

SERVICE BEST B.V. De Run 4271 5503 LM VELDHOVEN The Netherlands Phone: +31 40 230 23 00 Fax: +31 40 230 23 02 E-mail: info@servicebest.com	SAFETY DATA SHEET	Page : 1 / 17
	Protecton De-icer	Revision nr : 2
		Issue date : 03/12/2018
		Supersedes : 24/04/2015
1890904 (1850699) 500 mL		

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

1.1. Product identifier

Trade name/designation : Protecton De-icer

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

Specific use(s) : Anti-freeze and de-icing products

1.3. Details of the supplier of the safety data sheet

Company : SERVICE BEST B.V.
 De Run 4271
 5503 LM VELDHOVEN
 The Netherlands
 Phone: +31 40 230 23 00
 Fax: +31 40 230 23 02
 E-mail: info@servicebest.com

1.4. Emergency telephone number

Emergency telephone : BELGIE/BELGIQUE/LUXEMBURG/LUXEMBOURG
 Centre Anti-Poisons/Antigifcentrum/Giftnotrufzentrale
 c/o Hôpital Central de la Base - Reine Astrid
 +32 70 245 245

NETHERLANDS
 Nationaal Vergiftigingen Informatie Centrum (NVIC)
 NB Uitsluitend bestemd om professionele hulpverleners te informeren
 bij acute vergiftigingen
 +31 30 274 88 88

IRELAND (REPUBLIC OF)
 National Poisons Information Centre
 Beaumont Hospital
 +353 18 37 99 64/+353 1 809 21 66

UNITED KINGDOM
 National Poisons Information Service
 (Newcastle Centre)
 Regional Drugs and Therapeutics Centre,
 Wolfson Unit
 0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EU) 1272/2008

CLP-Classification : The product is classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

Flam. Liq. 2 H225
 Eye Irrit. 2 H319

Full text of H-phrases: see section 16

2.1.2. Classification according to EU Directives 67/548/EEC or 1999/45/EC

Classification : This mixture is classified as hazardous according to 1999/45/EC.
 F; R11

Full text of R-phrases: see section 16

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2.2. Label elements

2.2.1. Labelling according to Regulation (EU) 1272/2008

Hazard pictograms :



GHS02

GHS07

Signal word :

Danger

Hazard statements :

H225 - Highly flammable liquid and vapour.
H319 - Causes serious eye irritation.

Precautionary statements :

P102 - Keep out of reach of children.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
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.
P501 - Dispose of contents/ container to an approved waste disposal plant.

2.2.2. Labelling according to Directives (67/548 - 1999/45)

Not relevant

2.3. Other hazards

Other hazards :

PBT/vPvB data :
No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Substance name	Product identifier	%	Classification according to Directive 67/548/EEC
Ethanol	(CAS No.) 64-17-5 (EC No) 200-578-6 (EC Index) 603-002-00-5 (REACH-no) 01-2119457610-43-XXXX	< 70	F; R11
Ethylene glycol	(CAS No.) 107-21-1 (EC No) 203-473-3 (EC Index) 603-027-00-1	< 2,5	Xn; R22
Butanone	(CAS No.) 78-93-3 (EC No) 201-159-0 (EC Index) 606-002-00-3	< 1,5	F; R11 Xi; R36 R66 R67

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Ethanol	(CAS No.) 64-17-5 (EC No) 200-578-6 (EC Index) 603-002-00-5 (REACH-no) 01-2119457610-43-XXXX	< 70	Flam. Liq. 2, H225 Eye Irrit. 2, H319
Ethylene glycol	(CAS No.) 107-21-1 (EC No) 203-473-3 (EC Index) 603-027-00-1	< 2,5	Acute Tox. 4 (Oral), H302
Butanone	(CAS No.) 78-93-3 (EC No) 201-159-0 (EC Index) 606-002-00-3	< 1,5	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336

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

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SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	: Keep at rest. Provide fresh air. When in doubt or if symptoms are observed, get medical advice.
Skin contact	: Wash with plenty of soap and water Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. When in doubt or if symptoms are observed, get medical advice.
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. Call a physician if irritation develops or persists.
In case of ingestion	: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person or a person with cramps. Get medical advice/attention.
Additional advice	: First aider: Pay attention to self-protection! See also section 8 Never give anything by mouth to an unconscious person or a person with cramps. Show this safety data sheet to the doctor in attendance. Treat symptomatically.

