



Prestone



SAFETY DATA SHEET -20°C low methanol Aero Deicer

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

1.1. Product identifier

Product name	-20°C low methanol Aero Deicer
Product number	NQA2354, DI6, HREP0049A
UFI	UFI: G3H6-A0ET-F004-JKHS
REACH registration notes	This is a MIXTURE; no registration information contained in this document . Holts are classed as Downstream User.

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

Identified uses	Deicer
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1.3. Details of the supplier of the safety data sheet

Supplier	Holt Lloyd Services 52 Rue des 40 Mines, 60000 – Allonne, France Phone: +33 (0)3 64 99 00 32 info@holtsauto.com
Contact person	Contact Email address: info@holtsauto.com
Manufacturer	Holt Lloyd International Ltd Barton Dock Road Stretford Manchester M32 0YQ - England, UK +44 (0) 161 866 4800 FAX +44 (0) 161 866 4854 www.holtsauto.com

1.4. Emergency telephone number

Emergency telephone	UK - 00 44 (0) 161 866 4800 Office hrs = 0900 - 1700 hrs
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National emergency telephone number

+43 1 31304 5620; chemikalien@umweltbundesamt.at (Austria)
 +32022649636; info@poisoncentre.be (Belgium)
 +359 2 9154 409; poison_centre@mail.orbitel.bg (Bulgaria)
 +38514686910; toksikologija@hzjz.hr (Croatia)
 +35722405611; cy-chemregistry@dli.mlsi.gov.cy (Cyprus)
 +420267082257; biocidy@mzcr.cz (Czech Republic)
 +45 72 54 40 00; mst@mst.dk (Denmark)
 +372 794 3500; clp@terviseamet.ee, info@terviseamet.ee (Estonia)
 +358 5052 000; kirjaamo@tukes.fi (Finland)
 + 33 3 83 85 21 92; bnpc@chru-nancy.fr (France)
 +49-30-18412-0; bfr@bfr.bund.de (Germany)
 +302106479250; +302106479450; devxp.gcs@aade.gr, environment.gcs@aade.gr (Greece)
 +36 (1) 476 1135; clp.ca@nnk.gov.hu (Hungary)
 +354 543 22 22; eitur@landspitali.is (Iceland)
 +353 (1) 809 2166 / +353 (1) 809 2566; chemicalsinfo@beaumont.ie (Ireland)
 +390649906140; inscweb@iss.it (Italy)
 +371 67032600; lvgmc@lvgmc.lv (Latvia)
 +370 70662008; aaa@aaa.am.lt (Lithuania)
 +320 22649636; +352 24785551; info@poisoncentre.be; direction-sante@ms.etat.lu (Luxembourg)
 +356 2395 2000; info@mccaa.org.mt (Malta)
 +31 88 75 585 61; productnotificatie@umcutrecht.nl (The Netherlands)
 +4573580500; produktregisteret@miljodir.no / +47 21 07 70 00; folkehelseinstituttet@fhi.no (Norway)
 +48 42 2538 400; biuro@chemikalia.gov.pl (Poland)
 +351213303271; ciav.tox@inem.pt (Portugal)
 +40213183606; infotox@insp.gov.ro (Romania)
 +7 495 621 6885; +7 495 628 1687; rtiac@mail.ru; rtiac2003@yahoo.com (Russia)
 +421 2 5465 2307; ntic@ntic.sk (Slovakia)
 + 386 1 522 1293; gp.ukc@kclj.si (Slovenia)
 +34 917689800; intcf.doc@justicia.es (Spain)
 +46104566750; giftinformation@gic.se (Sweden)
 +44 121 507 4123; allistervale@npis.org, sallybradberry@npis.org (UK)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Aerosol 1 - H222, H229
Health hazards	Eye Irrit. 2 - H319
Environmental hazards	Not Classified

2.2. Label elements

Hazard pictograms



Signal word Danger

Hazard statements

H222 Extremely flammable aerosol.
 H229 Pressurised container: may burst if heated.
 H319 Causes serious eye irritation.

-20°C low methanol Aero Deicer**Precautionary statements**

P101 If medical advice is needed, have product container or label at hand.
 P102 Keep out of reach of children.
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P211 Do not spray on an open flame or other ignition source.
 P251 Do not pierce or burn, even after use.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
 P501 Dispose of contents/ container in accordance with national regulations.

