

Revision date 28/11/2023

Revision Number 7

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

1.1. Product identifier

Product Name	-40°C Aero Deicer
Product Code(s)	AS244UK, PDEI0006A, PDEI0001A, PDEI0003, PDEI0201A, 52081710128, 52081510128, 72081810137, XTM0017A
Safety data sheet number	21379
Unique Formula Identifier (UFI)	76H6-U03X-100C-6CJW
Pure substance/mixture	Mixture

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

Recommended use	Car Maintenance Product Anti-freeze and de-icing products
Uses advised against	No information available

1.3. Details of the supplier of the safety data sheet

Manufacturer	Supplier
Holts Auto Unit 100 Barton Dock Road Manchester United Kingdom M32 0YQ	Holt Lloyd Services, 52 Rue des 40 Mines, 60000 – Allonne, France

For further information, please contact

Contact Point	www.holtsauto.com
E-mail address	www.holtsauto.com

1.4. Emergency telephone number

Emergency Telephone	Holt Lloyd International: UK - 00 44 (0) 161 866 4800 Office Hours - Mon - Thurs: 8am - 5pm. Fri - 8am - 1pm. 00 44 (0) 161 886 4806 (24 Hour Voicemail).
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Emergency Telephone - §45 - (EC)1272/2008	
Europe	Europe: 00 44 (0) 161 866 4800 Office Hours - Mon - Thurs: 8am - 5pm. Fri - 8am - 1pm. 00 44 (0) 161 886 4806 (24 Hour Voicemail).
Austria	+43 1 31304 5620; chemikalien@umweltbundesamt.at
Belgium	+32022649636; info@poisoncentre.be
Ireland	+353 (1) 809 2166 / +353 (1) 809 2566; chemicalsinfo@beaumont.ie
United Kingdom	Holt Lloyd International: UK - 00 44 (0) 161 866 4800 Office Hours - Mon - Thurs: 8am - 5pm. Fri - 8am - 1pm. 00 44 (0) 161 886 4806 (24 Hour Voicemail).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Aerosols	Category 1 - (H222, H229)
Serious eye damage/eye irritation	Category 2 - (H319)

2.2. Label elements



Signal word

Danger

Hazard statements

H222 - Extremely flammable aerosol

H229 - Pressurised container: May burst if heated

H319 - Causes serious eye irritation

Precautionary Statements - EU (§28, 1272/2008)

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.

P410 + P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Unknown aquatic toxicity

Contains 0.13718 % of components with unknown hazards to the aquatic environment.

2.3. Other hazards

Causes mild skin irritation.

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
ETHANOL 64-17-5	25 - <50%	01-2119457610-43-00 00	200-578-6 (603-002-00)	Flam. Liq. 2 (H225)	-	-	-

			-5)				
Ethylene glycol 107-21-1	5 - <10%	01-2119456816-28-00 00	203-473-3 (603-027-00 -1)	Acute Tox. 4 (H302) STOT RE 2 (H373)	-	-	-
BUTANE 106-97-8	2.5 - <5%	01-2119474691-32-00 00	203-448-7 (601-004-00 -0)	Flam. Gas 1 (H220) Press. Gas	-	-	-
PROPANE 74-98-6	1 - <2.5%	01-2119486944-21-00 00	200-827-9 (601-003-00 -5)	Flam. Gas 1 (H220) Press. Gas (H280)	-	-	-
ISOBUTANE 75-28-5	1 - <2.5%	01-2119485395-27-00 00	200-857-2 (601-004-00 -0)	Flam. Gas 1 (H220) Press. Gas	-	-	-
PROPAN-2-OL 67-63-0	1 - <2.5%	01-2119457558-25-00 00	200-661-7 (603-117-00 -0)	Flam. Liq. 2 (H225) Eye Irrit. 2 (H319) STOT SE 3 (H336)	Eye Irrit. 2 :: 1%<=C<10%	-	-
METHANOL 67-56-1	0.5 - <1%	01-2119392409-28-00 00	200-659-6 (603-001-00 -X)	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) STOT SE 1 (H370) Flam. Liq. 2 (H225)	STOT SE 1 :: C>=10% STOT SE 2 :: 3%<=C<10%	-	-
Ammonia% 1336-21-6	0.025 - <0.25%	01-2119488876-14-00 00	215-647-6 (007-001-01 -2)	Skin Corr. 1B (H314) Aquatic Acute 1 (H400)	Skin Corr. 1B :: C>=10%	1	-
MORPHOLINE 110-91-8	0.025 - <0.25%	01-2119496057-30-00 00	203-815-1 (613-028-00 -9)	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Corr. 1B (H314) Flam. Liq. 3 (H226)	Skin Corr. 1B :: C>=10%	-	-

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
ETHANOL 64-17-5	7060	No data available	116.9 133.8	No data available	No data available
Ethylene glycol 107-21-1	4700	10600	3.75	No data available	No data available
BUTANE 106-97-8	No data available	No data available	No data available	No data available	276808.3276
PROPANE 74-98-6	No data available	No data available	No data available	No data available	200000
ISOBUTANE 75-28-5	No data available	No data available	No data available	No data available	200000
PROPAN-2-OL 67-63-0	1870	4059	No data available	30.1002	No data available
METHANOL 67-56-1	6200	15840	No data available	41.6976	No data available
Ammonia% 1336-21-6	350	No data available	No data available	No data available	No data available
MORPHOLINE 110-91-8	1050	310	No data available	40.3129	No data available

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a doctor.
Ingestion	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a doctor.
Self-protection of the first aider	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid contact with skin, eyes or clothing.

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

Symptoms	May cause redness and tearing of the eyes. Burning sensation. Prolonged contact may cause redness and irritation.
Effects of Exposure	No information available.

