



SAFETY DATA SHEET

POLYGARD DE-ICER CONCENTRATE (-20°C)

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

1.1. Product identifier

Product name	POLYGARD DE-ICER CONCENTRATE (-20°C)
Product number	17200, 17203
Internal identification	B17901

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

Identified uses	Automotive glass de-icer.
Uses advised against	This product is not recommended for any industrial, professional or consumer use other than the identified uses stated above.

1.3. Details of the supplier of the safety data sheet

Supplier	Miswa Chemicals Ltd Caswell Road Brackmills Northampton England NN4 7PW T: +44 (0)1604 701111 F: +44 (0)1604 701120 SDSAdmin@miswa.com
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1.4. Emergency telephone number

Emergency telephone	Tel.: +44 (0)1604 701111 (Miswa Office Hours Monday - Friday (0900Hrs - 1700Hrs))
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Flam. Liq. 3 - H226
Health hazards	Eye Irrit. 2 - H319
Environmental hazards	Not Classified

Human health Vapours and spray/mists in high concentrations are narcotic. Symptoms following overexposure may include the following: Headache. Fatigue. Dizziness. Nausea, vomiting.

Environmental The product is not expected to be hazardous to the environment.

Physicochemical The product is flammable. Heating may generate flammable vapours.

2.2. Label elements

POLYGARD DE-ICER CONCENTRATE (-20°C)

Pictogram



Signal word

Warning

Hazard statements

H226 Flammable liquid and vapour.

H319 Causes serious eye irritation.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof electrical equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P264 Wash contaminated skin thoroughly after handling.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/ attention.

P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/ container in accordance with national regulations.

P102 Keep out of reach of children.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

PROPAN-2-OL			10-30%
CAS number: 67-63-0	EC number: 200-661-7	REACH registration number: 01-2119457558-25-XXXX	
Classification			
Flam. Liq. 2 - H225			
Eye Irrit. 2 - H319			
STOT SE 3 - H336			
ETHANOL			5-10%
CAS number: 64-17-5	EC number: 200-578-6	REACH registration number: 01-2119457610-43-XXXX	
Classification			
Flam. Liq. 2 - H225			
Eye Irrit. 2 - H319			

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ETHANEDIOL		5-10%
CAS number: 107-21-1	EC number: 203-473-3	REACH registration number: 01-2119456816-28-XXXX
Classification		
Acute Tox. 4 - H302		
STOT RE 2 - H373		
METHANOL		<0.6%
CAS number: 67-56-1	EC number: 200-659-6	REACH registration number: 01-2119433307-44-XXXX
Classification		
Flam. Liq. 2 - H225		
Acute Tox. 3 - H301		
Acute Tox. 3 - H311		
Acute Tox. 3 - H331		
STOT SE 1 - H370		

The full text for all hazard statements is displayed in Section 16.

Composition comments The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Never give anything by mouth to an unconscious person. Get medical attention if any discomfort continues.
Inhalation	Place unconscious person on their side in the recovery position and ensure breathing can take place. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water. Give plenty of water to drink. Give milk instead of water if readily available. Keep affected person under observation. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.
Skin contact	Immediately remove contaminated clothing. Rinse immediately with plenty of water. Remove contaminated clothing.
Eye contact	Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention promptly if symptoms occur after washing.

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

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	This is unlikely to occur but symptoms similar to those of ingestion may develop. In case of overexposure, organic solvents may depress the central nervous system causing dizziness and intoxication, and at very high concentrations unconsciousness and death.
Ingestion	May cause unconsciousness, blindness and possibly death.
Skin contact	Skin irritation.

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Eye contact May cause blurred vision and serious eye damage.

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

Notes for the doctor No specific recommendations. If in doubt, get medical attention promptly.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with the following media: Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemicals, sand, dolomite etc. Do not use water, if avoidable.

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

Specific hazards The product is flammable. Heating may generate flammable vapours. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

Hazardous combustion products Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapours. Control run-off water by containing and keeping it out of sewers and watercourses.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation. Keep combustible materials away from spillage. Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Absorb in vermiculite, dry sand or earth and place into containers. Wash thoroughly after dealing with a spillage. Flush contaminated area with plenty of water. Take care as floors and other surfaces may become slippery.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Keep away from heat, sparks and open flame. Do not wear contact lenses. Avoid spilling. Eye wash facilities and emergency shower must be available when handling this product. During application and drying, solvent vapours will be emitted. Avoid contact with skin and eyes.

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7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry and cool place. Store under well-ventilated conditions at a temperature below 25°C.

