

SERVICE BEST B.V. De Schakel 60 5651 GH EINDHOVEN The Netherlands Phone: +31 40 230 23 00 Fax: +31 40 230 23 02 E-mail: info@servicebest.com	SAFETY DATA SHEET	Page : 1 / 15
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation : Protecton Antifreeze Concentrate
 UFI : 3W10-Q0K9-7000-7T1N

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

Specific use(s) : Coolant

1.3. Details of the supplier of the safety data sheet

Company : SERVICE BEST B.V.
 De Schakel 60
 5651 GH EINDHOVEN
 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.

Acute Tox. 4 (Oral) H302
 STOT RE 2 H373
 Full text of H-phrases: see section 16

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2.2. Label elements

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

Hazard pictograms (CLP) :



GHS07

GHS08

Signal word : Warning

Hazardous ingredients : Mono ethylene glycol
Di ethylene glycol

Hazard statements (CLP) : H302 - Harmful if swallowed.
H373 - May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Precautionary statements (CLP) : P102 - Keep out of reach of children.
P260 - Do not breathe vapours, spray.
P264 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P301+P312 - IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell.
P330 - Rinse mouth.
P501 - Dispose of contents and container to a hazardous or special waste collection point.

2.3. Other hazards

Other hazards : Results of PBT and vPvB assessment : Not applicable.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ethanediol, ethylene glycol	(CAS No.) 107-21-1 (EC No) 203-473-3 (EC Index) 603-027-00-1 (REACH-no) 01-2119456816-28-XXXX	80 - 95	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
Diethylene glycol	(CAS No.) 111-46-6 (EC No) 203-872-2 (EC Index) 603-140-00-6	0 - 15	Acute Tox. 4 (Oral), H302
Dipotassium tetraborate	(CAS No.) 1332-77-0 (EC No) 215-575-5	0,25 – 0,5	Repr. 2, H361d

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Additional advice : First aider: Pay attention to self-protection!. Concerning personal protective equipment to use, see section 8. Never give anything by mouth to an unconscious person. In case of doubt or persistent symptoms, consult always a physician. Show this safety data sheet to the doctor in attendance. Treat symptomatically.

Inhalation : Remove person to fresh air and keep comfortable for breathing. In case of doubt or persistent symptoms, consult always a physician.

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- Skin contact : Take off contaminated clothing. Gently wash with plenty of soap and water. In case of doubt or persistent symptoms, consult always a physician.
- Eye contact : Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. In case of doubt or persistent symptoms, consult always a physician.
- In case of ingestion : Rinse mouth thoroughly with water. Get medical advice/attention.

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

- Inhalation : May cause respiratory irritation. The following symptoms may occur: Cough, Dizziness, Headache.
- Skin contact : May be irritating. May be absorbed through the skin. Chronic exposure may cause dermatitis. The following symptoms may occur: Dry skin.
- Eye contact : May cause slight irritation. The following symptoms may occur: erythema (redness), Pain.
- Ingestion : Harmful if swallowed. The following symptoms may occur: Abdominal pain, Drowsiness, Dizziness, Nausea, Headache, Vomiting, Unconsciousness, Impairment of the nervous system, Liver and kidney injuries may occur.
- Chronic symptoms : May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

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

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : carbon dioxide (CO₂), powder, alcohol-resistant foam, water spray.
- Unsuitable extinguishing media : Strong water jet .

5.2. Special hazards arising from the substance or mixture

- Specific hazards : Not flammable. Heating causes rise in pressure with risk of bursting.
- Hazardous decomposition products in case of fire : Carbon oxides (CO, CO₂).

5.3. Advice for firefighters

- Firefighting instructions : Evacuate area. Use water spray or fog for cooling exposed containers. Contain the extinguishing fluids by bunding. Prevent fire fighting water from entering the environment.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.
- Other information : Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel : Evacuate unnecessary personnel. Keep upwind. Provide adequate ventilation. Wear recommended personal protective equipment. Concerning personal protective equipment to use, see section 8. Do not breathe vapours. Avoid contact with skin, eyes and clothing.
- For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8.