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

Inhalation	: May cause respiratory irritation. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Skin contact	: May be irritating.
Eye contact	: The following symptoms may occur: Redness, pain Causes eye irritation.
Ingestion	: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

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

Not applicable

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray, alcohol resistant foam, Carbon dioxide, Dry extinguishing powder
Extinguishing media which must not be used for safety reasons	: Strong water jet

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Highly flammable
Specific hazards	: Vapours can form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapours can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. Do not allow run-off from fire-fighting to enter drains or water courses. Dispose according to legislation. Hazardous decomposition products Carbon oxides

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The pressure in sealed containers can increase under the influence of heat.

5.3. Advice for firefighters

Advice for firefighters

- : Special protective equipment for firefighters. .
- In case of fire: Wear self-contained breathing apparatus.
- Evacuate area.
- Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

- : Provide adequate ventilation.
- Evacuate area.
- Use personal protective equipment as required.
- Personal protection equipment: see section 8
- Avoid contact with skin, eyes and clothes.
- Do not breathe vapour/spray.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Ensure that the equipment is adequately grounded.
- Use only non-sparking tools.
- Use explosion-proof machinery, apparatus, ventilation facilities, tools etc.

For emergency responders

- : Ensure procedures and training for emergency decontamination and disposal are in place.
- Personal protection equipment: see section 8.

6.2. Environmental precautions

Environmental precautions

- : Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

- : Stop leak if safe to do so.
- Dam up.
- Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite or powdered limestone
- Collect in closed and suitable containers for disposal.
- Dispose according to legislation.
- Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

6.4. Reference to other sections

Personal protection equipment: see section 8

Disposal: see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling

- : Provide adequate ventilation.
- Use personal protective equipment as required.
- Personal protection equipment: see section 8
- Avoid contact with skin, eyes and clothes.
- Do not breathe vapour/spray.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time).
- Take any precaution to avoid mixing with incompatible materials.
- See also section 10

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Advices on general occupational hygiene :

After use replace the closing cap immediately.
 Do not allow to enter into surface water or drains.

: Keep good industrial hygiene.
 Wash hands and face before breaks and immediately after handling of the product.
 When using do not eat, drink or smoke.
 Keep work clothes separately.
 Take off contaminated clothing.
 Wash contaminated clothing before reuse.
 Keep away from food, drink and animal feedingstuffs.

7.2. Conditions for safe storage, including any incompatibilities

Storage :

Storage of flammable liquids
 Do not store near or with any of the incompatible materials listed in section 10.
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Keep containers tightly closed in a dry, cool and well-ventilated place.

Packaging materials :

Keep/Store only in original container.

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit values :

Ethylene glycol (107-21-1)		
EU	IOELV TWA (mg/m ³)	52 mg/m ³
EU	IOELV TWA (ppm)	20 ppm
EU	IOELV STEL (mg/m ³)	104 mg/m ³
EU	IOELV STEL (ppm)	40 ppm
Austria	MAK (mg/m ³)	26 mg/m ³
Austria	MAK (ppm)	10 ppm
Austria	MAK Short time value (mg/m ³)	52 mg/m ³
Austria	MAK Short time value (ppm)	20 ppm
Bulgaria	OEL TWA (mg/m ³)	52 mg/m ³
Bulgaria	OEL TWA (ppm)	20 ppm
Bulgaria	OEL STEL (mg/m ³)	104 mg/m ³
Bulgaria	OEL STEL (ppm)	40 ppm
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	52 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	20 ppm
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m ³)	104 mg/m ³
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	40 ppm
Cyprus	OEL TWA (mg/m ³)	52 mg/m ³
Cyprus	OEL TWA (ppm)	20 ppm
Cyprus	OEL STEL (mg/m ³)	104 mg/m ³
Cyprus	OEL STEL (ppm)	40 ppm
France	VLE (mg/m ³)	104 mg/m ³ (indicative limit-vapor)
France	VLE (ppm)	40 ppm (indicative limit-vapor)
France	VME (mg/m ³)	52 mg/m ³ (indicative limit-vapor)

