

# Material Safety Data Sheet

## Antifreeze

Date Prepared: 11<sup>th</sup> Jan 2014

### 1. Identification of the Substance/Preparation and the Company/Undertaking

Substance or Preparation Trade Name: Antifreeze

### 2. Hazards Identification

Name	EC No.	CAS No.	Content	Classification
Ethanediol	203-473-3	107-21-1	60% – 99%	Xi, R22
Disodium tetraborate pentahydrate	215-540-4	12179-04-3	1% – 5%	Rep 2; R60, R61

### 3. Composition

Health: Harmful if swallowed

Classification: Xi, R22

### 4. First Aid Measures

**Inhalation:** Remove victim immediately from source of exposure. Place unconscious person on their side in the recovery position to ensure breathing. Seek immediate medical attention.

**Ingestion:** Do not induce vomiting. If conscious try to drink plenty of water, do not give water if unconscious. Seek immediate medical attention.

**Skin Contact:** Remove contaminated clothing. Wash the skin with soap and water. Get medical attention if discomfort persists.

**Eye Contact:** Ensure contact lenses are removed before rinsing. Wash eyes with plenty of water while lifting the eye lids and continue for 15 minutes. Get medical attention if discomfort persists.

### 5. Fire Fighting Measures

**Extinguishing Media:** Stop flow of material to fire. Extinguish using water fog / water mist, alcohol-resistant Foam, Dry powder, Carbon Dioxide, Dolomite, Sand or Earth

**Special Fire Fighting Procedures:** Avoid breathing fire vapours. If possible use self-contained breathing equipment. Use water to keep fire exposed containers cool and to disperse vapours. Keep run-off water out of sewers and water sources. Dike for water control.

### 6. Accidental Release Measures

**Environmental Precautions:** Protect drains by covering to avoid any spillage entering the drainage system. If any contamination of the drainage system occurs inform the local authorities, Fire Brigade and Environment Agency.

**Spillages:** Stop leak at source if possible without risk. Extinguish all ignition sources; avoid sparks, flames, heat and smoking. Ventilate. Wear protective clothing and equipment.

**Absorbent Materials:** May be used to collect spillage, and removed into plastic

**Disposal of Spillage Waste:** containers for proper disposal  
Consult local authority regulations or waste disposal experts if in doubt

## 7. Handling and Storage

**Handling:** Do not use in confined spaces without adequate ventilation. Avoid breathing vapours. Eliminate all sources of ignition; keep away from heat, sparks and naked flame. Avoid acids, moisture and combustible materials

**Storage:** Store in tightly sealed original containers in a cool, dry and well ventilated location. Avoid exposure to heat and/or direct sunlight and ignition sources.

## 8. Exposure Controls / Personal Protection

Name	Std	TWA – 8 hrs	STEL – 15 min	Notes
Ethenediol	WEL	52 mg.m <sup>-3</sup> (Sk)	104 mg.m <sup>-3</sup> (Sk)	
Antifreeze	WEL	60 mg.m <sup>-3</sup>	125 mg.m <sup>-3</sup>	

WEL = Workplace Exposure Limit

**Protective Measures:** Must not be handled in confined spaces without sufficient ventilation.

**Hand Protection:** Wear chemical resistant gloves made from impermeable material.

**Eye Protection:** Wear approved safety goggles or safety glasses.

**Hygiene Measures:** Wash with soap and water if skin becomes contaminated, and on completion of work, using the toilet and/or before eating.

## 9. Physical and Chemical Properties

**Physical State:** Blue, clear hygroscopic, slightly viscous liquid

**Odour:** Essentially odourless

**Solubility:** Miscible in water. Miscible with acetone and alcohol

**Boiling Point:** 165°C at 760 mmHg

**Melting Point:** -12°C

**Relative Density:** 1.13 g/ml at 20°C

**Vapour Pressure:** 0.05 kPa at 20°C

**Vapour Density:** 2.14 (Air = 1.00)

**Viscosity:** 21 cP at 20°C

**Flash Point:** 111°C (COC)

**Auto Ignition Temperature:** 400°C

**Flammability Limit - Lower:** 3.2

## 10. Stability and Reactivity

**Stability:** No particular stability concerns. Avoid heat, sparks, flames and moisture.

**Reactivity:** Materials to avoid – Acids, Oxidising substances, Sulphuric acid, Oleum, Phosphorus pentasulphide, Chlorosulphonic acid.

## 11. Toxicological Information

**Toxic Dose 1 – LD 50:** 5890 – 13400 mg/kg (oral rat)

<b>Toxicological Information:</b>	Toxicological information on major component only, (ethanediol)
<b>General Information:</b>	NOAEL – Rabbit > 3549 mg/kg
<b>Ingestion:</b>	Harmful if swallowed

## 12. Ecological Information

<b>Ecotoxicity:</b>	Not regarded as dangerous for the environment
<b>LC 50, 96 hrs, FISH, mg/l:</b>	22810 (rainbow trout)
<b>EC 50, 48 hrs, DAPHNIA, mg/l:</b>	41000
<b>Bioaccumulation:</b>	The product is not bioaccumulating
<b>Degradability:</b>	The product is expected to be biodegradable

## 13. Disposal Considerations

This material may be disposed of via an authorised waste/disposal company in accordance with Local and/or National Waste Disposal regulations

<b>Waste Classification:</b>	Waste Code: 07 01 04
	Waste Code 13.02.05

## 14. Transport Information

<b>Sea Transport Notes:</b>	Marpol 73/78 IBC Code Chapter 17: proper shipping name – ethylene glycol
<b>UN No. Road:</b>	None
<b>UK Road Pack Group:</b>	None
<b>ADR Class</b>	Not classified for transportation
<b>ADR Pack Group:</b>	None
<b>ADR Hazard Group:</b>	Not relevant
<b>CEFIC TEC(R) No.:</b>	None
<b>IMDG Class</b>	None
<b>EMS:</b>	None
<b>Marine Pollutant:</b>	N/A
<b>Air Class:</b>	None

## 15. Regulatory Information

### Labelling:



### Contains:

### Risk Phrases:

### Safety Phrases:

Harmful

ETHANEDIOL

R 22 – Harmful if swallowed

S2: Keep out of reach of children

S13: Keep away from food, drink and animal feeding stuffs

S46: If swallowed seek medical advice immediately and show container or label

S24/25: Avoid contact with skin and eyes

S56: Dispose of this material and its container to hazardous or special waste collection point.

### UK Regulatory References:

The Control of Substances Hazardous to Health Regulations, 1988

Health & Safety at Work Act, 1974

The Chemical Hazard Information and packaging for Supply Regulations, 1993 amended, 2002

Health & Safety (First Aid) Regulations, 1981

### EU Directives:

Dangerous Substances Directive, 67/548/EEC

Dangerous Preparations Directive, 1999/45/EC

### Statutory Instruments:

Chemicals (Hazard Information and packaging) Regulations

Control of Substances hazardous to Health

### Approved Code of Practice:

Classification and Labelling of Substances and preparations Dangerous for Supply

### Guidance Notes:

Workplace exposure Limits, EH40

## 16. Other Information

### Information Sources:

Dangerous Properties of Industrial Chemicals, 7 ed., Sax & Lewis, 1988. Fire and Related Properties of Industrial Chemicals, Fire Protection Association

### Risk Phrases in full

R22: Harmful if swallowed

R61: May cause harm to the unborn child

R60: May impair fertility

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