UFI

UFI: G3H6-A0ET-F004-JKHS

2.3. Other hazards**SECTION 3: Composition/information on ingredients****3.2. Mixtures**

ETHANOL			10-30%
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			
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			
BUTANE			1-5%
CAS number: 106-97-8	EC number: 203-448-7	REACH registration number: 01-2119474691-32-XXXX	
Classification			
Flam. Gas 1A - H220 Press. Gas			
ISOBUTANE			1-5%
CAS number: 75-28-5	EC number: 200-857-2	REACH registration number: 01-2119485395-27-XXXX	
Classification			
Flam. Gas 1A - H220 Press. Gas			

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AMMONIA ...% <1%		
CAS number: 1336-21-6	EC number: 215-647-6	REACH registration number: 01-2119488876-14-XXXX
M factor (Acute) = 1		
Classification Skin Corr. 1B - H314 Eye Dam. 1 - H318 STOT SE 3 - H335 Aquatic Acute 1 - H400		
METHANOL <0.6%		
CAS number: 67-56-1	EC number: 200-659-6	REACH registration number: 01-2119392409-28-XXXX
Classification Flam. Liq. 2 - H225 Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331 STOT SE 1 - H370		
PROPAN-2-OL <1%		
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		
MORPHOLINE <1%		
CAS number: 110-91-8	EC number: 203-815-1	REACH registration number: 01-2119496057-30-XXXX
Classification Flam. Liq. 3 - H226 Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Corr. 1B - H314 Eye Dam. 1 - H318		

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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Inhalation	Keep affected person away from heat, sparks and flames. Move affected person to fresh air at once. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Keep affected person warm and at rest. Get medical attention immediately.
Ingestion	Not relevant.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.
Eye contact	If liquid has entered the eyes, proceed as follows. Remove any contact lenses and open eyelids wide apart. Rinse with water. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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. Get medical attention promptly if symptoms occur after washing.
Inhalation	Vapours may cause headache, fatigue, dizziness and nausea.
Ingestion	May cause discomfort if swallowed.
Skin contact	May be slightly irritating to skin. Prolonged or repeated exposure may cause severe irritation.
Eye contact	Causes serious eye irritation. Prolonged contact causes serious eye and tissue damage.

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

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with the following media: Powder. Dry chemicals, sand, dolomite etc. Water spray, fog or mist.
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5.2. Special hazards arising from the substance or mixture

Specific hazards	Risk of explosion if heated. Containers can burst violently or explode when heated, due to excessive pressure build-up. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.
Hazardous combustion products	Oxides of carbon.

5.3. Advice for firefighters

Protective actions during firefighting	Containers close to fire should be removed or cooled with water. Use water to keep fire exposed containers cool and disperse vapours.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	For personal protection, see Section 8.
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6.2. Environmental precautions

Environmental precautions	Not considered to be a significant hazard due to the small quantities used.
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet.
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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. Avoid contact with skin and eyes. Avoid inhalation of vapours. Provide adequate ventilation. Use approved respirator if air contamination is above an acceptable level. Avoid spilling.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Do not expose to temperatures exceeding 50°C/122°F.

Storage class Flammable compressed gas storage. Aerosol containers and lighters

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

ETHANOL

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

Short-term exposure limit (15-minute): WEL

ETHANEDIOL

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

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

Sk

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

Sk

BUTANE

Long-term exposure limit (8-hour TWA): WEL 600 ppm 1450 mg/m³

Short-term exposure limit (15-minute): WEL 750 ppm 1810 mg/m³

ISOBUTANE

Long-term exposure limit (8-hour TWA): OES 800 ppm

Short-term exposure limit (15-minute): OES 800 ppm

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

Sk

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

MORPHOLINE

Long-term exposure limit (8-hour TWA): WEL 20 ppm(Sk) 72 mg/m³(Sk)

Short-term exposure limit (15-minute): WEL 30 ppm(Sk) 109 mg/m³(Sk)

WEL = Workplace Exposure Limit.

Sk = Can be absorbed through the skin.

