



Infosafe No™	1CH2S	Issue Date : July 2019	RE-ISSUED by CHEMSUPP
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Product Name : **ETHANEDIOL**

Classified as hazardous

1. Identification

GHS Product Identifier ETHANEDIOL

Company Name CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)

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SA 5013 Australia

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Recommended use of the chemical and restrictions on use Coolant and antifreeze; asphalt-emulsion paints; heat transfer agent; low pressure laminates; brake fluids; solvent; polyester fibres and films; low freezing dynamite; extractant for various purposes; cosmetics (up to 5%); solvent mixture for cellulose esters and ethers, especially cellophane; lacquers; alkyd resins; wood stains; adhesives; printing inks; foam stabilizer; solvent extraction; ball point pen inks; tobacco; leather dyeing; textile processing; humectant; ingredient of de-icing fluid for airport runways; glycol diacetate and laboratory reagent.

Other Names	Name	Product Code
	Ethylene Glycol, Monoethylene glycol, Monoethylene glycol, 1,2-Dihydroxyethane, 1,2-Ethanediol, Glycol alcohol, Ethylene dihydrate	
	ETHANEDIOL TG	ET007
	ETHYLENE GLYCOL 28% w/w Solution	ET175
	ETHYLENE GLYCOL 50% v/v Solution	ET169
	ETHYLENE GLYCOL 38% w/w Solution	ET176
	ETHANEDIOL AR	EA007

Other Information

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

GHS classification of the substance/mixture Acute Toxicity - Oral: Category 4
Specific Target Organ Toxicity - Single Exposure Category 3 (respiratory tract irritation)

Signal Word (s) WARNING

Hazard Statement (s) H302 Harmful if swallowed.
H335 May cause respiratory irritation.

Pictogram (s) Exclamation mark



Precautionary statement – Prevention P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.

Precautionary statement – Response P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.



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Precautionary statement – Storage P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Precautionary statement – Disposal P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients**Chemical** Liquid**Characterization****Ingredients**

<u>Name</u>	<u>CAS</u>	<u>Proportion</u>	<u>Hazard Symbol</u>	<u>Risk Phrase</u>
Ethanediol	107-21-1	28-100 %		
Water to make a total of 100%	7732-18-5	-		

4. First-aid measures

Inhalation If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Ingestion 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.

Skin Wash affected area thoroughly with soap and water. Remove contaminated clothing and wash before reuse or discard. If symptoms develop seek medical attention.

Eye contact Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. If rapid recovery does not occur, obtain medical attention.

First Aid Facilities Maintain eyewash fountain and safety shower in work area.

Advice to Doctor Treat symptomatically based on judgement of doctor and individual reactions of the patient.

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

5. Fire-fighting measures

Hazards from Combustion Products May liberate toxic fumes in fire (Carbon oxides).

Specific Methods Small fire: Use dry chemical, CO2 or water spray.
Large fire: Use water spray, fog or foam - Do NOT use water jets.
If safe to do so, move undamaged containers from the fire area. Cool containers with flooding quantities of water until well after the fire is out. Avoid getting water inside the containers.

Specific hazards arising from the chemical May burn but do not ignite readily. Containers may explode when heated. Runoff may pollute waterways. Fire or heat may produce irritating, poisonous and/or corrosive gases.

Precautions in connection with Fire Wear SCBA and structural firefighter's uniform.

6. Accidental release measures

Spills & Disposal Do NOT touch or walk through this product. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas. Cover with DRY earth, sand or other non-combustible material followed by a plastic sheet to minimize spreading or contact with rain. Use clean, non-sparking tool to collect material and place it into loosely-covered plastic containers for later disposal.
Evacuate the area of all non-essential personnel. Avoid inhalation, contact with skin, eyes and clothing.

Personal Precautions

Personal Protection Wear protective clothing specified for normal operations (see Section 8)

Clean-up Methods - Small Spillages Absorb or contain liquid with sand, earth or spill control material. Shovel up using non sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum.

Clean-up Methods - Large Spillages Seek expert advice on handling and disposal.

Environmental Precautions Prevent from entering into drains, ditches or rivers.

7. Handling and storage



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Precautions for Safe Handling Do not breathe vapour. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Avoid ingestion and inhalation of material. Wash hands and face thoroughly after working with material. Use with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities Store in cool place and out of direct sunlight. Store in well ventilated area. Store away from sources of heat or ignition. Store away from oxidizing agents. Keep containers closed at all times.

Storage Regulations Classified as a C1 (Combustible liquid) for the purpose of storage and handling. Refer Australian Standard AS 1940-2017 'The storage and handling of flammable and combustible liquids'.

8. Exposure controls/personal protection

Occupational exposure limit values	<u>Name</u>	STEL		TWA		<u>Footnote</u>
		<u>mg/m3</u>	<u>ppm</u>	<u>mg/m3</u>	<u>ppm</u>	
	Ethanediol	104	10	52	20	Vapour
Other Exposure Information	<p>These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.</p> <p>A time weighted average (TWA) has been established for Ethanediol/Ethylene glycol (vapour) (Safe Work Australia) of 52 mg/m3 (20 ppm). The corresponding STEL level is 104 mg/m3 (40 ppm). TWA has also been established for Ethanediol/Ethylene glycol (particulate) (Safe Work Australia) of 10 mg/m3. The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.</p> <p>NOTE: 'SK' notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.</p>					
Appropriate engineering controls	In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. These methods should be used in preference to personal protective equipment.					
Respiratory Protection	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.					
Eye 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.					
Hand Protection	Wear gloves of impervious material conforming to AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. Final choice of appropriate glove type will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments.					
Personal Protective Equipment	Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.					
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 and apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.					
Hygiene Measures	Do not eat, drink, or smoke in areas where this material is handled. Wash hands thoroughly after handling. Remove contaminated clothing promptly and launder before reuse.					