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

Note to doctors	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Dry chemical. Carbon dioxide (CO ₂). Water spray.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Cylinders may rupture under extreme heat. Damaged cylinders should be handled only by specialists. Containers may explode when heated.
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5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Take precautionary measures against static discharges. Avoid breathing dust/fume/gas/mist/vapours/spray.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Methods for containment Keep out of drains, sewers, ditches and waterways. Stop leak if you can do it without risk. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Flood with water to complete polymerization and scrape off floor.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Use personal protection equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Use spark-proof tools and explosion-proof equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Keep in an area equipped with sprinklers. Do not puncture or incinerate cans. Contents under pressure. In case of rupture. Avoid breathing vapours or mists. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions

Protect from sunlight. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Store in a cool, dry area away from potential sources of heat, open flames, sunlight or other chemicals.

Storage class (TRGS 510)

LGK 2B.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
ETHANOL 64-17-5	-	TWA: 1000 ppm TWA: 1900 mg/m ³ STEL 2000 ppm STEL 3800 mg/m ³	TWA: 1000 ppm TWA: 1907 mg/m ³	TWA: 1000 mg/m ³	TWA: 1000 ppm TWA: 1900 mg/m ³
Ethylene glycol 107-21-1	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ *	TWA: 10 ppm TWA: 26 mg/m ³ STEL 20 ppm STEL 52 mg/m ³ H*	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ D*	STEL: 40 ppm STEL: 104 mg/m ³ TWA: 52 mg/m ³ TWA: 20 ppm K*	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ *
BUTANE 106-97-8	-	TWA: 800 ppm TWA: 1900 mg/m ³ STEL 1600 ppm STEL 3800 mg/m ³	TWA: 1000 ppm STEL: 980 ppm STEL: 2370 mg/m ³	TWA: 1900 mg/m ³	TWA: 600 ppm TWA: 1450 mg/m ³ TWA: 10 ppm TWA: 22 mg/m ³ STEL: 750 ppm STEL: 1810 mg/m ³
PROPANE 74-98-6	-	TWA: 1000 ppm TWA: 1800 mg/m ³ STEL 2000 ppm STEL 3600 mg/m ³	TWA: 1000 ppm	TWA: 1800.0 mg/m ³	-
ISOBUTANE 75-28-5	-	TWA: 800 ppm TWA: 1900 mg/m ³ STEL 1600 ppm STEL 3800 mg/m ³	TWA: 1000 ppm STEL: 980 ppm STEL: 2370 mg/m ³	TWA: 1800.0 mg/m ³	-
PROPAN-2-OL 67-63-0	-	TWA: 200 ppm TWA: 500 mg/m ³ STEL 800 ppm STEL 2000 mg/m ³	TWA: 200 ppm TWA: 500 mg/m ³ STEL: 400 ppm STEL: 1000 mg/m ³	STEL: 1225.0 mg/m ³ TWA: 980.0 mg/m ³	TWA: 400 ppm TWA: 999 mg/m ³ STEL: 500 ppm STEL: 1250 mg/m ³
METHANOL 67-56-1	TWA: 200 ppm TWA: 260 mg/m ³ *	TWA: 200 ppm TWA: 260 mg/m ³ STEL 800 ppm STEL 1040 mg/m ³	TWA: 200 ppm TWA: 266 mg/m ³ STEL: 250 ppm STEL: 333 mg/m ³	TWA: 200 ppm TWA: 260.0 mg/m ³ K*	TWA: 200 ppm TWA: 260 mg/m ³ *