-20°C low methanol Aero Deicer**ETHANOL (CAS: 64-17-5)**

DNEL Workers - Inhalation; Long term systemic effects: 950 mg/m³
 Workers - Inhalation; Short term local effects: 1900 mg/m³
 Workers - Dermal; Long term systemic effects: 343 mg/kg bw/day
 General population - Inhalation; Long term systemic effects: 114 mg/m³
 General population - Dermal; Long term systemic effects: 206 mg/kg bw/day
 General population - Oral; Long term systemic effects: 87 mg/kg bw/day
 General population - Inhalation; Short term local effects: 950 mg/m³

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

ETHANEDIOL (CAS: 107-21-1)

Ingredient comments WEL = Workplace Exposure Limits

DNEL Workers - Inhalation; Long term local effects: 35 mg/m³
 Workers - Dermal; Long term systemic effects: 106 mg/kg/day
 General population - Inhalation; Long term local effects: 7 mg/m³
 General population - Dermal; Long term systemic effects: 53 mg/kg/day

PNEC Fresh water; 10 mg/l
 marine water; 1 mg/l
 STP; 199.5 mg/l
 Sediment (Freshwater); 37 mg/kg
 Sediment (Marinewater); 3.7 mg/kg
 Soil; 1.53 mg/kg

METHANOL (CAS: 67-56-1)

DNEL Workers - Inhalation; Long term systemic effects: 260 mg/m³
 Workers - Inhalation; Short term systemic effects: 260 mg/m³
 Workers - Inhalation; Long term local effects: 260 mg/m³
 Workers - Inhalation; Short term local effects: 260 mg/m³
 Workers - Dermal; Long term systemic effects: 40 mg/kg bw/day
 General population - Inhalation; Long term systemic effects: 50 mg/m³
 General population - Inhalation; Short term systemic effects: 50 mg/m³
 General population - Inhalation; Long term local effects: 50 mg/m³
 General population - Inhalation; Short term local effects: 50 mg/m³
 General population - Dermal; Long term systemic effects: 8 mg/kg bw/day
 General population - Dermal; Short term systemic effects: 8 mg/kg bw/day
 General population - Oral; Long term systemic effects: 8 mg/kg bw/day
 General population - Oral; Short term systemic effects: 8 mg/kg bw/day

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PNEC	Fresh water; 20.8 mg/l marine water; 2.08 mg/l STP; 100 mg/l Intermittent release; 1540 mg/l Sediment (Freshwater); 77 mg/kg sediment dw Sediment (Marinewater); 7.7 mg/kg sediment dw Soil; 100 mg/kg soil dw
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PROPAN-2-OL (CAS: 67-63-0)

DNEL	Workers - Inhalation; Long term systemic effects: 500 mg/m ³ Workers - Dermal; Long term systemic effects: 888 mg/kg/day General population - Inhalation; Long term systemic effects: 89 mg/m ³ General population - Dermal; Long term systemic effects: 319 mg/kg/day General population - Oral; Long term systemic effects: 26 mg/kg/day
PNEC	Fresh water; Long term 140.9 mg/l marine water; Long term 140.9 mg/l Sediment (Freshwater); Long term 552 mg/kg sediment dw Sediment (Marinewater); Long term 552 mg/kg sediment dw Soil; Long term 28 mg/kg soil dw

MORPHOLINE (CAS: 110-91-8)

DNEL	Workers - Inhalation; Long term systemic effects: 91 mg/m ³ Workers - Inhalation; Long term local effects: 36 mg/m ³ Workers - Dermal; Long term systemic effects: 1.04 mg/kg/day General population - Oral; Long term systemic effects: 6.3 mg/kg/day
PNEC	Fresh water; 0.163 mg/l Intermittent release; 0.09 mg/l marine water; 0.016 mg/l STP; 10 mg/l Sediment (Freshwater); 1.83 mg/kg Sediment (Marinewater); 0.183 mg/kg Soil; 0.269 mg/kg

8.2. Exposure controls**Protective equipment****Appropriate engineering controls**

Provide adequate general and local exhaust ventilation.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles or face shield.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. It is recommended that gloves are made of the following material: Rubber (natural, latex). To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection

Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.

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Hygiene measures	Use engineering controls to reduce air contamination to permissible exposure level. Do not smoke in work area. Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Do not eat, drink or smoke when using this product.
Respiratory protection	No specific recommendations. Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Aerosol.
Colour	Colourless.
Odour	Slight. Ammonia. Alcoholic.
pH	pH (concentrated solution): 11.14
Melting point	-21.01°C
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 4.8 Upper flammable/explosive limit: 9.5
Relative density	0.981 @ 20°C
Solubility(ies)	Soluble in water.

