

SAFETY DATA SHEET

ANTIFREEZE (PROPYLENE GLYCOL)

According to Regulation (EC) No 1907/2006, Annex II, as amended by Regulation (EU) No 453/2010

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

| | |
|---------------------------|-------------------------------|
| Product name | ANTIFREEZE (PROPYLENE GLYCOL) |
| Product number | 2817 |
| REACH registration number | 01-2119456809-23-0000 |
| CAS number | 57-55-6 |
| EC number | 200-338-0 |

1.2. Relevant identified uses of the substance or mixture and uses advised against

| | |
|----------------------|--|
| Identified uses | Laboratory reagent. Antifreeze liquid. Coolant |
| Uses advised against | Formation of mists or fog. |

1.3. Details of the supplier of the safety data sheet

Supplier

Reagent Chemical Services
18 Aston Fields Road
Whitehouse Industrial Estate
Runcorn
Cheshire WA7 3DL

T: 01928 716903 (08.30 - 17.00)
F: 01928 716425
E: info@reagent.co.uk

Contact person E: info@reagent.co.uk

1.4. Emergency telephone number

Emergency telephone OHES Environmental Ltd 24-7
Tel. 0333 333 9939 (24 hour)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

| | |
|-----------------------|----------------|
| Physical hazards | Not Classified |
| Health hazards | Not Classified |
| Environmental hazards | Not Classified |

2.2. Label elements

| | |
|-------------------|-------------------|
| EC number | 200-338-0 |
| Hazard statements | NC Not Classified |

2.3. Other hazards

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This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

| | |
|---|---|
| PROPYLENE GLYCOL | 60-100% |
| CAS number: 57-55-6 | EC number: 200-338-0 |
| Classification Not Classified | Classification (67/548/EEC or 1999/45/EC) - |

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|-----------------------------------|--|
| General information | Get medical attention if any discomfort continues. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Never give anything by mouth to an unconscious person. Show this Safety Data Sheet to the medical personnel. |
| Inhalation | Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. |
| Ingestion | Rinse mouth thoroughly with water. Remove any dentures. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. |
| Skin contact | Remove affected person from source of contamination. Rinse immediately with plenty of water. |
| Eye contact | Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Continue to rinse for at least 10 minutes. |
| Protection of first aiders | First aid personnel should wear appropriate protective equipment during any rescue. |

4.2. Most important symptoms and effects, both acute and delayed

| | |
|----------------------------|--|
| General information | See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure. |
| Inhalation | Vapours may irritate throat/respiratory system. Prolonged inhalation of high concentrations may damage respiratory system. |
| Ingestion | Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation. |
| Skin contact | Prolonged contact may cause dryness of the skin. |
| Eye contact | May cause temporary eye irritation. |

4.3. Indication of any immediate medical attention and special treatment needed

| | |
|-----------------------------|--------------------------------|
| Notes for the doctor | Treat symptomatically. |
| Specific treatments | No special treatment required. |

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|-------------------------------------|--|
| Suitable extinguishing media | The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire. |
|-------------------------------------|--|

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Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Oxides of carbon.

5.3. Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage.

6.2. Environmental precautions

Environmental precautions Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Reuse or recycle products wherever possible. Approach the spillage from upwind. Small Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. The requirements of the local water authority must be complied with if contaminated water is flushed directly to the sewer. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists.

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Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store away from incompatible materials (see Section 10). Store in accordance with local regulations.

Storage class Chemical storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

Long-term exposure limit (8-hour TWA): WEL 150 ppm 474 mg/m³ total vapour and particulates

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Long-term exposure limit (8-hour TWA): WEL 150 ppm 474 mg/m³

WEL = Workplace Exposure Limit

Biological limit values No information available, No information available, No information available

DNEL

Workers - Inhalation; Long term systemic effects: 168 mg/m³
 Workers - Inhalation; Long term local effects: 10 mg/m³
 General population - Inhalation; Long term systemic effects: 50 mg/m³
 General population - Inhalation; Long term local effects: 10 mg/m³

PNEC

- Fresh water; 260 mg/l
 - Marine water; 26 mg/l
 - STP; 20,000 mg/l
 - Sediment (Freshwater); 572 mg/kg
 - Sediment (Marinewater); 57.2 mg/kg
 - Soil; 50 mg/kg

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Good general ventilation should be adequate to control worker exposure to airborne contaminants.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. The following protection should be worn: Chemical splash goggles.