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France	VME (ppm)	20 ppm (indicative limit-vapor)
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	26 mg/m ³ (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	TRGS 900 Occupational exposure limit value (ppm)	10 ppm (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Gibraltar	OEL TWA (mg/m ³)	52 mg/m ³
Gibraltar	OEL TWA (ppm)	20 ppm
Gibraltar	OEL STEL (mg/m ³)	104 mg/m ³
Gibraltar	OEL STEL (ppm)	40 ppm
Greece	OEL TWA (mg/m ³)	125 mg/m ³ (vapor)
Greece	OEL TWA (ppm)	50 ppm (vapor)
Greece	OEL STEL (mg/m ³)	125 mg/m ³ (vapor)
Greece	OEL STEL (ppm)	50 ppm (vapor)
Italy - Portugal - USA ACGIH	ACGIH Ceiling (mg/m ³)	100 mg/m ³ (aerosol only)
Italy	OEL TWA (mg/m ³)	52 mg/m ³
Italy	OEL TWA (ppm)	20 ppm
Italy	OEL STEL (mg/m ³)	104 mg/m ³
Italy	OEL STEL (ppm)	40 ppm
Latvia	OEL TWA (mg/m ³)	52 mg/m ³
Latvia	OEL TWA (ppm)	20 ppm
Spain	VLA-ED (mg/m ³)	52 mg/m ³ (indicative limit value)
Spain	VLA-ED (ppm)	20 ppm (indicative limit value)
Spain	VLA-EC (mg/m ³)	104 mg/m ³
Spain	VLA-EC (ppm)	40 ppm
Switzerland	VLE (mg/m ³)	52 mg/m ³
Switzerland	VLE (ppm)	20 ppm
Switzerland	VME (mg/m ³)	26 mg/m ³
Switzerland	VME (ppm)	10 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	52 mg/m ³ (fume) 10 mg/m ³ (droplets)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	104 mg/m ³
United Kingdom	WEL TWA (mg/m ³)	10 mg/m ³ (particulates) 52 mg/m ³ (vapour)
United Kingdom	WEL TWA (ppm)	20 ppm (vapour)
United Kingdom	WEL STEL (mg/m ³)	104 mg/m ³ (vapour) 30 mg/m ³ (calculated-particulate)
United Kingdom	WEL STEL (ppm)	40 ppm (vapour)
Czech Republic	Expoziční limity (PEL) (mg/m ³)	50 mg/m ³
Denmark	Grænseværdie (langvarig) (mg/m ³)	26 mg/m ³ 10 mg/m ³ (vapor)
Denmark	Grænseværdie (langvarig) (ppm)	10 ppm
Finland	HTP-arvo (8h) (mg/m ³)	50 mg/m ³
Finland	HTP-arvo (8h) (ppm)	20 ppm
Finland	HTP-arvo (15 min)	100 mg/m ³
Finland	HTP-arvo (15 min) (ppm)	40 ppm
Hungary	AK-érték	52 mg/m ³
Hungary	CK-érték	104 mg/m ³