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

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

Stability	Stable at normal ambient temperatures.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Not applicable.
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10.4. Conditions to avoid

Conditions to avoid	Avoid heat, flames and other sources of ignition. Avoid contact with the following materials: Strong oxidising agents. Strong alkalis. Strong mineral acids.
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10.5. Incompatible materials

Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.
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10.6. Hazardous decomposition products

Hazardous decomposition products	Oxides of carbon.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects	No information available.
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Acute toxicity - oral

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Notes (oral LD₅₀)	Based on available data the classification criteria are not met.
ATE oral (mg/kg)	6,720.43
<u>Acute toxicity - dermal</u>	
Notes (dermal LD₅₀)	Based on available data the classification criteria are not met.
ATE dermal (mg/kg)	54,674.69
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC₅₀)	Based on available data the classification criteria are not met.
ATE inhalation (gases ppm)	127,574.27
ATE inhalation (vapours mg/l)	546.75
ATE inhalation (dusts/mists mg/l)	91.12
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Based on available data the classification criteria are not met.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Causes serious eye irritation.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	No information available.
<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	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.
Reproductive toxicity - development	Does not contain any substances known to be toxic to reproduction.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Based on available data the classification criteria are not met.
<u>Aspiration hazard</u>	
Aspiration hazard	Not relevant.
<u>Inhalation</u>	
Inhalation	Extensive use of the product in areas with inadequate ventilation may result in the accumulation of hazardous vapour concentrations. May cause eye and respiratory system irritation. Symptoms following overexposure may include the following: Headache. Vapours may cause headache, fatigue, dizziness and nausea.
<u>Ingestion</u>	
Ingestion	May cause discomfort if swallowed.

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Skin contact May be slightly irritating to skin. Prolonged or repeated exposure may cause severe irritation.

Eye contact Causes serious eye irritation. Prolonged contact causes serious eye and tissue damage.

Toxicological information on ingredients.**ETHANOL****Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg) 10,470.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 17,100.0

Species Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 124.7

Species Rat

Skin corrosion/irritation

Skin corrosion/irritation Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitisation

Respiratory sensitisation Not sensitising.

Skin sensitisation

Skin sensitisation Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Does not contain any substances known to be mutagenic.

Carcinogenicity

Carcinogenicity Does not contain any substances known to be carcinogenic.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development This substance has no evidence of toxicity to reproduction.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

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Aspiration hazard Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

ETHANEDIOL**Acute toxicity - oral**

Notes (oral LD₅₀) Harmful if swallowed.

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ > 3500 mg/kg, Dermal, Mouse

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC50 > 2.5 mg/l, Inhalation, Rat

Skin corrosion/irritation

Skin corrosion/irritation Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Negative.

Genotoxicity - in vivo Negative.

Carcinogenicity

Carcinogenicity No evidence of carcinogenicity in animal studies. Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility Three-generation study - NOAEL > 1000 mg/kg bw/day, Oral, Rat F2 Fertility - NOEL 1000 mg/kg bw/day, Oral, Mouse F1

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

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Prolonged or repeated exposure may cause the following adverse effects: Liver and/or kidney damage.

Aspiration hazard

Aspiration hazard Not relevant.

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Inhalation	No specific health hazards known.
Ingestion	Harmful if swallowed.
Skin contact	May be slightly irritating to skin.
Eye contact	May be slightly irritating to eyes.

BUTANE**Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg)	5,000.0
Species	Rat

PROPANE**Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg)	5,000.0
Species	Rat
ATE oral (mg/kg)	5,000.0

ISOBUTANE**Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg)	5,000.0
Species	Rat
ATE oral (mg/kg)	5,000.0

PROPAN-2-OL**Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg)	5,045.0
Species	Rat
ATE oral (mg/kg)	5,045.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg)	12,800.0
Species	Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l)	20.0
Species	Rat

Skin corrosion/irritation

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Skin corrosion/irritation	Not irritating.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Causes serious eye irritation.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Not sensitising.
<u>Skin sensitisation</u>	
Skin sensitisation	Not sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Does not contain any substances known to be mutagenic.
<u>Carcinogenicity</u>	
Carcinogenicity	Does not contain any substances known to be carcinogenic.
IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity - development	This substance has no evidence of toxicity to reproduction.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Brain damage. Central and/or peripheral nervous system damage.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Based on available data the classification criteria are not met.
<u>Aspiration hazard</u>	
Aspiration hazard	Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