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| Hand protection | Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended. Wear protective gloves made of the following material: Butyl rubber. Nitrile rubber. The selected gloves should have a breakthrough time of at least 4 hours. Thickness: ≥ 0.2 mm The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. |
| Other skin and body protection | Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible. |
| Hygiene measures | Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. |
| Respiratory protection | Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Provide adequate ventilation. Large Spillages: If ventilation is inadequate, suitable respiratory protection must be worn. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140. Particulate filters should comply with European Standard EN143. |
| Environmental exposure controls | Not regarded as dangerous for the environment. |

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

| | |
|---|-----------------------------------|
| Appearance | Liquid. |
| Colour | Colourless. |
| Odour | Odourless. |
| Odour threshold | No information available. |
| pH | Not determined. |
| Melting point | $< -20^{\circ}\text{C}$ |
| Initial boiling point and range | 184°C @ 760 mm Hg |
| Flash point | 104°C |
| Evaporation rate | Not determined. |
| Flammability (solid, gas) | No. |
| Upper/lower flammability or explosive limits | Not applicable. |
| Vapour pressure | 20 Pa @ 25°C |
| Vapour density | Not determined. |
| Relative density | 1.03 @ 20°C |

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| | |
|---|---|
| Bulk density | Not applicable. Only applicable to solids. |
| Solubility(ies) | Miscible with water. |
| Partition coefficient | log Pow: -1.07 |
| Auto-ignition temperature | >400 @ 100.1kPa°C |
| Decomposition Temperature | No information available. |
| Viscosity | 43.4 mPa s @ 25°C |
| Explosive properties | Not considered to be explosive. |
| Explosive under the influence of a flame | No |
| Oxidising properties | Does not meet the criteria for classification as oxidising. |

9.2. Other information

Other information None.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity The following materials may react with the product: Acids. Oxidising agents.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions May generate heat.

10.4. Conditions to avoid

Conditions to avoid Avoid heat.

10.5. Incompatible materials

Materials to avoid Acids. Oxidising agents. May be incompatible with some plastics, consult with the manufacturer before transferring to another container.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects Not regarded as a health hazard under current legislation.

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 22,000.0

Species Rat

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - dermal

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| | |
|--|---|
| Acute toxicity dermal (LD₅₀ mg/kg) | 2,000.0 |
| Species | Rat |
| Notes (dermal LD₅₀) | Based on available data the classification criteria are not met. |
| <u>Acute toxicity - inhalation</u> | |
| Notes (inhalation LC₅₀) | LC50 317042 mg/m ³ , Inhalation, Rabbit Based on available data the classification criteria are not met. |
| <u>Skin corrosion/irritation</u> | |
| Animal data | Based on available data the classification criteria are not met. |
| Human skin model test | No information available. |
| <u>Serious eye damage/irritation</u> | |
| Serious eye damage/irritation | Based on available data the classification criteria are not met. |
| <u>Respiratory sensitisation</u> | |
| Respiratory sensitisation | Based on available data the classification criteria are not met. |
| <u>Skin sensitisation</u> | |
| Skin sensitisation | Based on available data the classification criteria are not met. |
| <u>Germ cell mutagenicity</u> | |
| Genotoxicity - in vitro | Based on available data the classification criteria are not met. |
| Genotoxicity - in vivo | Chromosome aberration: Negative. |
| <u>Carcinogenicity</u> | |
| Carcinogenicity | Based on available data the classification criteria are not met. |
| IARC carcinogenicity | None of the ingredients are listed or exempt. |
| <u>Reproductive toxicity</u> | |
| Reproductive toxicity - fertility | Based on available data the classification criteria are not met. |
| Reproductive toxicity - development | Based on available data the classification criteria are not met. |
| <u>Specific target organ toxicity - single exposure</u> | |
| STOT - single exposure | Not classified as a specific target organ toxicant after a single exposure. |
| <u>Specific target organ toxicity - repeated exposure</u> | |
| STOT - repeated exposure | Not classified as a specific target organ toxicant after repeated exposure. |
| <u>Aspiration hazard</u> | |
| Aspiration hazard | Based on available data the classification criteria are not met. |
| <u>General information</u> | |
| Inhalation | The severity of the symptoms described will vary dependent on the concentration and the length of exposure. Vapours may irritate throat/respiratory system. Prolonged inhalation of high concentrations may damage respiratory system. |
| Ingestion | Gastrointestinal symptoms, including upset stomach. |
| Skin contact | Prolonged contact may cause dryness of the skin. |
| Eye contact | May cause temporary eye irritation. |