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Ireland	OEL (8 hours ref) (mg/m ³)	10 mg/m ³ (particulate) 52 mg/m ³ (vapour)
Ireland	OEL (8 hours ref) (ppm)	20 ppm (vapour)
Ireland	OEL (15 min ref) (mg/m ³)	104 mg/m ³ (vapour)
Ireland	OEL (15 min ref) (ppm)	40 ppm (particulate)
Lithuania	IPRV (mg/m ³)	25 mg/m ³ (aerosol and vapor)
Lithuania	IPRV (ppm)	10 ppm (aerosol and vapor)
Lithuania	TPRV (mg/m ³)	50 mg/m ³ (aerosol and vapor)
Lithuania	TPRV (ppm)	20 ppm (aerosol and vapor)
Malta	OEL TWA (mg/m ³)	52 mg/m ³
Malta	OEL TWA (ppm)	20 ppm
Malta	OEL STEL (mg/m ³)	104 mg/m ³
Malta	OEL STEL (ppm)	40 ppm
Norway	Gjennomsnittsverdier (AN) (mg/m ³)	10 mg/m ³ (equal to the standard for nuisance dust-dust) 52 mg/m ³ (Total sum of limit values for both vapor and dust)
Norway	Gjennomsnittsverdier (AN) (ppm)	20 ppm (Total sum of limit values for both vapor and dust-total dust and vapor)
Norway	Gjennomsnittsverdier (Korttidsverdi) (mg/m ³)	104 mg/m ³ (Norm is based on the sum calculation for the total gas and particulate form of the substance-dust)
Norway	Gjennomsnittsverdier (Korttidsverdi) (ppm)	40 ppm (Norm is based on the sum calculation for the total gas and particulate form of the substance)
Norway	Gjennomsnittsverdier (Takverdi) (ppm)	25 ppm (vapor)
Poland	NDS (mg/m ³)	15 mg/m ³
Poland	NDSch (mg/m ³)	50 mg/m ³
Romania	OEL TWA (mg/m ³)	52 mg/m ³
Romania	OEL TWA (ppm)	20 ppm
Romania	OEL STEL (mg/m ³)	104 mg/m ³
Romania	OEL STEL (ppm)	40 ppm
Slovakia	NPHV (priemerná) (mg/m ³)	52 mg/m ³
Slovakia	NPHV (priemerná) (ppm)	20 ppm
Slovakia	NPHV (Hraničná) (mg/m ³)	104 mg/m ³
Sweden	nivågränsvärde (NVG) (mg/m ³)	25 mg/m ³ (aerosol and vapor)
Sweden	nivågränsvärde (NVG) (ppm)	10 ppm (aerosol and vapor)
Sweden	kortidsvärde (KTV) (mg/m ³)	50 mg/m ³ (aerosol and vapor)
Sweden	kortidsvärde (KTV) (ppm)	20 ppm (aerosol and vapor)
Butanone (78-93-3)		
EU	IOELV TWA (mg/m ³)	600 mg/m ³
EU	IOELV TWA (ppm)	200 ppm
EU	IOELV STEL (mg/m ³)	900 mg/m ³
EU	IOELV STEL (ppm)	300 ppm
Austria	MAK (mg/m ³)	295 mg/m ³
Austria	MAK (ppm)	100 ppm
Austria	MAK Short time value (mg/m ³)	590 mg/m ³
Austria	MAK Short time value (ppm)	200 ppm
Belgium	Limit value (mg/m ³)	600 mg/m ³
Belgium	Limit value (ppm)	200 ppm

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Belgium	Short time value (mg/m ³)	900 mg/m ³
Belgium	Short time value (ppm)	300 ppm
Bulgaria	OEL TWA (mg/m ³)	590 mg/m ³
Bulgaria	OEL STEL (mg/m ³)	885 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	600 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	200 ppm
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m ³)	900 mg/m ³
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	300 ppm
Cyprus	OEL TWA (mg/m ³)	600 mg/m ³
Cyprus	OEL TWA (ppm)	200 ppm
Cyprus	OEL STEL (mg/m ³)	900 mg/m ³
Cyprus	OEL STEL (ppm)	300 ppm
France	VLE (mg/m ³)	900 mg/m ³ (restrictive limit)
France	VLE (ppm)	300 ppm (restrictive limit)
France	VME (mg/m ³)	600 mg/m ³ (restrictive limit)
France	VME (ppm)	200 ppm (restrictive limit)
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	600 mg/m ³ (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	TRGS 900 Occupational exposure limit value (ppm)	200 ppm (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	TRGS 903 (BGW)	5 mg/l (Medium: urine - Time: end of shift - Parameter: 2-Butanone)
Gibraltar	OEL TWA (mg/m ³)	600 mg/m ³
Gibraltar	OEL TWA (ppm)	200 ppm
Gibraltar	OEL STEL (mg/m ³)	900 mg/m ³
Gibraltar	OEL STEL (ppm)	300 ppm
Greece	OEL TWA (mg/m ³)	600 mg/m ³
Greece	OEL TWA (ppm)	200 ppm
Greece	OEL STEL (mg/m ³)	900 mg/m ³
Greece	OEL STEL (ppm)	300 ppm
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200 ppm
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	300 ppm
Italy	OEL TWA (mg/m ³)	600 mg/m ³
Italy	OEL TWA (ppm)	200 ppm
Italy	OEL STEL (mg/m ³)	900 mg/m ³
Italy	OEL STEL (ppm)	300 ppm
Latvia	OEL TWA (mg/m ³)	200 mg/m ³
Latvia	OEL TWA (ppm)	67 ppm
Spain	VLA-ED (mg/m ³)	600 mg/m ³ (indicative limit value)
Spain	VLA-ED (ppm)	200 ppm (indicative limit value)
Spain	VLA-EC (mg/m ³)	900 mg/m ³
Spain	VLA-EC (ppm)	300 ppm
Switzerland	VLE (mg/m ³)	590 mg/m ³
Switzerland	VLE (ppm)	200 ppm