		H*	D*		
Ammonia% 1336-21-6	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL 50 ppm STEL 36 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³	STEL: 50 ppm STEL: 36.0 mg/m ³ TWA: 14.0 mg/m ³ TWA: 20 ppm	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³
MORPHOLINE 110-91-8	TWA: 10 ppm TWA: 36 mg/m ³	TWA: 10 ppm TWA: 36 mg/m ³ STEL 10 ppm STEL 36 mg/m ³ Ceiling: 10 ppm Ceiling: 36 mg/m ³	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³ D*	STEL: 20 ppm STEL: 72.0 mg/m ³ TWA: 10 ppm TWA: 36.0 mg/m ³	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
ETHANOL 64-17-5	-	TWA: 1000 mg/m ³ Ceiling: 3000 mg/m ³	TWA: 1000 ppm TWA: 1900 mg/m ³ STEL: 2000 ppm STEL: 3800 mg/m ³	TWA: 500 ppm TWA: 1000 mg/m ³ STEL: 1000 ppm STEL: 1900 mg/m ³	TWA: 1000 ppm TWA: 1900 mg/m ³ STEL: 1300 ppm STEL: 2500 mg/m ³
Ethylene glycol 107-21-1	* STEL: 40 ppm STEL: 104 mg/m ³ TWA: 20 ppm TWA: 52 mg/m ³	TWA: 50 mg/m ³ Ceiling: 100 mg/m ³ D*	TWA: 10 ppm TWA: 26 mg/m ³ TWA: 10 mg/m ³ H* STEL: 104 mg/m ³ STEL: 40 ppm STEL: 20 mg/m ³	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ A*	TWA: 20 ppm TWA: 50 mg/m ³ STEL: 40 ppm STEL: 100 mg/m ³ iho*
BUTANE 106-97-8	-	-	TWA: 500 ppm TWA: 1200 mg/m ³ STEL: 1000 ppm STEL: 2400 mg/m ³	TWA: 800 ppm TWA: 1500 mg/m ³ STEL: 500 mg/m ³	TWA: 800 ppm TWA: 1900 mg/m ³ STEL: 1000 ppm STEL: 2400 mg/m ³
PROPANE 74-98-6	-	-	TWA: 1000 ppm TWA: 1800 mg/m ³ STEL: 2000 ppm STEL: 3600 mg/m ³	TWA: 1000 ppm TWA: 1800 mg/m ³	TWA: 800 ppm TWA: 1500 mg/m ³ STEL: 1100 ppm STEL: 2000 mg/m ³
ISOBUTANE 75-28-5	-	-	-	TWA: 800 ppm TWA: 1900 mg/m ³	TWA: 800 ppm TWA: 1900 mg/m ³ STEL: 1000 ppm STEL: 2400 mg/m ³
PROPAN-2-OL 67-63-0	-	TWA: 500 mg/m ³ Ceiling: 1000 mg/m ³ D*	TWA: 200 ppm TWA: 490 mg/m ³ STEL: 400 ppm STEL: 980 mg/m ³	TWA: 150 ppm TWA: 350 mg/m ³ STEL: 250 ppm STEL: 600 mg/m ³	TWA: 200 ppm TWA: 500 mg/m ³ STEL: 250 ppm STEL: 620 mg/m ³
METHANOL 67-56-1	* TWA: 200 ppm TWA: 260 mg/m ³	TWA: 250 mg/m ³ Ceiling: 1000 mg/m ³ D*	TWA: 200 ppm TWA: 260 mg/m ³ H* STEL: 400 ppm STEL: 520 mg/m ³	TWA: 200 ppm TWA: 250 mg/m ³ STEL: 250 ppm STEL: 350 mg/m ³ A*	TWA: 200 ppm TWA: 270 mg/m ³ STEL: 250 ppm STEL: 330 mg/m ³ iho*
Ammonia% 1336-21-6	STEL: 50 ppm STEL: 36 mg/m ³ TWA: 20 ppm TWA: 14 mg/m ³	TWA: 14 mg/m ³ Ceiling: 36 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 36 mg/m ³ STEL: 50 ppm	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³
MORPHOLINE 110-91-8	STEL: 20 ppm STEL: 72 mg/m ³ TWA: 10 ppm TWA: 36 mg/m ³	TWA: 35 mg/m ³ Ceiling: 70 mg/m ³ D*	TWA: 10 ppm TWA: 36 mg/m ³ H* STEL: 72 mg/m ³ STEL: 20 ppm	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³ iho*
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
ETHANOL 64-17-5	TWA: 1000 ppm TWA: 1900 mg/m ³ STEL: 5000 ppm STEL: 9500 mg/m ³	TWA: 200 ppm TWA: 380 mg/m ³	TWA: 200 ppm TWA: 380 mg/m ³ Peak: 800 ppm Peak: 1520 mg/m ³	TWA: 1000 ppm TWA: 1900 mg/m ³	TWA: 1000 ppm TWA: 1900 mg/m ³ STEL: 2000 ppm STEL: 3800 mg/m ³

Ethylene glycol 107-21-1	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ *	TWA: 10 ppm TWA: 26 mg/m ³ H*	TWA: 10 ppm TWA: 26 mg/m ³ Peak: 20 ppm Peak: 52 mg/m ³ *	TWA: 50 ppm TWA: 125 mg/m ³ STEL: 50 ppm STEL: 125 mg/m ³	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ b*
BUTANE 106-97-8	TWA: 800 ppm TWA: 1900 mg/m ³	TWA: 1000 ppm TWA: 2400 mg/m ³	TWA: 1000 ppm TWA: 2400 mg/m ³ Peak: 4000 ppm Peak: 9600 mg/m ³	TWA: 1000 ppm TWA: 2350 mg/m ³	TWA: 2350 mg/m ³ STEL: 9400 mg/m ³
PROPANE 74-98-6	-	TWA: 1000 ppm TWA: 1800 mg/m ³	TWA: 1000 ppm TWA: 1800 mg/m ³ Peak: 4000 ppm Peak: 7200 mg/m ³	TWA: 1000 ppm TWA: 1800 mg/m ³	-
ISOBUTANE 75-28-5	-	TWA: 1000 ppm TWA: 2400 mg/m ³	TWA: 1000 ppm TWA: 2400 mg/m ³ Peak: 4000 ppm Peak: 9600 mg/m ³	-	-
PROPAN-2-OL 67-63-0	STEL: 400 ppm STEL: 980 mg/m ³	TWA: 200 ppm TWA: 500 mg/m ³	TWA: 200 ppm TWA: 500 mg/m ³ Peak: 400 ppm Peak: 1000 mg/m ³	TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³	TWA: 500 mg/m ³ TWA: 200 ppm STEL: 1000 mg/m ³ STEL: 400 ppm b*
METHANOL 67-56-1	TWA: 200 ppm TWA: 260 mg/m ³ STEL: 1000 ppm STEL: 1300 mg/m ³ *	TWA: 100 ppm TWA: 130 mg/m ³ H*	TWA: 100 ppm TWA: 130 mg/m ³ Peak: 200 ppm Peak: 260 mg/m ³ *	TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³ *	TWA: 260 mg/m ³ TWA: 200 ppm b*
Ammonia% 1336-21-6	TWA: 10 ppm TWA: 7 mg/m ³ STEL: 20 ppm STEL: 14 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ Peak: 40 ppm Peak: 28 mg/m ³	TWA: 50 ppm TWA: 35 mg/m ³ STEL: 50 ppm STEL: 35 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³
MORPHOLINE 110-91-8	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³	TWA: 5 ppm TWA: 18 mg/m ³ H*	TWA: 5 ppm TWA: 18 mg/m ³ Peak: 5 ppm Peak: 18 mg/m ³	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³	TWA: 36 mg/m ³ TWA: 10 ppm STEL: 72 mg/m ³ STEL: 20 ppm
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
ETHANOL 64-17-5	STEL: 1000 ppm	-	STEL: 1000 ppm STEL: 1884 mg/m ³	TWA: 1000 mg/m ³	STEL: 1000 ppm STEL: 1900 mg/m ³ TWA: 500 ppm TWA: 1000 mg/m ³
Ethylene glycol 107-21-1	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ Sk*	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ cute*	TWA: 25 ppm STEL: 50 ppm STEL: 10 mg/m ³	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ Ada*	STEL: 20 ppm STEL: 50 mg/m ³ TWA: 10 ppm TWA: 25 mg/m ³ O*
BUTANE 106-97-8	TWA: 1000 ppm STEL: 3000 ppm	-	STEL: 1000 ppm STEL: 2377 mg/m ³	TWA: 300 mg/m ³ STEL: 300 mg/m ³	-
PROPANE 74-98-6	STEL: 3000 ppm Simple asphyxiant	-	: Simple asphyxiant	TWA: 1000 ppm TWA: 1800 mg/m ³ STEL: 300 mg/m ³	-
ISOBUTANE 75-28-5	STEL: 3000 ppm	-	STEL: 1000 ppm STEL: 2377 mg/m ³	TWA: 100 mg/m ³ STEL: 300 mg/m ³	-
PROPAN-2-OL 67-63-0	TWA: 200 ppm STEL: 400 ppm Sk*	-	TWA: 200 ppm TWA: 492 mg/m ³ STEL: 400 ppm STEL: 983 mg/m ³	TWA: 350 mg/m ³ STEL: 600 mg/m ³	STEL: 250 ppm STEL: 600 mg/m ³ TWA: 150 ppm TWA: 350 mg/m ³
METHANOL 67-56-1	TWA: 200 ppm TWA: 260 mg/m ³	TWA: 200 ppm TWA: 260 mg/m ³	TWA: 200 ppm TWA: 262 mg/m ³	TWA: 200 ppm TWA: 260 mg/m ³	TWA: 200 ppm TWA: 260 mg/m ³