Storage class Flammable liquid 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

PROPAN-2-OL

Long-term exposure limit (8-hour TWA): WEL 400 ppm 999 mg/m³

Short-term exposure limit (15-minute): WEL 500 ppm 1250 mg/m³

ETHANOL

Long-term exposure limit (8-hour TWA): WEL 1000 ppm 1920 mg/m³

ETHANEDIOL

Long-term exposure limit (8-hour TWA): WEL 52 mg/m³ 20 ppm

Short-term exposure limit (15-minute): WEL 104 mg/m³ 40 ppm vapour

Sk

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ particulate

METHANOL

Long-term exposure limit (8-hour TWA): WEL 200 ppm 266 mg/m³

Short-term exposure limit (15-minute): WEL 250 ppm 333 mg/m³

Long-term exposure limit (8-hour TWA): 2006/15/EC 200 ppm 260 mg/m³

Sk

WEL = Workplace Exposure Limit

Sk = Can be absorbed through skin.

Sk = Can be absorbed through the skin.

Ingredient comments WEL = Workplace Exposure Limits

PROPAN-2-OL (CAS: 67-63-0)

DNEL

Industry - Inhalation; Long term systemic effects: 500 mg/m³

Consumer - Dermal; Long term systemic effects: 319 mg/kg/day

Consumer - Oral; Long term systemic effects: 26 mg/kg/day

Consumer - Inhalation; Long term systemic effects: 89 mg/m³

Industry - Dermal; Long term systemic effects: 888 mg/kg/day

PNEC

- Fresh water; 140.9 mg/l

- Marine water; 140.9 mg/l

- Intermittent release; 140.9 mg/l

- Sediment (Freshwater); 552 mg/kg

- Sediment (Marinewater); 552 mg/kg

- STP; 2251 mg/l

- Soil; 28 mg/kg

ETHANOL (CAS: 64-17-5)

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DNEL

Workers - Dermal; Long term systemic effects: 343 mg/kg
 Workers - Inhalation; Long term systemic effects: 950 mg/m³
 Workers - Inhalation; Short term Acute, local effects: 1900 mg/m³
 Consumer - Inhalation; Short term Acute, local effects: 950 mg/m³
 Consumer - Dermal; Long term systemic effects: 206 mg/kg
 Consumer - Inhalation; Long term systemic effects: 114 mg/m³
 Consumer - Oral; Long term systemic effects: 87 mg/kg

PNEC

- Fresh water; 0.96 mg/l
- Marine water; 0.79 mg/l
- STP; 580 mg/l
- Intermittent release; 2.75 mg/l
- Sediment (Freshwater); 3.6 mg/kg sediment dw
- Sediment (Marinewater); 2.9 mg/kg sediment dw
- Soil; 0.63 mg/kg soil dw

ETHANEDIOL (CAS: 107-21-1)

DNEL

Industry - Dermal; Long term systemic effects: 106 mg/kg bw/day
 Industry - Inhalation; Long term local effects: 35 mg/m³
 Consumer - Dermal; Long term systemic effects: 53 mg/kg bw/day
 Consumer - Inhalation; Long term local effects: 7 mg/m³

PNEC

- Fresh water; 10 mg/l
- Marine water; 1 mg/l
- Sediment (Freshwater); 37 mg/kg sediment dw
- Intermittent release; 10 mg/l
- Soil; 1.53 mg/kg
- STP; 199.5 mg/l
- Sediment (Marinewater); 3.7 mg/kg sediment dw
- Soil; 1.53 mg/kg soil dw

METHANOL (CAS: 67-56-1)

DNEL

Industry - Dermal; Short term Acute: 40 mg/kg bw/day
 Industry - Dermal; Long term systemic effects: 40 mg/kg bw/day
 Industry - Inhalation; Short term Acute: 260 mg/m³
 Industry - Inhalation; Long term systemic effects: 260 mg/m³
 Consumer - Dermal; Short term Acute: 8 mg/kg bw/day
 Consumer - Dermal; Long term systemic effects: 8 mg/kg bw/day
 Consumer - Inhalation; Long term systemic effects: 50 mg/m³
 Industry - Inhalation; Short term Acute: 260 mg/m³
 Industry - Inhalation; Long term local effects: 260 mg/m³
 Consumer - Inhalation; Short term Acute: 50 mg/m³
 Consumer - Inhalation; Long term local effects: 50 mg/m³

PNEC

- Fresh water; 20.8 mg/l
- Marine water; 2.08 mg/l
- Soil; 3.18 mg/kg soil dw
- STP; 100 mg/l
- Sediment (Freshwater); 77 mg/kg sediment dw
- Intermittent release; 1540 mg/l
- Sediment (Marinewater); 7.7 mg/kg sediment dw

BENZYL VIOLET 4B (CAS: 1694-09-3)

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DNEL No DNEL available.