9. Physical and chemical properties

Form	Liquid
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Appearance	Clear, colourless, viscous liquid.
Odour	Odourless.
Melting Point	-13 °C (100% solution)
Freezing Point	-37°C (50% solution)
Boiling Point	197.6 °C (@ 760 mmHg) (100% solution) > 129°C (50% solution)
Solubility in Water	Miscible in water in all proportions.
Solubility in Organic Solvents	Soluble in alcohol, acetic acid, acetone and ether. Insoluble in benzene. (100% solution)
Specific Gravity	1.1155 (100% solution) 1.07 (50% solution)
pH	7.6 - 8.6 (50% solution)
Vapour Pressure	0.06 HPa @ 20 °C (100% solution)
Vapour Density (Air=1)	2.14 (air=1)(100% solution)
Viscosity	21 mPas @ 20 °C (100% solution)
Flash Point	111 °C (100% solution)
Flammability	Combustible. (100% solution)
Auto-Ignition Temperature	398 - 410 °C (100% solution)
Flammable Limits - Lower	3.2 % (100% solution)
Flammable Limits - Upper	15.3 % (100% solution)
Molecular Weight	62.07 Ethanediol
Other Information	Taste: Bittersweet taste. Lowers freezing point of water. Refractive index: 1.430 @ 25 °C. (100% solution) The low vapour pressure of ethylene glycol (0.06 HPa) at room temperature usually precludes excessive exposure to the vapour. However, inhalation exposure may be a problem if ethylene glycol is handled hot or if a mist is generated by heat or by violent agitation.

10. Stability and reactivity

Chemical Stability	Stable under normal use conditons. Hygroscopic
Conditions to Avoid	Water (absorbs readily). Heat, direct sunlight, open flames or other sources of ignition. Incompatibles.
Incompatible Materials	Aluminium, ammonium dichromate, chromium trioxide, phosphorus pentasulfide, potassium permanganate, silver chlorate, sodium peroxide, sodium chloride, strong acids (chlorosulfonic acid, sulfuric acid and perchloric acid), strong bases, Strong oxidising agents and uranyl nitrate.
Hazardous Decomposition Products	Carbon dioxide and carbon monoxide.
Possibility of hazardous reactions	Reacts violently with chlorosulfonic acid, oleum, sulfuric acid and perchloric acid. Causes ignition at room temperature with chromium trioxide, potassium permanganate and sodium peroxide. Causes ignition at high temperatures (100 °C) with ammonium dichromate, silver chlorate, sodium chloride and uranyl nitrate.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Acute Toxicity - Oral	LD50 (rat): 4700 mg/kg (IUCLID) LDLo Human: 786 mg/kg (RTECS)
Ingestion	Harmful if swallowed. Lethal dose in humans: 100 ml (3-4 ounces). Symptoms of ingestion are similar to those of alcohol poisoning and are followed by nausea, vomiting, headaches, abdominal pain, weakness, muscle tenderness, lowered blood pressure, rapid respiratory and heart rate, central nervous depression, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema, hypocalcemic tetany and severe metabolic acidosis. Without treatment, death may occur within 8-24 hrs of ingestion. If



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Inhalation	death does not occur, acute kidney failure and brain damage may occur. Mild hypocalcemia is a common finding. Exposure to and/or consumptions of alcohol may increase toxic effects.
Skin	May cause irritation to respiratory tract. Symptoms may include nausea, vomiting, dizziness and drowsiness. When heated or misted, has caused rapid and involuntary eye movement followed by coma.
Eye	May be harmful if absorbed through skin. Will have a degreasing action on the skin.
Carcinogenicity	May cause eye irritation, pain and eye damage.
Reproductive Toxicity	No evidence of carcinogenic properties.
Chronic Effects	Adverse reproductive effects have occurred in experimental animals.
Mutagenicity	Repeated or prolonged skin contact may lead to mild irritation, penetration and slight softening. Repeated or prolonged exposure via inhalation/ingestion leads to respiratory failure, convulsions, CNS depression, cardiovascular collapse, pulmonary edema, severe metabolic acidosis and death. If death does not occur, acute kidney failure and brain damage may occur and dialysis may be required.
	No evidence of mutagenic properties.

12. Ecological information

Ecological Information	No ecological problems are to be expected when the product is handled and used with due care and attention.
Persistence and degradability	Readily biodegradable.
Bioaccumulative Potential	Does not bioaccumulate.
Acute Toxicity - Fish	LC50 (Onchorhynchus mykiss): >18500 mg/l/96 h.
Acute Toxicity - Daphnia	EC50 (Daphnia magna): 74000 mg/l/24 h.

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.
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14. Transport information

Transport Information	Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.
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15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS). Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Poisons Schedule	S6

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'. Safe Work Australia, 'Hazardous Chemical Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'. Contact Person/Point Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: 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 misuse, are beyond our control, we make
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Safety Data Sheet

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Empirical Formula & C₂H₆O₂

Structural Formula

...End Of MSDS...

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