	STEL: 600 ppm STEL: 780 mg/m ³ Sk*	cute*	STEL: 250 ppm STEL: 328 mg/m ³ cute*	Ada*	O*
Ammonia% 1336-21-6	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³	TWA: 25 ppm TWA: 17 mg/m ³ STEL: 35 ppm STEL: 24 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³	STEL: 50 ppm STEL: 36 mg/m ³ TWA: 20 ppm TWA: 14 mg/m ³
MORPHOLINE 110-91-8	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³ Sk*	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³ cute*	TWA: 20 ppm cute*	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³	STEL: 20 ppm STEL: 72 mg/m ³ TWA: 10 ppm TWA: 36 mg/m ³
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
ETHANOL 64-17-5	-	-	TWA: 137 ppm TWA: 260 mg/m ³ STEL: 1000 ppm STEL: 1900 mg/m ³ H*	TWA: 500 ppm TWA: 950 mg/m ³ STEL: 625 ppm STEL: 1187.5 mg/m ³	TWA: 1900 mg/m ³
Ethylene glycol 107-21-1	STEL: 40 ppm STEL: 104 mg/m ³ TWA: 20 ppm TWA: 52 mg/m ³ Peau*	STEL: 40 ppm STEL: 104 mg/m ³ skin* TWA: 20 ppm TWA: 52 mg/m ³	TWA: 52 mg/m ³ TWA: 10 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ H*	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 104 mg/m ³ STEL: 40 ppm H*	STEL: 50 mg/m ³ TWA: 15 mg/m ³ skóra*
BUTANE 106-97-8	-	-	-	TWA: 250 ppm TWA: 600 mg/m ³ STEL: 312.5 ppm STEL: 750 mg/m ³	STEL: 3000 mg/m ³ TWA: 1900 mg/m ³
PROPANE 74-98-6	-	-	-	TWA: 500 ppm TWA: 900 mg/m ³ STEL: 625 ppm STEL: 1125 mg/m ³	TWA: 1800 mg/m ³
ISOBUTANE 75-28-5	-	-	-	TWA: 40 ppm TWA: 275 mg/m ³ STEL: 60 ppm STEL: 343.75 mg/m ³	-
PROPAN-2-OL 67-63-0	-	-	-	TWA: 100 ppm TWA: 245 mg/m ³ STEL: 150 ppm STEL: 306.25 mg/m ³	STEL: 1200 mg/m ³ TWA: 900 mg/m ³ skóra*
METHANOL 67-56-1	TWA: 200 ppm TWA: 260 mg/m ³ Peau*	skin* TWA: 200 ppm TWA: 260 mg/m ³	TWA: 100 ppm TWA: 133 mg/m ³ H*	TWA: 100 ppm TWA: 130 mg/m ³ STEL: 150 ppm STEL: 162.5 mg/m ³ H*	STEL: 300 mg/m ³ TWA: 100 mg/m ³ Prohibited - substances or mixtures containing Methanol in weight concentration >3%;except fuels used in the model building, powerboating, fuel cells and biofuels skóra*
Ammonia% 1336-21-6	STEL: 50 ppm STEL: 36 mg/m ³ TWA: 20 ppm TWA: 14 mg/m ³	STEL: 50 ppm STEL: 36 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³	TWA: 15 ppm TWA: 11 mg/m ³ TWA: 20 ppm STEL: 50 ppm STEL: 36 mg/m ³ STEL: 30 ppm	STEL: 28 mg/m ³ TWA: 14 mg/m ³