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6.2. Environmental precautions

Do not allow to enter into surface water or drains. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so. Dam up the liquid spill. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Recover large spills by pumping (use an explosion proof or hand pump). Place in a suitable container for disposal in accordance with the waste regulations (see Section 13). This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Do not breathe vapours. Avoid contact with skin, eyes and clothing. Take any precaution to avoid mixing with Incompatible materials, Refer to Section 10 on Incompatible Materials. Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time). Avoid release to the environment.

Hygiene measures : Keep good industrial hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feedingstuffs. Remove contaminated clothes. Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage : Keep container tightly closed in a cool, well-ventilated place. Hygroscopic. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Refer to the detailed list of incompatible materials in section 10 Stability/Reactivity.

Packaging materials : Keep/Store only in original container.

7.3 Specific end use(s)

Antifreeze.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit values :

Diethylene glycol (111-46-6)		
Austria	MAK (mg/m ³)	44 mg/m ³
Austria	MAK (ppm)	10 ppm
Austria	MAK Short time value (mg/m ³)	176 mg/m ³
Austria	MAK Short time value (ppm)	40 ppm
Bulgaria	OEL TWA (mg/m ³)	10 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	101 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	23 ppm

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Germany	Occupational exposure limit value (mg/m ³)	44 mg/m ³ (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	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)
Latvia	OEL TWA (mg/m ³)	10 mg/m ³
Switzerland	VLE (mg/m ³)	176 mg/m ³
Switzerland	VLE (ppm)	40 ppm
Switzerland	VME (mg/m ³)	44 mg/m ³
Switzerland	VME (ppm)	10 ppm
United Kingdom	WEL TWA (mg/m ³)	101 mg/m ³
United Kingdom	WEL TWA (ppm)	23 ppm
United Kingdom	WEL STEL (mg/m ³)	303 mg/m ³ (calculated)
United Kingdom	WEL STEL (ppm)	69 ppm (calculated)
Denmark	Grænseværdie (langvarig) (mg/m ³)	11 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	2,5 ppm
Estonia	OEL TWA (mg/m ³)	45 mg/m ³
Estonia	OEL TWA (ppm)	10 ppm
Estonia	OEL STEL (mg/m ³)	90 mg/m ³
Estonia	OEL STEL (ppm)	20 ppm
Ireland	OEL (8 hours ref) (mg/m ³)	100 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	23 ppm
Ireland	OEL (15 min ref) (mg/m ³)	300 mg/m ³ (calculated)
Ireland	OEL (15 min ref) (ppm)	69 ppm (calculated)
Lithuania	IPRV (mg/m ³)	45 mg/m ³
Lithuania	IPRV (ppm)	10 ppm
Lithuania	TPRV (mg/m ³)	90 mg/m ³
Lithuania	TPRV (ppm)	20 ppm
Poland	NDS (mg/m ³)	10 mg/m ³ (inhalable aerosol fraction)
Romania	OEL TWA (mg/m ³)	500 mg/m ³
Romania	OEL TWA (ppm)	115 ppm
Romania	OEL STEL (mg/m ³)	800 mg/m ³
Romania	OEL STEL (ppm)	184 ppm
Slovakia	NPHV (priemerná) (mg/m ³)	44 mg/m ³
Slovakia	NPHV (priemerná) (ppm)	10 ppm
Slovakia	NPHV (Hraničná) (mg/m ³)	90 mg/m ³
Slovenia	OEL TWA (mg/m ³)	44 mg/m ³
Slovenia	OEL TWA (ppm)	10 ppm
Slovenia	OEL STEL (mg/m ³)	176 mg/m ³
Slovenia	OEL STEL (ppm)	40 ppm
Sweden	nivågränsvärde (NVG) (mg/m ³)	45 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	10 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	90 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	20 ppm
ethanediol, 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

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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)
France	VME (ppm)	20 ppm (indicative limit-vapor)
Germany	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	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

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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
Estonia	OEL TWA (mg/m ³)	52 mg/m ³ (total concentration of aerosol and vapor)
Estonia	OEL TWA (ppm)	20 ppm (total concentration of aerosol and vapor)
Estonia	OEL STEL (mg/m ³)	104 mg/m ³ (total concentration of aerosol and vapor)
Estonia	OEL STEL (ppm)	40 ppm (total concentration of aerosol and vapor)
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
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)
Luxembourg	OEL TWA (mg/m ³)	52 mg/m ³
Luxembourg	OEL TWA (ppm)	20 ppm
Luxembourg	OEL STEL (mg/m ³)	104 mg/m ³
Luxembourg	OEL STEL (ppm)	40 ppm
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	Grenseverdier (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)