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Switzerland	VME (mg/m ³)	590 mg/m ³
Switzerland	VME (ppm)	200 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	590 mg/m ³
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	900 mg/m ³
United Kingdom	WEL TWA (mg/m ³)	600 mg/m ³
United Kingdom	WEL TWA (ppm)	200 ppm
United Kingdom	WEL STEL (mg/m ³)	899 mg/m ³
United Kingdom	WEL STEL (ppm)	300 ppm
Czech Republic	Expoziční limity (PEL) (mg/m ³)	600 mg/m ³
Denmark	Grænseværdie (langvarig) (mg/m ³)	145 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	50 ppm
Finland	HTP-arvo (15 min)	300 mg/m ³
Finland	HTP-arvo (15 min) (ppm)	100 ppm
Hungary	AK-érték	600 mg/m ³
Hungary	CK-érték	900 mg/m ³
Ireland	OEL (8 hours ref) (mg/m ³)	600 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	200 ppm
Ireland	OEL (15 min ref) (mg/m ³)	900 mg/m ³
Ireland	OEL (15 min ref) (ppm)	300 ppm
Lithuania	IPRV (mg/m ³)	600 mg/m ³
Lithuania	IPRV (ppm)	200 ppm
Lithuania	TPRV (mg/m ³)	900 mg/m ³
Lithuania	TPRV (ppm)	300 ppm
Malta	OEL TWA (mg/m ³)	600 mg/m ³
Malta	OEL TWA (ppm)	200 ppm
Malta	OEL STEL (mg/m ³)	900 mg/m ³
Malta	OEL STEL (ppm)	300 ppm
Norway	Gjennomsnittsverdier (AN) (mg/m ³)	220 mg/m ³
Norway	Gjennomsnittsverdier (AN) (ppm)	75 ppm
Norway	Gjennomsnittsverdier (Korttidsverdi) (mg/m ³)	275 mg/m ³
Norway	Gjennomsnittsverdier (Korttidsverdi) (ppm)	112,5 ppm
Poland	NDS (mg/m ³)	450 mg/m ³
Poland	NDSch (mg/m ³)	900 mg/m ³
Romania	OEL TWA (mg/m ³)	600 mg/m ³ 200 mg/m ³ (regulated under Methyl ethyl ketone)
Romania	OEL TWA (ppm)	200 ppm 63 ppm (regulated under Methyl ethyl ketone)
Romania	OEL STEL (mg/m ³)	900 mg/m ³
Romania	OEL STEL (ppm)	300 ppm
Slovakia	NPHV (priemerná) (mg/m ³)	600 mg/m ³
Slovakia	NPHV (priemerná) (ppm)	200 ppm
Slovakia	NPHV (Hraničná) (mg/m ³)	900 mg/m ³
Sweden	nivågränsvärde (NVG) (mg/m ³)	150 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	50 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	300 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	100 ppm