MORPHOLINE 110-91-8	STEL: 20 ppm STEL: 72 mg/m ³ TWA: 10 ppm TWA: 36 mg/m ³	STEL: 20 ppm STEL: 72 mg/m ³ TWA: 10 ppm TWA: 36 mg/m ³	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³ H*	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 54 mg/m ³ H*	STEL: 72 mg/m ³ TWA: 36 mg/m ³ skóra*
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
ETHANOL 64-17-5	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m ³ STEL: 5000 ppm STEL: 9500 mg/m ³	TWA: 500 ppm TWA: 960 mg/m ³ Ceiling: 1920 mg/m ³	TWA: 960 mg/m ³ TWA: 500 ppm STEL: 1000 ppm STEL: 1920 mg/m ³	STEL: 1000 ppm STEL: 1910 mg/m ³
Ethylene glycol 107-21-1	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ Ceiling: 100 mg/m ³ Cutânea*	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ P*	TWA: 20 ppm TWA: 52 mg/m ³ K* Ceiling: 104 mg/m ³	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ K*	TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ vía dérmica*
BUTANE 106-97-8	TWA: 1000 ppm STEL: 1000 ppm	TWA: 700 mg/m ³ STEL: 1000 mg/m ³	TWA: 1000 ppm TWA: 2400 mg/m ³ STEL: 5000 ppm STEL: 12000 mg/m ³	TWA: 1000 ppm TWA: 2400 mg/m ³ STEL: 4000 ppm STEL: 9600 mg/m ³	TWA: 1000 ppm
PROPANE 74-98-6	TWA: 1000 ppm	TWA: 778 ppm TWA: 1400 mg/m ³ STEL: 1000 ppm STEL: 1800 mg/m ³	-	TWA: 1000 ppm TWA: 1800 mg/m ³ STEL: 4000 ppm STEL: 7200 mg/m ³	TWA: 1000 ppm
ISOBUTANE 75-28-5	TWA: 1000 ppm STEL: 1000 ppm	TWA: 700 mg/m ³ STEL: 1000 mg/m ³	TWA: 1000 ppm TWA: 2400 mg/m ³ STEL: 5000 ppm STEL: 12000 mg/m ³	TWA: 1000 ppm TWA: 2400 mg/m ³ STEL: 4000 ppm STEL: 9600 mg/m ³	TWA: 1000 ppm
PROPAN-2-OL 67-63-0	TWA: 200 ppm STEL: 400 ppm	TWA: 81 ppm TWA: 200 mg/m ³ STEL: 203 ppm STEL: 500 mg/m ³	TWA: 200 ppm TWA: 500 mg/m ³ Ceiling: 1000 mg/m ³	TWA: 200 ppm TWA: 500 mg/m ³ STEL: 400 ppm STEL: 1000 mg/m ³	TWA: 200 ppm TWA: 500 mg/m ³ STEL: 400 ppm STEL: 1000 mg/m ³
METHANOL 67-56-1	TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm Cutânea*	TWA: 200 ppm TWA: 260 mg/m ³ P*	TWA: 200 ppm TWA: 260 mg/m ³ K*	TWA: 200 ppm TWA: 260 mg/m ³ STEL: 800 ppm STEL: 1040 mg/m ³ K*	TWA: 200 ppm TWA: 266 mg/m ³ vía dérmica*
Ammonia% 1336-21-6	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ Ceiling: 36 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 50 ppm STEL: 36 mg/m ³
MORPHOLINE 110-91-8	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³ Cutânea*	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³	TWA: 10 ppm TWA: 36 mg/m ³ Ceiling: 72 mg/m ³	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³ K*	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³
Chemical name	Sweden		Switzerland		United Kingdom
ETHANOL 64-17-5	Vägledande KGV: 1000 ppm Vägledande KGV: 1900 mg/m ³ NGV: 500 ppm NGV: 1000 mg/m ³		TWA: 500 ppm TWA: 960 mg/m ³ STEL: 1000 ppm STEL: 1920 mg/m ³		TWA: 1000 ppm TWA: 1920 mg/m ³ STEL: 3000 ppm STEL: 5760 mg/m ³
Ethylene glycol 107-21-1	Bindande KGV: 40 ppm Bindande KGV: 104 mg/m ³ NGV: 10 ppm NGV: 25 mg/m ³ H*		TWA: 10 ppm TWA: 26 mg/m ³ STEL: 20 ppm STEL: 52 mg/m ³ H*		TWA: 10 mg/m ³ TWA: 20 ppm TWA: 52 mg/m ³ STEL: 40 ppm STEL: 104 mg/m ³ STEL: 30 mg/m ³ Sk*

BUTANE 106-97-8	NGV: 350 mg/m ³	TWA: 800 ppm TWA: 1900 mg/m ³ STEL: 3200 ppm STEL: 7600 mg/m ³	TWA: 600 ppm TWA: 1450 mg/m ³ STEL: 750 ppm STEL: 1810 mg/m ³
PROPANE 74-98-6	NGV: 350 mg/m ³	TWA: 1000 ppm TWA: 1800 mg/m ³ STEL: 4000 ppm STEL: 7200 mg/m ³	-
ISOBUTANE 75-28-5	NGV: 350 mg/m ³	TWA: 800 ppm TWA: 1900 mg/m ³ STEL: 3200 ppm STEL: 7600 mg/m ³	-
PROPAN-2-OL 67-63-0	Vägledande KGV: 250 ppm Vägledande KGV: 600 mg/m ³ NGV: 150 ppm NGV: 350 mg/m ³	TWA: 200 ppm TWA: 500 mg/m ³ STEL: 400 ppm STEL: 1000 mg/m ³	TWA: 400 ppm TWA: 999 mg/m ³ STEL: 500 ppm STEL: 1250 mg/m ³
METHANOL 67-56-1	Vägledande KGV: 250 ppm Vägledande KGV: 350 mg/m ³ NGV: 200 ppm NGV: 250 mg/m ³ H*	TWA: 200 ppm TWA: 260 mg/m ³ STEL: 400 ppm STEL: 520 mg/m ³ H*	TWA: 200 ppm TWA: 266 mg/m ³ STEL: 250 ppm STEL: 333 mg/m ³ Sk*
Ammonia% 1336-21-6	NGV: 20 ppm NGV: 14 mg/m ³	TWA: 20 ppm TWA: 14 mg/m ³ STEL: 40 ppm STEL: 28 mg/m ³	TWA: 25 ppm TWA: 18 mg/m ³ STEL: 35 ppm STEL: 25 mg/m ³
MORPHOLINE 110-91-8	Bindande KGV: 20 ppm Bindande KGV: 72 mg/m ³ NGV: 10 ppm NGV: 35 mg/m ³	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³ H*	TWA: 10 ppm TWA: 36 mg/m ³ STEL: 20 ppm STEL: 72 mg/m ³ Sk*

