ivn rat 11700 mg/kg

LDLo ims rat 8400 mg/kg

LDLo orl mus 18500 mg/kg

LD50 ipr mus 8141 mg/kg

LD50 scu mus 8750 mg/kg

LD50 ivn mus 6500 mg/kg

LD50 orl rbt 8400 mg/kg

LD50 ivn rbt 1900 mg/kg

LD50 orl gpg 7900 mg/kg

LD50 ivn gpg 10600 mg/kg

*AQTX/TLM96: >1000 ppm

***SAX TOXICITY EVALUATION:**

THR: HIGH via intravenous route. LOW via intramuscular, oral, intraperitoneal, subcutaneous and intravenous routes.

*CARCINOGENICITY: Not available

***MUTATION DATA:**

test lowest dose | test lowest dose

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Not available |

***TERATOGENICITY:**

Reproductive Effects Data:

TDLo: orl-mus 90160 mg/kg (7-14D preg)

***STANDARDS, REGULATIONS & RECOMMENDATIONS:**

OSHA: None

ACGIH: None

NIOSH Criteria Document: None

NFPA Hazard Rating: Health (H): 1

Flammability (F): 1

Reactivity (R): 0

H1: Materials only slightly hazardous to health (see NFPA for details).

F1: Materials that must be preheated before ignition can occur (see NFPA for details).

R0: Materials which are normally stable even under fire exposure conditions and which are not reactive with water (see NFPA for details).

***OTHER TOXICITY DATA:**

Skin and Eye Irritation Data:

skn-rbt 500 mg/24H MOD

Status: EPA TSCA Chemical Inventory, 1986

EPA TSCA Test Submission (TSCATS) Data Base, June 1987

Meets criteria for proposed OSHA Medicals Records Rule

SECTION 12: Ecological information

Persistence and degradability

Biologic degradation: Slow degradation.

Bioaccumulative potential

No bioaccumulation is to be expected (log P(o/w) <1).

Mobility in soil

Distribution: log P(o/w): -2.08 (calculated); -1.98 (25 °C) (calculated); -1.24 to -1.9 (calculated).

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Sewage disposal

No bioaccumulation is to be expected (log P(o/w) <1).

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: NS

SECTION 16: Other information

Further information/disclaimer

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Preparation information

All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)