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Route of entry Ingestion Inhalation Skin and/or eye contact

Target organs No specific target organs known.

SECTION 12: Ecological Information

Ecotoxicity Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Toxicity Based on available data the classification criteria are not met.

Acute toxicity - fish LC50, 96 hours: 40613 mg/l, *Onchorhynchus mykiss* (Rainbow trout)

Acute toxicity - aquatic invertebrates LC₅₀, 48 hours: 18340 mg/l, Freshwater invertebrates

Acute toxicity - microorganisms NOEC, 18 hours: > 20000 mg/l, *Pseudomonas putida*

Chronic toxicity - aquatic invertebrates NOEC, 7 days: 13020 mg/l, Freshwater invertebrates

12.2. Persistence and degradability

Persistence and degradability The product is readily biodegradable.

Phototransformation Air - Half-life : 0.83 days

Stability (hydrolysis) Not available.

Biodegradation The substance is readily biodegradable.

Biological oxygen demand No information available.

Chemical oxygen demand No information available.

12.3. Bioaccumulative potential

Bioaccumulative potential Bioaccumulation is unlikely. BCF: 0.09,

Partition coefficient log Pow: -1.07

12.4. Mobility in soil

Mobility The product is water-soluble and may spread in water systems. The product is non-volatile.

Adsorption/desorption coefficient - K_{oc}: 2.9 @ 20°C

Henry's law constant 0.006 Pa m³/mol @ 12°C

Surface tension 71.6 mN/m @ 21.5°C

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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| | |
|----------------------------|---|
| General information | The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. |
| Disposal methods | Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. |

SECTION 14: Transport information

| | |
|----------------|--|
| General | The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID). |
|----------------|--|

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not classified.

Transport labels

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

| | |
|-----------------------------|---|
| National regulations | Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits. |
|-----------------------------|---|

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| | |
|-----------------------|--|
| EU legislation | Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). |
| Guidance | Workplace Exposure Limits EH40. ECHA Guidance on the Compilation of Safety Datasheets |

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

None of the ingredients are listed or exempt.

SECTION 16: Other information

| | |
|---|---|
| Abbreviations and acronyms used in the safety data sheet | ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. IATA: International Air Transport Association. ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air. IMDG: International Maritime Dangerous Goods. CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate. LC ₅₀ : Lethal Concentration to 50 % of a test population. LD ₅₀ : Lethal Dose to 50% of a test population (Median Lethal Dose). EC ₅₀ : 50% of maximal Effective Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative. |
| General information | This datasheet is not intended to be a replacement for a full risk assessment, these should always be carried out by competent persons. |
| Key literature references and sources for data | Source: European Chemicals Agency, http://echa.europa.eu/ Raw material safety data sheets. |
| Training advice | Read and follow manufacturer's recommendations. Only trained personnel should use this material. |
| Revision comments | Full revision |
| Revision date | 06/02/2018 |
| Revision | 2 |
| Supersedes date | 26/03/2013 |
| SDS number | 11845 |
| SDS status | Approved. |

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This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.