Biological occupational exposure limits

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
PROPAN-2-OL 67-63-0	-	-	-	50 mg/L - blood (Acetone) - at the end of the work shift 50 mg/L - urine (Acetone) - at the end of the work shift	-
METHANOL 67-56-1	-	-	-	7.0 mg/g Creatinine - urine (Methanol) - at the end of the work shift	0.47 mmol/L (urine - Methanol end of shift) 15 mg/L (urine - Methanol end of shift)
Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
PROPAN-2-OL 67-63-0	-	-	-	25 mg/L (whole blood - Acetone end of shift) 25 mg/L (urine - Acetone end of shift) 25 mg/L - BAT (end of exposure or end of shift) urine 25 mg/L - BAT (end of exposure or end	25 mg/L (whole blood - Acetone end of shift) 25 mg/L (urine - Acetone end of shift)

METHANOL 67-56-1	-	-	15 mg/L - urine (Methanol) - end of shift	of shift) blood 15 mg/L (urine - Methanol end of shift) 15 mg/L (urine - Methanol for long-term exposures: at the end of the shift after several shifts) 15 mg/L - BAT (for long-term exposures: at the end of the shift after several shifts) urine 15 mg/L - BAT (end of exposure or end of shift) urine	15 mg/L (urine - Methanol end of shift) 15 mg/L (urine - Methanol for long-term exposures: at the end of the shift after several shifts)
Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII	
PROPAN-2-OL 67-63-0	-	40 mg/L (urine - Acetone end of shift at end of workweek)	-	40 mg/L - urine (Acetone) - end of shift at end of workweek	
METHANOL 67-56-1	30 mg/L (urine - Methanol end of shift) 940 µmol/L (urine - Methanol end of shift)	15 mg/L (urine - Methanol end of shift)	-	15 mg/L - urine (Methanol) - end of shift	
Chemical name	Latvia	Luxembourg	Romania	Slovakia	
PROPAN-2-OL 67-63-0	-	-	50 mg/L - urine (Acetone) - end of shift	-	
METHANOL 67-56-1	-	-	6 mg/L - urine (Methanol) - end of shift	30 mg/L (urine - Methanol end of exposure or work shift) 30 mg/L (urine - Methanol after all work shifts)	
Chemical name	Slovenia	Spain	Switzerland	United Kingdom	
PROPAN-2-OL 67-63-0	25 mg/L - blood (Acetone) - at the end of the work shift 25 mg/L - urine (Acetone) - at the end of the work shift	40 mg/L (urine - Acetone end of workweek)	25 mg/L (urine - Acetone end of shift) 0.4 mmol/L (urine - Acetone end of shift) 25 mg/L (whole blood - Acetone end of shift) 0.4 mmol/L (whole blood - Acetone end of shift)	-	
METHANOL 67-56-1	15 mg/L - urine (Methanol) - at the end of the work shift; for long-term exposure: at the end of the work shift after several consecutive workdays	15 mg/L (urine - Methanol end of shift)	30 mg/L (urine - Methanol end of shift, and after several shifts (for long-term exposures)) 936 µmol/L (urine - Methanol end of shift, and after several shifts (for long-term exposures))	-	

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
ETHANOL	-	343 mg/kg bw/day [4] [6]	950 mg/m ³ [4] [6]

Chemical name	Oral	Dermal	Inhalation
64-17-5			1900 mg/m ³ [5] [7]
Ethylene glycol 107-21-1	-	106 mg/kg bw/day [4] [6]	35 mg/m ³ [5] [6]
PROPAN-2-OL 67-63-0	-	888 mg/kg bw/day [4] [6]	500 mg/m ³ [4] [6]
METHANOL 67-56-1	-	20 mg/kg bw/day [4] [6] 20 mg/kg bw/day [4] [7]	130 mg/m ³ [4] [6] 130 mg/m ³ [4] [7] 130 mg/m ³ [5] [6] 130 mg/m ³ [5] [7]
MORPHOLINE 110-91-8	-	1.04 mg/kg bw/day [4] [6]	91 mg/m ³ [4] [6] 36 mg/m ³ [5] [6] 72 mg/m ³ [5] [7]

Notes

[4]	Systemic health effects.
[5]	Local health effects.
[6]	Long term.
[7]	Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
ETHANOL 64-17-5	87 mg/kg bw/day [4] [6]	-	114 mg/m ³ [4] [6] 950 mg/m ³ [5] [7]
Ethylene glycol 107-21-1	-	-	7 mg/m ³ [5] [6]
PROPAN-2-OL 67-63-0	26 mg/kg bw/day [4] [6]	-	89 mg/m ³ [4] [6]
METHANOL 67-56-1	4 mg/kg bw/day [4] [6] 4 mg/kg bw/day [4] [7]	4 mg/kg bw/day [4] [6] 4 mg/kg bw/day [4] [7]	26 mg/m ³ [4] [6] 26 mg/m ³ [4] [7] 26 mg/m ³ [5] [6] 26 mg/m ³ [5] [7]
MORPHOLINE 110-91-8	6.3 mg/kg bw/day [4] [6]	-	-