PNEC No PNEC available.

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Contact lenses should not be worn when working with this chemical. The following protection should be worn: Chemical splash goggles.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. In case of intensive contact, wear protective gloves (EN 374). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. protective gloves shall be replaced immediately when physically damaged or worn. Appropriate Material - Butyl, Material Thickness - 0.6 to 0.8mm, Breakthrough Time - 8Hrs

Other skin and body protection

Use engineering controls to reduce air contamination to permissible exposure level. Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact. Provide eyewash station and safety shower. Use appropriate skin cream to prevent drying of skin. Barrier cream applied before work may make it easier to clean the skin after exposure, but does not prevent absorption through the skin.

Hygiene measures

Provide eyewash station. Wash promptly if skin becomes contaminated. Promptly remove non-impervious clothing that becomes contaminated. Do not eat, drink or smoke when using this product.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Gas filter, type A2.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Clear liquid.
Colour	Blue.
Odour	Slight alcoholic.
pH	pH (concentrated solution): 10
Melting point	Below minus 20°C
Initial boiling point and range	~88°C @ 760 mm Hg
Flash point	30°C Closed cup.
Relative density	0.977 @ 20°C
Solubility(ies)	Completely soluble in water. Very soluble in the following materials: Alcohols.

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9.2. Other information

Volatile organic compound This product contains a maximum VOC content of 327 g/litre.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability No particular stability concerns. Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Not applicable. Will not polymerise.

10.4. Conditions to avoid

Conditions to avoid Avoid heat, flames and other sources of ignition. Avoid contact with the following materials: Acids. Oxidising agents.

10.5. Incompatible materials

Materials to avoid Strong acids. Strong alkalis. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 5,555.56

Acute toxicity - dermal

ATE dermal (mg/kg) 166,666.67

Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 1,666.67

General information

To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated.

Inhalation

Gas or vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Coughing.

Ingestion

Gastrointestinal symptoms, including upset stomach.

Skin contact

Repeated exposure may cause skin dryness or cracking.

Eye contact

Irritating to eyes. Symptoms following overexposure may include the following: Redness. Pain.

Acute and chronic health hazards

Not expected to be a health hazard when used under normal conditions.

Route of exposure

Inhalation Skin absorption Ingestion. Skin and/or eye contact

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Target organs Central nervous system Eyes Gastro-intestinal tract Kidneys Liver Respiratory system, lungs
Blood

Medical symptoms Irritation of eyes and mucous membranes. Central nervous system depression. Drowsiness, dizziness, disorientation, vertigo. Visual disturbances, including blurred vision.

Toxicological information on ingredients.

PROPAN-2-OL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,840.0

Species Rat Rat

Notes (oral LD₅₀)

ATE oral (mg/kg) 5,840.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 16.4

Species Rabbit Rabbit

ATE dermal (mg/kg) 12,874.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 25.5

Species Rat

ATE inhalation (vapours mg/l) 25.5

Skin corrosion/irritation

Animal data Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation Rabbit eyes: Severe eye irritation.

Respiratory sensitisation

Respiratory sensitisation Not available.

Skin sensitisation

Skin sensitisation Not considered to be a skin sensitizer

Germ cell mutagenicity

Genotoxicity - in vitro Negative.

Genotoxicity - in vivo Negative.

Reproductive toxicity

Reproductive toxicity - fertility Does not interfere with fertility.

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Reproductive toxicity - development No evidence of reproductive toxicity in animal studies.

Specific target organ toxicity - single exposure

STOT - single exposure Inhalation: May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Oral and inhalation repeated exposure studies demonstrated target organ effects in male rats (kidney) and male/female mice (thyroid) by mechanisms of action that are not relevant to humans. Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Aspiration hazard if swallowed. The fluid can enter the lungs and cause damage (chemical pneumonitis, possibly fatal).

Inhalation Drowsiness, dizziness, disorientation, vertigo.

Ingestion No specific health hazards known.

Skin contact No specific health hazards known.

Eye contact Irritating to eyes. Splashes in eyes may cause strong pain. Vapour acts as irritant.

Acute and chronic health hazards Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.

ETHANOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 7,060.0

Species Rat

ATE oral (mg/kg) 7,060.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,001.0

Species Rabbit

ATE dermal (mg/kg) 2,001.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 124.7

Species Rat

ATE inhalation (vapours mg/l) 124.7

Skin corrosion/irritation

Animal data Not irritating.