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Ethanol (64-17-5)		
Austria	MAK (mg/m ³)	1900 mg/m ³
Austria	MAK (ppm)	1000 ppm
Austria	MAK Short time value (mg/m ³)	3800 mg/m ³
Austria	MAK Short time value (ppm)	2000 ppm
Belgium	Limit value (mg/m ³)	1907 mg/m ³
Belgium	Limit value (ppm)	1000 ppm
Bulgaria	OEL TWA (mg/m ³)	1000 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	1900 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	1000 ppm
France	VLE (mg/m ³)	9500 mg/m ³
France	VLE (ppm)	5000 ppm
France	VME (mg/m ³)	1900 mg/m ³
France	VME (ppm)	1000 ppm
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	960 mg/m ³ (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	TRGS 900 Occupational exposure limit value (ppm)	500 ppm (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Greece	OEL TWA (mg/m ³)	1900 mg/m ³
Greece	OEL TWA (ppm)	1000 ppm
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	1000 ppm
Latvia	OEL TWA (mg/m ³)	1000 mg/m ³
Spain	VLA-EC (mg/m ³)	1910 mg/m ³
Spain	VLA-EC (ppm)	1000 ppm
Switzerland	VLE (mg/m ³)	1920 mg/m ³
Switzerland	VLE (ppm)	1000 ppm
Switzerland	VME (mg/m ³)	960 mg/m ³
Switzerland	VME (ppm)	500 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	260 mg/m ³
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	1900 mg/m ³
United Kingdom	WEL TWA (mg/m ³)	1920 mg/m ³
United Kingdom	WEL TWA (ppm)	1000 ppm
United Kingdom	WEL STEL (mg/m ³)	5760 mg/m ³ (calculated)
United Kingdom	WEL STEL (ppm)	3000 ppm (calculated)
Czech Republic	Expoziční limity (PEL) (mg/m ³)	1000 mg/m ³
Denmark	Grænseværdie (langvarig) (mg/m ³)	1900 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	1000 ppm
Finland	HTP-arvo (8h) (mg/m ³)	1900 mg/m ³
Finland	HTP-arvo (8h) (ppm)	1000 ppm
Finland	HTP-arvo (15 min)	2500 mg/m ³
Finland	HTP-arvo (15 min) (ppm)	1300 ppm
Hungary	AK-érték	1900 mg/m ³
Hungary	CK-érték	7600 mg/m ³
Ireland	OEL (15 min ref) (ppm)	1000 ppm
Lithuania	IPRV (mg/m ³)	1000 mg/m ³
Lithuania	IPRV (ppm)	500 ppm
Lithuania	TPRV (mg/m ³)	1900 mg/m ³

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Lithuania	TPRV (ppm)	1000 ppm
Norway	Gjennomsnittsverdier (AN) (mg/m ³)	950 mg/m ³
Norway	Gjennomsnittsverdier (AN) (ppm)	500 ppm
Norway	Gjennomsnittsverdier (Kortidsverdi) (mg/m ³)	1187,5 mg/m ³
Norway	Gjennomsnittsverdier (Kortidsverdi) (ppm)	625 ppm
Poland	NDS (mg/m ³)	1900 mg/m ³
Romania	OEL TWA (mg/m ³)	1900 mg/m ³
Romania	OEL TWA (ppm)	1000 ppm
Romania	OEL STEL (mg/m ³)	9500 mg/m ³
Romania	OEL STEL (ppm)	5000 ppm
Slovakia	NPHV (priemerná) (mg/m ³)	960 mg/m ³
Slovakia	NPHV (priemerná) (ppm)	500 ppm
Slovakia	NPHV (Hraničná) (mg/m ³)	1920 mg/m ³
Sweden	nivågränsvärde (NVG) (mg/m ³)	1000 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	500 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	1900 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	1000 ppm

Recommended monitoring procedures : Concentration measurement in air
Personal air monitoring