Notes

[4]	Systemic health effects.
[5]	Local health effects.
[6]	Long term.
[7]	Short term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Ethylene glycol 107-21-1	10 mg/L	10 mg/L	1 mg/L	10 mg/L	-
PROPAN-2-OL 67-63-0	140.9 mg/L	140.9 mg/L	140.9 mg/L	-	-
METHANOL 67-56-1	20.8 mg/L	1540 mg/L	2.08 mg/L	-	-
MORPHOLINE 110-91-8	0.163 mg/L	0.09 mg/L	0.0163 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Ethylene glycol 107-21-1	37 mg/kg sediment dw	3.7 mg/kg sediment dw	199.5 mg/L	1.53 mg/kg soil dw	-
PROPAN-2-OL 67-63-0	552 mg/kg sediment dw	552 mg/kg sediment dw	2251 mg/L	28 mg/kg soil dw	160 mg/kg food
METHANOL 67-56-1	77 mg/kg sediment dw	7.7 mg/kg sediment dw	100 mg/L	100 mg/kg soil dw	-
MORPHOLINE 110-91-8	1.83 mg/kg sediment dw	0.183 mg/kg sediment dw	10 mg/L	0.269 mg/kg soil dw	-

8.2. Exposure controls

Engineering controls No information available.

Personal protective equipment

Eye/face protection Tight sealing safety goggles. Safety glasses with side shields are recommended for medical or industrial exposures.

Hand protection Impervious gloves. Wear suitable gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

Environmental exposure controls No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Aerosol
Appearance	Aerosol
Colour	Colourless
Odour	Slight. Alcoholic. Ammonia.
Odour threshold	No information available

Property	Values	Remarks • Method
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	No data available	None known
Flammability	No data available	None known
Flammability Limit in Air	No data available	None known
Upper flammability or explosive	No data available	

limits		
Lower flammability or explosive limits	No data available	
Flash point	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
pH	11	pH (concentrated solution): 11.0
pH (as aqueous solution)	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Water solubility	No data available	Miscible with water
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Vapour pressure	No data available	None known
Relative density	0.946 @ 20°C	None known
Bulk density	No data available	
Liquid Density	No data available	
Relative vapour density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

9.2. Other information

9.2.1. Information with regards to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Heat, flames and sparks.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure

Product Information

Inhalation	Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation. Causes mild skin irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	May cause redness and tearing of the eyes. Prolonged contact may cause redness and irritation.
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Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	19,036.70 mg/kg
ATEmix (dermal)	41,616.10 mg/kg
ATEmix (inhalation-gas)	127,574.30 ppm
ATEmix (inhalation-vapour)	2,669.3567 mg/l
ATEmix (inhalation-dust/mist)	32.50 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
ETHANOL	= 7060 mg/kg (Rat)	-	= 116.9 mg/L (Rat) 4 h = 133.8 mg/L (Rat) 4 h
Ethylene glycol	= 4700 mg/kg (Rat)	= 10600 mg/kg (Rat)	> 2.5 mg/L (Rat) 6 h
BUTANE	-	-	= 658 g/m ³ (Rat) 4 h
PROPANE	-	-	> 800000 ppm (Rat) 15 min
ISOBUTANE	-	-	> 800000 ppm (Rat) 15 min
PROPAN-2-OL	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	> 10000 ppm (Rat) 6 h
METHANOL	= 6200 mg/kg (Rat)	= 15840 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 h
Ammonia%	= 350 mg/kg (Rat)	-	-
MORPHOLINE	= 1050 mg/kg (Rat)	310 - 810 mg/kg (Rabbit)	> 8000 ppm (Rat) 8 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes mild skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

Respiratory or skin sensitisation No information available.

Germ cell mutagenicity No information available.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

Chemical name	European Union
BUTANE	Muta. 1B
PROPANE	Muta. 1B
ISOBUTANE	Muta. 1B

Carcinogenicity No information available.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	European Union
BUTANE	Carc. 1A
PROPANE	Carc. 1A
ISOBUTANE	Carc. 1A

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity

Unknown aquatic toxicity

Contains 0.13718 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
ETHANOL	-	LC50: 12.0 - 16.0mL/L (96h, Oncorhynchus mykiss) LC50: >100mg/L (96h, Pimephales promelas) LC50: 13400 - 15100mg/L (96h, Pimephales promelas)	-	LC50: 9268 - 14221mg/L (48h, Daphnia magna) EC50: =2mg/L (48h, Daphnia magna)
Ethylene glycol	EC50: 6500 - 13000mg/L (96h, Pseudokirchneriella subcapitata)	LC50: =41000mg/L (96h, Oncorhynchus mykiss) LC50: 14 - 18mL/L (96h, Oncorhynchus mykiss) LC50: =27540mg/L (96h, Lepomis macrochirus) LC50: =40761mg/L (96h, Oncorhynchus mykiss) LC50: 40000 - 60000mg/L (96h, Pimephales promelas) LC50: =16000mg/L (96h, Poecilia reticulata)	-	EC50: =46300mg/L (48h, Daphnia magna)
PROPAN-2-OL	EC50: >1000mg/L (96h, Desmodesmus subspicatus) EC50: >1000mg/L (72h, Desmodesmus subspicatus)	LC50: =9640mg/L (96h, Pimephales promelas) LC50: =11130mg/L (96h, Pimephales promelas) LC50: >1400000µg/L (96h, Lepomis macrochirus)	-	EC50: =13299mg/L (48h, Daphnia magna)
METHANOL	-	LC50: =28200mg/L (96h, Pimephales promelas) LC50: >100mg/L (96h, Pimephales promelas) LC50: 19500 - 20700mg/L (96h, Oncorhynchus mykiss) LC50: 18 - 20mL/L (96h, Oncorhynchus mykiss) LC50: 13500 - 17600mg/L (96h, Lepomis macrochirus)	-	-
Ammonia%	-	LC50: =8.2mg/L (96h, Pimephales promelas)	-	EC50: =0.66mg/L (48h, water flea) EC50: =0.66mg/L (48h, Daphnia pulex)
MORPHOLINE	EC50: =28mg/L (96h, Pseudokirchneriella subcapitata)	LC50: =350mg/L (96h, Lepomis macrochirus) LC50: 375 - 460mg/L (96h, Oncorhynchus mykiss) LC50: >1000mg/L (96h, Brachydanio rerio)	-	-