MORPHOLINE

<u>Acute toxicity - oral</u>	
Notes (oral LD₅₀)	LD ₅₀ 1900 mg/kg, Oral, Rat
<u>Acute toxicity - dermal</u>	
Notes (dermal LD₅₀)	LD ₅₀ 500 mg/kg, Dermal, Rabbit
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC₅₀)	LC50 8000 mg/m ³ , Inhalation, Rat
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Causes severe burns.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Causes serious eye damage.
<u>Respiratory sensitisation</u>	

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Respiratory sensitisation	No information available.
<u>Skin sensitisation</u>	
Skin sensitisation	Not sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Inconclusive.
Genotoxicity - in vivo	Negative.
<u>Carcinogenicity</u>	
Carcinogenicity	No evidence of carcinogenicity in animal studies.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Fertility - 900 mg/m ³ , Inhalation, Rat No evidence of reproductive toxicity in animal studies.
Reproductive toxicity - development	Fetotoxicity: - NOAEL: 750 mg/kg/day, Oral, Rat Maternal toxicity: - NOAEL: 75 mg/kg/day, Oral, Rat This substance has no evidence of toxicity to reproduction.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Based on available data the classification criteria are not met.
<u>Aspiration hazard</u>	
Aspiration hazard	Not relevant.

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**Acute aquatic toxicity**

Acute toxicity - fish No specific test data are available.

Acute toxicity - aquatic invertebrates Not available.

Acute toxicity - aquatic plants Not available.

Acute toxicity - microorganisms Not available.

Acute toxicity - terrestrial Not available.

Chronic aquatic toxicity

Chronic toxicity - fish early life stage Not available.

Short term toxicity - embryo and sac fry stages Not available.

Chronic toxicity - aquatic invertebrates Not available.

Ecological information on ingredients.

-20°C low methanol Aero Deicer**ETHANOL****Acute aquatic toxicity**

Acute toxicity - fish LC₅₀, 96 hours: 13000 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates LC₅₀, 48 hours: 12340 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 48 hours: 12900 mg/l, Selenastrum capricornutum

Acute toxicity - microorganisms EC₅₀, 4 hours: 5800 mg/l, Activated sludge

Chronic aquatic toxicity

Chronic toxicity - fish early life stage NOEC, 24 days: 0.08 mg/l, Pimephales promelas (Fat-head Minnow)

Chronic toxicity - aquatic invertebrates NOEC, 10 days: 9.6 mg/l, Daphnia magna

ETHANEDIOL**Acute aquatic toxicity**

Acute toxicity - fish LC₅₀, 96 hours: 72860 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: > 100 mg/l, Daphnia magna

Acute toxicity - aquatic plants IC₅₀, 96 hours: 10940 mg/l, Pseudokirchneriella subcapitata

Acute toxicity - microorganisms EC₂₀, 30 minutes: 1995 mg/l, Activated sludge
Read-across data.

Chronic aquatic toxicity

Chronic toxicity - fish early life stage LC₅₀, 28 days: > 1500 mg/l, Menidia peninsulae (Tidewater silverside)

Chronic toxicity - aquatic invertebrates EC₅₀, 21 days: > 100 mg/l, Daphnia magna

AMMONIA ...%**Acute aquatic toxicity**

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

PROPAN-2-OL**Acute aquatic toxicity**

Acute toxicity - fish LC₅₀, 96 hours: 9640 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates EC₅₀, 24 hours: > 10000 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 7 days: 180 mg/l, Selenastrum capricornutum

-20°C low methanol Aero Deicer**MORPHOLINE****Acute aquatic toxicity**

Acute toxicity - fish LC₅₀, 96 hours: 180 (freshwater) mg/l, Oncorhynchus mykiss (Rainbow trout)
LC₅₀, 96 hours: 179 (salt water) mg/l, Vala muli engeli (Marquesan mullet)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 45 mg/l, Daphnia magna

Acute toxicity - aquatic plants ErC₅₀, 96 hours: 28 (freshwater) mg/l, Pseudokirchneriella subcapitata
NOErC, 96 hours: 10 mg/l, Pseudokirchneriella subcapitata
ErC₅₀, 72 hours: 9 (salt water) mg/l, Skeletonema costatum

Acute toxicity - microorganisms EC₂₀, 30 minutes: > 1000 mg/l, Activated sludge
EC₃, 16 hours: 310 mg/l, Pseudomonas putida

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates EC₁₀, 21 days: 8.134 mg/l, Daphnia magna

12.2. Persistence and degradability

Persistence and degradability The product is expected to be biodegradable.