8.2. Exposure controls

Personal protection equipment	: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection	: Not required under normal use. In case of insufficient ventilation, wear suitable respiratory equipment. Full face mask (EN 136) Half-face mask (DIN EN 140) Filter type: ABEK (EN 141)
Hand protection	: The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves.,Neoprene gloves,Wear chemically resistant gloves (tested to EN374) ,NBR (Nitrile rubber),PVA (Polyvinyl alcohol)
Eye protection	: Safety glasses (EN166) Safety glasses with side-shields (EN 166)
Body protection	: Wear suitable protective clothing. Wear suitable coveralls to prevent exposure to the skin. Chemical resistant safety shoes
Thermal hazard protection	: Not required under normal use.
Engineering control measures	: Provide adequate ventilation. Use only in area provided with appropriate exhaust ventilation. Organisational measures to prevent/limit releases, dispersion and exposure : See also section 7 .
Environmental exposure controls	: Do not allow to enter into surface water or drains. Comply with applicable Community environmental protection legislation.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	: liquid
Colour	: blue
Odour	: Alcohol
Odour threshold	: No data available
pH	: No data available
Melting point/freezing point	: -50 °C
Initial boiling point and boiling range	: No data available
Flash point	: 24 °C
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable, liquid
Upper/lower flammability or explosive limits	: No data available
Vapour pressure	: No data available
Vapour density	: No data available
Relative density	: No data available
Water solubility	: Soluble
Solubility in different media	: Ethanol Acetone
Partition coefficient n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Explosive properties	: Not applicable The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.
Oxidising properties	: Not applicable The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	: Highly flammable liquid and vapour. Reference to other sections: 10.5
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10.2. Chemical stability

Stability	: The product is stable under storage at normal ambient temperatures.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	: Reacts vigorously with strong oxidizers and acids See also section 7 Handling and storage
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10.4. Conditions to avoid

Conditions to avoid	: Keep away from sources of heat (e.g. hot surfaces), sparks and open
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flames.
Reference to other sections: 7. Handling and storage

10.5. Incompatible materials

Incompatible materials : Strong acids and oxidizing agents, See also section 7, Handling and storage

10.6. Hazardous decomposition products

Hazardous decomposition products : Burning produces noxious and toxic fumes. Reference to other sections: 5.2

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified (Based on available data, the classification criteria are not met.)

Ethylene glycol (107-21-1)	
LD50/oral/rat	4000 - 10200 mg/kg
LD50/dermal/rat	> 3500 mg/kg (mouse)
LC50/inhalation/4h/rat	> 2,5 (6h)
ATE CLP (oral)	500 mg/kg bodyweight
Butanone (78-93-3)	
LD50/oral/rat	2483 mg/kg
LD50/dermal/rabbit	5000 mg/kg
LC50/inhalation/4h/rat	34 mg/l/4h
LC50/inhalation/4h/rat (ppm)	11700 ppm/4h
Ethanol (64-17-5)	
LD50/oral/rat	> 6000 mg/kg
LD50/dermal/rabbit	> 2000 mg/kg
LC50/inhalation/4h/rat	> 127,4 mg/l

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met.)
pH: No data available

Serious eye damage/eye irritation : Causes serious eye irritation.
pH: No data available

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met.)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met.)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met.)

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met.)

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met.)

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met.)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met.)

Other information

Symptoms related to the physical, chemical and toxicological characteristics, Reference to other sections: 4.2

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SECTION 12: Ecological information

12.1. Toxicity

Toxicity : Ecological injuries are not known or expected under normal use.

Ethylene glycol (107-21-1)	
EC50 Daphnia 1	46300 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	14 - 18 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
Butanone (78-93-3)	
LC50 fish 1	3130 - 3320 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	> 520 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 Daphnia 2	5091 mg/l (Exposure time: 48 h - Species: Daphnia magna)
Ethanol (64-17-5)	
LC50 fish 1	> 10000 mg/l Oncorhynchus mykiss (Rainbow trout)
EC50 Daphnia 1	9268 - 14221 mg/l (48h)
Additional information	LC50, Fish, Leuciscus idus (golden orfe): 8140 mg/l (48 hours) IC5, algae, Scenedesmus quadricauda: 5000 mg/l (168 hours) EC5, Bacteria, Pseudomonas putida: 6500 mg/l (16 hours)

12.2. Persistence and degradability

Persistence and degradability : Readily biodegradable

12.3. Bioaccumulative potential

Bioaccumulation : Does not bioaccumulate.
Partition coefficient n-octanol/water : No data available

12.4. Mobility in soil

Mobility : No data available

12.5. Results of PBT and vPvB assessment

PBT/vPvB data : No data available

12.6. Other adverse effects

Other information :

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product waste: : Handle with care.
Safe handling: see section 7
Refer to manufacturer/supplier for information on recovery/recycling.
Collect and dispose of waste product at an authorised disposal facility.
Dispose according to legislation.