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Component Information

Chemical name	Partition coefficient
ETHANOL	-0.35
Ethylene glycol	-1.36
BUTANE	2.31
PROPANE	1.09
ISOBUTANE	2.8
PROPAN-2-OL	0.05
METHANOL	-0.77
MORPHOLINE	-0.84

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB above the threshold of declaration.

Chemical name	PBT and vPvB assessment
ETHANOL	The substance is not PBT / vPvB
Ethylene glycol	The substance is not PBT / vPvB
BUTANE	The substance is not PBT / vPvB
PROPANE	The substance is not PBT / vPvB
ISOBUTANE	The substance is not PBT / vPvB
PROPAN-2-OL	The substance is not PBT / vPvB
METHANOL	The substance is not PBT / vPvB
MORPHOLINE	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

SECTION 14: Transport information

IATA

14.1 UN number or ID number	UN1950
14.2 UN proper shipping name	Aerosols, non-flammable
14.3 Transport hazard class(es)	2.2
14.4 Packing group	Not regulated
Description	UN1950, Aerosols, non-flammable, 2.2
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	A145, A167, A98, A802
ERG Code	2L

IMDG

14.1 UN number or ID number	UN1950
14.2 UN proper shipping name	Aerosols
14.3 Transport hazard class(es)	2.2
14.4 Packing group	Not regulated
Description	UN1950, Aerosols, 2.2, Marine pollutant
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	63,190, 277, 327, 344, 381, 959
EmS-No.	F-D, S-U
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN number or ID number	UN1950
14.2 UN proper shipping name	Aerosols
14.3 Transport hazard class(es)	2.2
14.4 Packing group	Not regulated
Description	UN1950, Aerosols, 2.2, Environmentally Hazardous
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	190, 327, 344, 625
Classification code	5A

ADR

14.1 UN number or ID number	UN1950
14.2 UN proper shipping name	Aerosols
14.3 Transport hazard class(es)	2.2
14.4 Packing group	Not regulated
Description	UN1950, Aerosols, 2.2, (E), Environmentally Hazardous
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	327, 625, 344, 190
Classification code	5A
Tunnel restriction code	(E)

SECTION 15: Regulatory information

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

National regulations

France

Occupational Illnesses (R-463-3, France)

Chemical name	French RG number
ETHANOL - 64-17-5	RG 84
Ethylene glycol - 107-21-1	RG 84
PROPAN-2-OL - 67-63-0	RG 84
METHANOL - 67-56-1	RG 84

Germany

Water hazard class (WGK) slightly hazardous to water (WGK 1)

Netherlands

Chemical name	Netherlands - List of Carcinogens	Netherlands - List of Mutagens	Netherlands - List of Reproductive Toxins
ETHANOL	Present	-	Fertility Category 1A Development Category 1A Can be harmful via breastfeeding

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
BUTANE - 106-97-8	28. 29. 75.	-
ISOBUTANE - 75-28-5	28. 29. 75.	-
PROPAN-2-OL - 67-63-0	75.	-
METHANOL - 67-56-1	69. 75.	-
Ammonia% - 1336-21-6	75.	-
MORPHOLINE - 110-91-8	75.	-

Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

P3a - FLAMMABLE AEROSOLS

P3b - FLAMMABLE AEROSOLS

Named dangerous substances per Seveso Directive (2012/18/EU)

Chemical name	Lower-tier requirements (tons)	Upper-tier requirements (tons)
METHANOL - 67-56-1	500	5000
Ammonia% - 1336-21-6	-	200

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

Biocidal Products Regulation (EU) No 528/2012 (BPR)

Chemical name	Biocidal Products Regulation (EU) No 528/2012 (BPR)
ETHANOL - 64-17-5	Product-type 1: Human hygiene Product-type 2: Disinfectants and algacides not intended for direct application to humans or animals Product-type 4: Food and feed area
PROPAN-2-OL - 67-63-0	Product-type 2: Disinfectants and algacides not intended for direct application to humans or animals Product-type 4: Food and feed area Product-type 1: Human hygiene

International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECL	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
 ENCS - Japan Existing and New Chemical Substances
 IECSC - China Inventory of Existing Chemical Substances
 KECL - Korean Existing and Evaluated Chemical Substances
 PICCS - Philippines Inventory of Chemicals and Chemical Substances
 AIIC - Australian Inventory of Industrial Chemicals
 NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

H220 - Extremely flammable gas
 H225 - Highly flammable liquid and vapour
 H226 - Flammable liquid and vapour
 H280 - Contains gas under pressure; may explode 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
 H319 - Causes serious eye irritation
 H331 - Toxic if inhaled

H332 - Harmful if inhaled
H336 - May cause drowsiness or dizziness
H370 - Causes damage to organs
H373 - May cause damage to organs through prolonged or repeated exposure
H400 - Very toxic to aquatic life

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA (time-weighted average) STEL (Short Term Exposure Limit)
Ceiling * Skin designation
+ Sensitisers

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	On basis of test data
Ozone	Calculation method
Flammable aerosol	On basis of test data

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AELG(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications

Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

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Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Disclaimer

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End of Safety Data Sheet