

ASCC (NZ) Pty. Ltd**MSDS Summary Information**

For further information : Please refer to the ASCC SDS

Issue: September, 2008

PRODUCT: MEG**Other Names:** Ethylene glycol, 1,2
Ethenediol, 1,2-Dihydroxyethane,
Monoethylene glycol**Uses:** Coolant and antifreeze;
heat-transfer agent; brake fluids; solvent;
humectant**UN No.** -**Dangerous Goods Class:** -**Subsidiary Risk:** -**Packing Group:** III**HAZCHEM:**

Hazardous Nature:	This product is classified as hazardous under HSNO criteria
Exposure Standards:	TWA ceiling 127 mg/m ³ (50 ppm) STEL : Not available
Environmental Standards:	EEL : Not available

Physical Characteristics (Typical)	Section 9 of SDS
Appearance	Clear, colourless, slightly viscous liquid
Boiling Point/Range (°C)	197
Flashpoint (°C)	110
Specific gravity/Density (g/ml @ 15°C)	1.12
Chemical Stability	Stable at room temperature and pressure
Reactivity	Strong oxidising agents, strong acids and bases, perchloric acid, chromyl chloride

Product Ingredients	Section 3 of SDS	
Ethylene glycol	107-21-1	100

For further ingredients information, please refer to the SDS

Hazardous Statements	Section 2 of SDS
H304 May be harmful if swallowed H320 Causes eye irritation	H362 Causes damage to organs through prolonged or repeated exposure H433 Harmful to terrestrial vertebrates

For further Hazard and Precautionary information, please refer to the SDS

Dangerous Goods	Products that are classified as Dangerous for Storage and Transport: these products are allocated a UN No., with accompanying Class, Pack Group, and Sub. Risk, if required. Products that do not have a specific description under the code, but have low flash points, or such, must be classified under their most significant risk, e.g. Flammable Goods N.O.S. (Not otherwise specified), UN 1993
Hazardous Substance	Products are considered to be Hazardous if they pose an intrinsic risk to human or environmental health, such as mutagens (able to change DNA), teratogens (able to result in birth defects), carcinogens (able to generate cell abnormalities), etc.
HSNO Act	Hazardous Substance and New Organisms Act – limits and manages the transaction of hazardous substances in New Zealand and her territories.

SUMMARY INFORMATION ONLY

1. IDENTIFICATION

Product Name: MEG
Other Names: Ethylene glycol, 1,2 Ethandiol, 1,2-Dihydroxyethane, Monoethylene glycol
Chemical Family: Glycol
Molecular Formula: C₂H₆CO₂
Recommended Use: Coolant and antifreeze; heat-transfer agent; brake fluid; solvent; humectant
Supplier: Australasian Solvents and Chemicals Company Pty. Ltd
Address: PO Box 8340, Symonds Street, Auckland, N.Z.
Telephone: 0800 754 767
Emergency phone: **CHEMCALL: 0800 243 622**
All other inquiries: 0800 754 767

2. HAZARDS IDENTIFICATION

Product is classified as hazardous according to Schedules 1 to 6 of the *Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001* of the HSNO Act, 1996.

HSNO Classifications: 6.1D, 6.4A, 6.9A, 9.3C

Signal word: **DANGER**

Hazard Statements :

H304 May be harmful if swallowed
H320 Causes eye irritation
H433 Harmful to terrestrial vertebrates
H363 Causes damage to organs through prolonged or repeated exposure

Precaution Statements :

P102 Keep out of reach of children
P103 Read label before use
P273 Avoid release to environment
P260 Do not breathe mist, vapours or spray
P264 Wash hands thoroughly after using
P270 Do not eat, drink or smoke when using this product

3. COMPOSITION : Information on Ingredients

Chemical Ingredient	CAS No.	Proportion (% w/w)
Ethylene glycol	107-21-1	100

4. FIRST AID MEASURES

For advice, contact National Poison Centre (Phone New Zealand: 0800 764 766) or a doctor.

Swallowed

Rinse mouth with water. Do not induce vomiting. Give plenty of water to drink if person is conscious. If vomiting occurs, give more water to drink. Seek medical advice.

Skin Contact

If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. If irritation occurs seek medical advice. Wash contaminated clothing before re-use.

Eye Contact

Hold eyelids apart and flush the eye continuously with running water. Continue flushing for at least 15 minutes. Get medical attention.

Inhalation

Move the victim to fresh air immediately and keep at rest and warm in a position comfortable for breathing. Begin artificial respiration if breathing has stopped. Get immediate medical attention.

First Aid facilities

Provide eye baths and safety showers close to areas where splashing may occur.