Serious eye damage/irritation

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Serious eye damage/irritation	Irritating to eyes: Category 2.
<u>Skin sensitisation</u>	
Skin sensitisation	Not sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Based on available data the classification criteria are not met.
Genotoxicity - in vivo	Based on available data the classification criteria are not met.
<u>Carcinogenicity</u>	
Carcinogenicity	Based on available data the classification criteria are not met.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Data lacking.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Data lacking.
<u>Aspiration hazard</u>	
Aspiration hazard	No data available.
<u>Ingestion</u>	
Ingestion	After absorption: euphoria. After a latency period: dizziness, inebriation, paralysis, cyanosis, narcosis, respiratory paralysis.

ETHANEDIOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 7,712.0

Species Rat

Notes (oral LD₅₀) Acute oral toxicity is expected to be moderate in humans even though animals test results would suggest a low toxicity. Ingestion of approximately 100ml has caused death in humans. Ingestion may cause nausea, vomiting, abdominal discomfort or diarrhea. Excessive exposure may cause central nervous system effects, cardiopulmonary effects and kidney failure.

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 3,501.0

Species Mouse

ATE dermal (mg/kg) 3,501.0

Acute toxicity - inhalation

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Acute toxicity inhalation (LC₅₀ vapours mg/l)	2.6
Species	Rat
Notes (inhalation LC₅₀)	At room temperature exposure to vapour is minimal due to low volatility. With good ventilation single exposure is not expected to cause adverse effect. If the product is heated or the working area has poor ventilation, vapour/mist may accumulate and cause respiratory irritation and symptoms such as headache and nausea.
<u>Skin corrosion/irritation</u>	
Animal data	Not irritating. Rabbit
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Not irritating. Rabbit
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Guinea pig: Not sensitising.
<u>Skin sensitisation</u>	
Skin sensitisation	- Guinea pig: Not sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Negative.
Genotoxicity - in vivo	Negative.
<u>Carcinogenicity</u>	
Carcinogenicity	The current toxicological knowledge allows to not classify the product as a carcinogen.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Ingestion of large amounts has been shown to interfere with reproduction in animals.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Observations in humans include: Nystagmus (involuntary eye movement). In animals effects have been reported on the following organs: kidneys and liver. NOAEL 150 mg/kg/day, Oral, Rat
Target organs	Kidneys
<u>Inhalation</u>	
Inhalation	At room temperature, exposure to vapor is minimal due to low volatility. With good ventilation, single exposure is not expected to cause adverse effects. If material is heated or areas are poorly ventilated, vapor/mist may accumulate and cause respiratory irritation and symptoms such as headache and nausea.
<u>Ingestion</u>	
Ingestion	Oral toxicity is expected to be moderate in humans due to ethylene glycol even though tests with animals show a lower degree of toxicity. Ingestion of quantities (approximately 65 mL (2 oz.) for diethylene glycol or 100 mL (3 oz.) for ethylene glycol) has caused death in humans. May cause nausea and vomiting. May cause abdominal discomfort or diarrhea. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure. For Ethylene glycol: Lethal Dose, Human, adult 100 ml LD50, rat, male and female 7,712 mg/kg.

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Skin contact	Prolonged skin contact is unlikely to result in absorption of harmful amounts. Repeated skin exposure to large quantities may result in absorption of harmful amounts. Massive contact with damaged skin or of material sufficiently hot to burn skin may result in absorption of potentially lethal amounts.
Eye contact	May cause temporary eye irritation.
Route of exposure	Ingestion.
Target organs	Kidneys Liver

SECTION 12: Ecological Information

Ecotoxicity The product is not expected to be hazardous to the environment. The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Ecological information on ingredients.

PROPAN-2-OL

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 9640 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 24 hours: 9714 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: > 1000 mg/l, Scenedesmus subspicatus
Acute toxicity - microorganisms	EC ₅₀ , : > 1000 mg/l, Activated sludge

ETHANOL

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 15300 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 9268 - 14221 mg/l, Daphnia magna
Acute toxicity - aquatic plants	LOEC, 192 hours: 5000 mg/l, Scenedesmus subspicatus
Acute toxicity - microorganisms	LOEC, : 6500 (16hr) mg/l,

ETHANEDIOL

Toxicity Product not classified as dangerous to aquatic organisms.