Contaminated packaging : Delivery to an approved waste disposal company.
Dispose according to legislation.

Further ecological information : Avoid release to the environment.

List of proposed waste codes/waste designations in accordance with EWC : Classified as hazardous waste according to European Union regulations.
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
The following Waste Codes are only suggestions:
07 01 04* - other organic solvents, washing liquids and mother liquors

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SECTION 14: Transport information

14.1. UN number

UN number : 1987

14.2. UN proper shipping name

Proper Shipping Name : ALCOHOLS, N.O.S.(Ethanol)
 Proper shipping name IATA/IMDG : ALCOHOLS, N.O.S.(Ethanol)

14.3. Transport hazard class(es)

14.3.1. Overland transport

Class(es) : 3 - Flammable liquid
 Hazard identification number (Kemler No.) : 33
 Classification code : F1
 ADR/RID-Labels : 3 - Flammable liquid



14.3.2. Inland waterway transport (ADN) No data available

14.3.3. Transport by sea

Class or Division : 3 - flammable liquids

14.3.4. Air transport

Class or Division : 3 - flammable liquids

14.4. Packing group

Packing group : III

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special precautions for user : No data available.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to
 Annex XVII of the REACH Regulation (EC) No
 1907/2006 :

3. Liquid substances or mixtures which are regarded
 as dangerous in accordance with Directive
 1999/45/EC or are fulfilling the criteria for any of the
 following hazard classes or categories set out in
 Annex I to Regulation (EC) No 1272/2008 : Protecton De-icer

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3.b. Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10 : Ethylene glycol

40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not. : Protecton De-icer

This product contains an ingredient according to the candidate list of Annex XIV of the REACH Regulation 1907/2006/EC. : none
 Authorisations : Not applicable

15.1.2. National regulations

DE : WGK : 1
 FR : Installations classées : 143x
 NL : ABM : 11 - Weinig schadelijk voor in het water levende organismen (B)

15.2. Chemical safety assessment

Chemical Safety Assessment : A Chemical Safety Assessment has been carried out for this substance. (Ethanol)

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Acute Tox. 4 (Oral) : Acute toxicity Category 4
 Eye Irrit. 2 : Serious eye damage/eye irritation Category 2
 Flam. Liq. 2 : Flammable liquids, Category 2
 STOT SE 3 : Specific target organ toxicity — Single exposure, Category 3, Narcosis
 H225 : Highly flammable liquid and vapour.
 H302 : Harmful if swallowed.
 H319 : Causes serious eye irritation.
 H336 : May cause drowsiness or dizziness.
 R11 : Highly flammable.
 R22 : Harmful if swallowed.
 R36 : Irritating to eyes.
 R66 : Repeated exposure may cause skin dryness or cracking.
 R67 : Vapours may cause drowsiness and dizziness.
 F : Highly flammable
 Xi : Irritant
 Xn : Harmful

Key literature references and sources for data : European Chemicals Bureau
 SDS Supplier

Other information : Assessment/classification CLP, Article 9, Calculation method.

Abbreviations and acronyms : ABM = Algemene beoordelingsmethodiek
 ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin
 ADR = Accord européen relatif au transport international des marchandises

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Dangereuses par Route

CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC

IATA = International Air Transport Association

IMDG = International Maritime Dangerous Goods Code

LEL = Lower Explosive Limit/Lower Explosion Limit

UEL = Upper Explosion Limit/Upper Explosive Limit

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals

CSR = CSR = Chemical Safety Report

DNEL = DNEL = Derived No Effect Level

LD50 = Median lethal dose

N.O.S. = Not Otherwise Specified

PNEC = Predicted No Effect Concentration

TWA = time weighted average

STEL = Short term exposure limit

TLV = Threshold limits

WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

NA = Not applicable

vPvB = very persistent and very bioaccumulating

The contents and format of this SDS are in accordance with EEC Commission Directive 1999/45/EC, 67/548/EC, 1272/2008/EC and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

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