Medical Attention

Treat according to symptoms. Ethylene glycol can cause central nervous system depression and metabolic acidosis. Consider management actions of :gastric decontamination, correction of metabolic acidosis with bicarbonate, inhibition of ethylene glycol metabolism by giving ethanol (100 mg/dL or higher) or fomepizole as antidotes and haemodialysis to remove ethylene glycol and its major metabolite glycolic acid.

5. FIRE FIGHTING MEASURES**Suitable extinguishing media :**

For large fires use water fog, fine water spray or foam. Do not use water jets. For small fires use foam, dry chemical, carbon dioxide or water spray.

Hazards from combustion products:

Combustible liquid. On burning will emit toxic fumes including carbon dioxide and carbon monoxide.

Precautions for fire fighters and special protective equipment:

Full protective clothing and self-contained breathing apparatus.
Heating can cause expansion or decomposition leading to violent rupture of containers. Keep containers cool with water spray. If safe to do so, remove containers from path of fire.

Hazchem Code: None assigned

6. ACCIDENTAL RELEASE MEASURES**Emergency Procedures:**

Slippery when spilt. Avoid accidents, clean up immediately. Do not touch or walk through spilled material. Wear protective equipment to prevent skin and eye contamination and inhalation of vapours.

Methods and materials for containment:

For small spills, prevent run off into drains or waterways. Use absorbent material (soil, sand or other inert material). Collect and seal in properly labeled drums for disposal. Wash area down with excess water to remove residual material and any slip hazard.

Major Land Spill

- Prevent liquid from entering sewers, watercourses, or drains.
- Keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Remove or isolate sources of ignition.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.
- Take measures to minimize the effect on the ground water.
- Contain the spilled liquid with sand or earth or other inert material.
- Recover by pumping into labeled drums or with a suitable absorbent material.
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See "First Aid Measures" and "Stability and Reactivity"

Major Water Spill

- Notify the port or relevant authority and keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Confine the spill if possible.
- Monitor spill area in consultation with relevant authority.
- Consult an expert on disposal of any recovered material and ensure conformity to local disposal regulations.
- See "First Aid Measures" and "Stability and Reactivity".

7. HANDLING AND STORAGE**Precautions for safe handling:**

Avoid eye contact and repeated or prolonged skin contact. Avoid inhaling vapours or spray mists. Use local exhaust ventilation. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Do not dispose of material to sewers or waterways.

Conditions for safe storage:

Store in a cool place out of direct sunlight. Store away from oxidizing agents and foodstuffs. Keep containers closed at all times. Check regularly for leaks.

Incompatible materials:

None identified.

Chemical incompatibility with strong oxidising agents, strong acids and bases, perchloric acid, chromyl chloride

8. EXPOSURE CONTROLS : PERSONAL PROTECTION**Health Exposure Standards:**

The following Tolerable Exposure Limit (TEL) Workplace Exposure Standards (WES), 2002 have been set by the Occupational Safety and Health Service , NZ Department of Labour for components in this substance:

	WES-TWA (ceiling)	WES-STEL
Ethylene glycol, vapour & mist	50 ppm, 127 kg/m ³	-

Biological limit values :

None established

Engineering Controls:**Ventilation:**

Ensure ventilation is adequate to maintain air concentrations below the TWA ceiling limit. If used at elevated temperatures or as aerosol, mist or spray, use with local exhaust ventilation or while using respirator.

Personal Protective Equipment:

Respiratory Protection: Where an inhalation risk exists, wear a filter respirator suitable for organic vapours/particulates meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

Eye Protection: Always use safety glasses or a face shield when handling this product.

Skin/ Body Protection: Always wear long sleeves and long trousers or coveralls, and enclosed footwear or safety boots when handling this product. It is recommended that chemical resistant gloves, e.g. nitrile, neoprene or natural rubber, be worn when handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Unit of measurement	Typical value
Appearance	-	Clear, colourless liquid
Boiling Point/Range	°C	197
Melting Point	°C	-13
Autoignition Temperature	°C	412
Flash Point	°C	110
Density @ 20°C	g/ml	1.12
Vapour Pressure @ 25°C	kPa	0.092
Relative Vapour Density	Air = 1	2.14
Autoignition Temperature	°C	412
Explosive Limits in Air	%	3.2 – 15.3
Viscosity @ 20°C	cP	21
Volatiles	%	Nil
Solubility in Water	% w/w	Miscible

The values listed are indicative of this product's physical and chemical properties.

For a full product specification, please consult the Product Data Sheet.