Ecological information on ingredients.**ETHANOL**

Persistence and degradability Rapidly degradable

Biological oxygen demand 1000 mg/g

Chemical oxygen demand 1900 mg/g

ETHANEDIOL

Persistence and degradability 10 days 90-100% Rapidly degradable

PROPAN-2-OL

Persistence and degradability Rapidly degradable

MORPHOLINE

Persistence and degradability Rapidly degradable

Stability (hydrolysis) Not relevant.

Biodegradation > 95%
28 days

12.3. Bioaccumulative potential

Bioaccumulative potential The product is not bioaccumulating.

Ecological information on ingredients.

-20°C low methanol Aero Deicer**ETHANOL**

Partition coefficient log Pow: -0.35

ETHANEDIOL

Partition coefficient log Pow: -1.36 QSAR data.

PROPAN-2-OL

Bioaccumulative potential No potential for bioaccumulation.

Partition coefficient log Pow: 0.05

MORPHOLINE

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: -2.55 (@ pH 7) log Pow: -0.84 (@ pH 10.3)

12.4. Mobility in soil**Mobility**

The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces. The product is insoluble in water. The product hardens to a solid, immobile substance.

Ecological information on ingredients.**ETHANOL**

Mobility Mobile.

Henry's law constant 3.3 x 10E-6 atm m³/mol @ °C

Surface tension 24.5 mN/m @ 20°C

PROPAN-2-OL

Mobility Mobile.

Surface tension 22.7 mN/m @ 20°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.**ETHANEDIOL**

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

PROPAN-2-OL

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

MORPHOLINE

-20°C low methanol Aero Deicer

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 Not known.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Disposal methods Empty containers must not be punctured or incinerated because of the risk of an explosion. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General Refer to the Dangerous Goods List for information on any Special Provisions 190, 327, 344, 625.

14.1. UN number

UN No. (ADR/RID) 1950

UN No. (IMDG) 1950

UN No. (ICAO) 1950

UN No. (ADN) 1950

14.2. UN proper shipping name

Proper shipping name (ADR/RID) AEROSOLS

Proper shipping name (IMDG) AEROSOLS

Proper shipping name (ICAO) AEROSOLS

Proper shipping name (ADN) AEROSOLS

14.3. Transport hazard class(es)

ADR/RID class 2.1

ADR/RID classification code 5F

ADR/RID label 2.1

IMDG class 2.1

ICAO class/division 2.1

ADN class 2.1

Transport labels**14.4. Packing group**

Not applicable.

14.5. Environmental hazards

-20°C low methanol Aero Deicer

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

EmS F-D, S-U

ADR transport category 2

Tunnel restriction code (D)

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

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78
and the IBC Code

SECTION 15: Regulatory information

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

National regulations The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).

EU legislation 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).
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.
Council Directive of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers (75/324/EEC) (as amended).

Authorisations (Annex XIV Regulation 1907/2006) No specific authorisations are known for this product.

Restrictions (Annex XVII Regulation 1907/2006) No specific restrictions on use are known for this product.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

-20°C low methanol Aero Deicer

Abbreviations and acronyms used in the safety data sheet

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE: Acute Toxicity Estimate.
BOD: Biochemical Oxygen Demand.
CAS: Chemical Abstracts Service.
DNEL: Derived No Effect Level.
EC₅₀: 50% of maximal Effective Concentration.
GHS: Globally Harmonized System.
IARC: International Agency for Research on Cancer.
IATA: International Air Transport Association.
ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.
IMDG: International Maritime Dangerous Goods.
LC₅₀: Lethal Concentration to 50 % of a test population.
LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
SVHC: Substances of Very High Concern.
UVCB - Unknown or variable composition, complex reaction products or Biological materials.
vPvB: Very Persistent and Very Bioaccumulative.

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Revision	5
Supersedes date	08/10/2020
SDS number	21378

-20°C low methanol Aero Deicer

Hazard statements in full

H220 Extremely flammable gas.
H222 Extremely flammable aerosol.
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H229 Pressurised container: may burst if heated.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.
H400 Very toxic to aquatic life.
H370 Causes damage to organs (Central nervous system, Optic nerve (nervus opticus)) if swallowed or in contact with skin.

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.