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 72860 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: > 100 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 96 hours: 6500 - 13000 mg/l, Selenastrum capricornutum

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Acute toxicity - microorganisms EC20, 30 minutes: > 1995 mg/l, Activated sludge

Chronic aquatic toxicity

Chronic toxicity - fish early life stage NOEC, 7 days: 15380 mg/l, Pimephales promelas (Fat-head Minnow)

Chronic toxicity - aquatic invertebrates NOEC, 7 days: 8590 mg/l, Ceriodaphnia Sp.

12.2. Persistence and degradability

Persistence and degradability The surfactant(s) contained in this product complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them at their direct request, or at the request of a detergent manufacturer. The product is biodegradable but it must not be discharged into drains without permission from the authorities.

Ecological information on ingredients.

PROPAN-2-OL

Persistence and degradability The product is expected to be biodegradable.

Biodegradation Water - Degradation (%) 95%: 21 days

ETHANOL

Persistence and degradability The product is biodegradable.

ETHANEDIOL

Persistence and degradability The product is biodegradable.

Biodegradation Water - Degradation (%) 90 - 100%: 10 days
Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% biodegradation in OECD test(s) for inherent biodegradability).

12.3. Bioaccumulative potential

Bioaccumulative potential The product does not contain any substances expected to be bioaccumulating.

Ecological information on ingredients.

PROPAN-2-OL

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient log Pow: 0.05

ETHANOL

Partition coefficient log Pow: < 2

ETHANEDIOL

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Bioaccumulative potential Not potentially bioaccumulative

Partition coefficient log Pow: -1.36

12.4. Mobility in soil

Mobility The product is soluble in water.

Ecological information on ingredients.

PROPAN-2-OL

Mobility The product is soluble in water.

Adsorption/desorption coefficient Water - Koc: ~ 1.1 @ °C

Henry's law constant 0.00000338 atm m³/mol @ 25°C

ETHANEDIOL

Mobility The product is soluble in water. Volatilization from natural bodies of water or moist soil is not expected to be an important fate process. Potential for mobility in soil is very high.

Adsorption/desorption coefficient Water - Koc: ~ 1 @ °C

Henry's law constant ~ 8.05E-09 atm m³/mol @ 25°C

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

PROPAN-2-OL

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

ETHANEDIOL

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste should be treated as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. The packaging must be empty (drop-free when inverted).

Disposal methods Absorb in vermiculite, dry sand or earth and place into containers. Dispose of waste via a licensed waste disposal contractor. Containers should be thoroughly emptied before disposal because of the risk of an explosion.

SECTION 14: Transport information

POLYGARD DE-ICER CONCENTRATE (-20°C)

14.1. UN number

UN No. (ADR/RID)	1987
UN No. (IMDG)	1987
UN No. (ICAO)	1987
UN No. (ADN)	1987

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	ALCOHOLS, N.O.S. (CONTAINS ETHANOL, PROPAN-2-OL)
Proper shipping name (IMDG)	ALCOHOLS, N.O.S. (CONTAINS ETHANOL, PROPAN-2-OL)
Proper shipping name (ICAO)	ALCOHOLS, N.O.S. (CONTAINS ETHANOL, PROPAN-2-OL)
Proper shipping name (ADN)	ALCOHOLS, N.O.S. (CONTAINS ETHANOL, PROPAN-2-OL)

14.3. Transport hazard class(es)

ADR/RID class	3
ADR/RID classification code	F1
ADR/RID label	3
IMDG class	3
ICAO class/division	3
ADN class	3

Transport labels



14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ADN packing group	III
ICAO packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS	F-E, S-D
ADR transport category	3
Emergency Action Code	•3Y
Hazard Identification Number (ADR/RID)	30
Tunnel restriction code	(D/E)

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

POLYGARD DE-ICER CONCENTRATE (-20°C)

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	Control of Pollution (Special Waste) Regulations 1980 (as amended). The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).
EU legislation	Dangerous Substances Directive 67/548/EEC. 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). 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. Introduction to Local Exhaust Ventilation HS(G)37. CHIP for everyone HSG228. Approved Classification and Labelling Guide (Sixth edition) L131.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Issued by	HS&E Manager.
Revision date	12/03/2019
Revision	7
Supersedes date	06/11/2018
SDS status	Approved.
Hazard statements in full	H225 Highly flammable liquid and vapour. H226 Flammable liquid and vapour. H301 Toxic if swallowed. H302 Harmful if swallowed. H311 Toxic in contact with skin. H319 Causes serious eye irritation. H331 Toxic if inhaled. H336 May cause drowsiness or dizziness. H370 Causes damage to organs (Central nervous system, Optic Nerve (Nervus Opticus)). H373 May cause damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.

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.