10. STABILITY AND REACTIVITY

- Chemical Stability:** Stable under normal conditions of use.
- Conditions to avoid:** Excessive heat will lead to accelerated oxidative degradation.
- Hazardous decomposition products:** No decomposition products except on burning. See "Fire Fighting Measures".
- Hazardous reactions:** Strong oxidizing agents, strong alkalis, strong acids, perchloric acid, chromyl chloride

11. TOXICOLOGICAL INFORMATION**Acute Effects*****Ingestion***

Symptoms following large dose (> 100 mL) are those of alcohol intoxication (but without odour of ethanol) which progresses to vomiting, headache, stupor, convulsions and unconsciousness. Respiratory system may be affected 12 -24 hours after ingestion. Symptoms may include hyperventilation and rapid shallow breathing. From 24 to 72 hours after exposure, the patient may experience a decrease in urine output, flank pain progressing to renal failure which may be permanent. Death may occur from respiratory failure or pulmonary oedema.

Eye Contact

Eye irritant.

Skin Contact

May cause skin irritation. Prolonged or repeated exposure may cause defatting resulting in dryness or cracking of the skin (irritant contact dermatitis). Can be absorbed through skin but not readily absorbed in toxic amounts. Note symptoms described under *Ingestion* heading.

Inhalation

The inhalation of vapours (from heating), mists or spray, can produce respiratory irritation and may result in headaches, dizziness and possible nausea.

Chronic Effects

Exposure effects the central nervous system and may aggravate existing kidney disorders. Animal studies have shown that long term repeated exposure to high doses of ethylene glycol in the diet causes kidney injury.

High doses of ethylene glycol in rats and mice have resulted in reproductive and developmental toxicity following exposure by oral and inhalation (respirable aerosol) routes. However ethylene glycol is not classified as a reproductive/development toxicant according to HSNO criteria. There is no evidence of mutagenic or carcinogenic effects.

Toxicological Information:

Oral LD50 cat	1650 mg/kg
Oral LD50 rat	5890 mg/kg
Dermal LD50 rabbit	9530 mg/kg

12. ECOLOGICAL INFORMATION**Ecotoxicity:****Aquatic toxicity:**

Not identified as hazardous to aquatic organisms.

Persistence/degradability: Expected to be readily biodegradable.

Mobility: No data available.

Environmental Exposure Standards:

EEL (WATER):	Not set
EEL (SOIL)	Not set
EEL (SEDIMENTS)	Not set

13. DISPOSAL CONSIDERATIONS**Disposal Methods:**

Empty packaging should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. Care should be taken to ensure compliance with national and local authority regulations. Avoid discharge of product to sewer.

Special Precautions for Landfill or Incineration:

Suitable for disposal by either incineration or to landfill through an approved agent.

14. TRANSPORT INFORMATION

Road and Rail Transport		Marine Transport		Air Transport	
UN No.		UN No.		UN No.	
Proper Shipping Name		Proper Shipping Name		Proper Shipping Name	
DG Class		DG Class		DG Class	
Sub. Risk		Sub. Risk		Sub. Risk	
Pack Group		Pack Group		Pack Group	
Hazchem		Hazchem			

Dangerous Goods

This product is not classified as a Dangerous Goods for transport.

15. REGULATORY INFORMATION

Country/ Region: Australia, New Zealand

Inventory: AICS, NZCIL

Status: Listed

ERMA New Zealand Approval Code: HSR001534 Ethylene glycol

HSNO Controls: Codes: T1 – T5, T7, P1, P3, PI3, PG3, D4 -D8, EM1, EM6 - EM8, EM11 – EM 13, I1, I8, I9, I11, I16 - I21, I28 - I30, GN35A.

Refer to www.ermanz.govt.nz for information on Controls.

16. OTHER INFORMATION

Reasons for Issue: New product name identifier.

Abbreviations:

AICS: Australian Inventory of Chemical Substances

NZCI: New Zealand Chemical Inventory

CAS Number: Chemical Abstracts Number

IARC: International Agency for Research on Cancer

NOHSC: National Occupational Health and Safety Council

References:

Supplier Material Safety Data Sheets

Concise International Chemical Assessment Document Number 45-Ethylene Glycol. International Programme on Chemical Safety (IPCS), World Health Organization Geneva 2002. Available at: <http://www.inchem.org/documents/cicads/cicads/cicad45.htm#6.0>

IUCLID data set; Ethylene Glycol, 2000. Available at : <http://www.oecd.org/dataoecd/26/37/39199559.pdf>

Poisons Information Monograph 227 – Ethylene Glycol, International Programme on Chemical Safety (IPCS), World Health Organization, Geneva, 09/2005. Available at : <http://www.inchem.org/documents/pims/chemical/pim227.htm#10%20TREATMENT>

Sax's Dangerous Properties of Industrial Materials, Richard J. Lewis Snr., pub. Canada (2000)

The information sourced for the preparation of this document was correct and complete at the time of writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses, but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the use and storage of this type of product. For further information, please contact Australasian Solvents and Chemicals Company (NZ) Pty. Ltd.