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Norway	Grenseverdier (AN) (ppm)	20 ppm (Total sum of limit values for both vapor and dust-total dust and vapor)
Norway	Grenseverdier (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	Grenseverdier (Korttidsverdi) (ppm)	40 ppm (Norm is based on the sum calculation for the total gas and particulate form of the substance)
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)

Recommended monitoring procedures : Personal air monitoring :. Room air monitoring. Recommended monitoring procedures

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: A (EN 141).
Use compressed air or fresh air breathing apparatus in closed compartments. (EN 137)
- Hand protection : Wear chemically resistant gloves (tested to EN374) . Suitable material: Neoprene. Nitrile rubber. Breakthrough time : >8h. Thickness >0,3mm. Butyl rubber. natural rubber gloves. Polyethylene. Polyvinylchloride (PVC). VITON gloves. Polyvinylalcohol (PVA). Chlorinated polyethylene. Polyurethane. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
- Eye protection : tightly fitting safety goggles (EN 166). During splash contact: face shield (EN 166)
- Body protection : Wear suitable protective clothing. Wear suitable coveralls to prevent exposure to the skin
- Thermal hazard protection : Not required under normal use. Use dedicated equipment.
- Engineering control measures : Provide adequate ventilation. Organisational measures to prevent /limit releases, dispersion and exposure. Safe handling: see section 7 .
- Environmental exposure controls : Avoid release to the environment. 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	: almost odourless
Odour threshold	: No data available
pH	: 8,4 (50%)
Melting point/freezing point	: Not determined
Initial boiling point and boiling range	: 165 °C
Flash point	: 111 °C CC
Evaporation rate	: Not determined
Flammability (solid, gas)	: Not applicable, liquid
Vapour pressure	: No data available
Vapour density	: No data available
Relative density	: 1,13 (20°C)
Density	: 1125 kg/m ³ (20°C)
Water solubility	: completely soluble
Partition coefficient n-octanol/water	: Not determined
Auto-ignition temperature	: > 400 °C
Decomposition temperature	: No data available
Kinematic viscosity	: 21 mm ² /s (20°C)
Dynamic viscosity	: 23,5 mPa·s (20°C)
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.
Explosive limits	: No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity : Reference to other sections: 10.4 & 10.5

10.2. Chemical stability

Stability : The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions : No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

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

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10.5. Incompatible materials

Incompatible materials : oxidising substances. Strong bases. Strong acids. Aluminium. Sulphuric acid. Perchloric acid. Chlorosulfonic acid. Sodium hydroxide. See also section 7.

10.6. Hazardous decomposition products

Hazardous decomposition products : Reference to other sections: 5.2

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

ATE CLP (oral)	531 mg/kg bodyweight
Diethylene glycol (111-46-6)	
LD50/oral/rat	12565 mg/kg
LD50/dermal/rabbit	11890 mg/kg
LC50/inhalation/4h/rat	> 4600 mg/m ³ (Exposure time: 4 h)
ethanediol, ethylene glycol (107-21-1)	
LD50/oral/rat	4000 - 10200 mg/kg
LD50/dermal/rat	10600 mg/kg
LD50/dermal/rabbit	> 3500
Dipotassium tetraborate (12045-78-2)	
LD50/oral/rat	3690 mg/kg
LD50/dermal/rabbit	2000 - 5000 mg/kg
LC50/inhalation/4h/rat	> 2 g/m ³

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met.)
pH: 8,4 (50%)

Serious eye damage/eye irritation : Not classified (Based on available data, the classification criteria are not met.)
pH: 8,4 (50%)

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.)

ethanediol, ethylene glycol (107-21-1)	
NOAEL (chronic, oral, animal/male, 2 years)	1000 mg/kg bodyweight
NOAEL (chronic, oral, animal/female, 2 years)	1500 mg/kg bodyweight

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 : May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

ethanediol, ethylene glycol (107-21-1)	
NOAEL (oral, rat, 90 days)	220 200 mg/kg bodyweight/day OECD Guideline 407
NOAEL (dermal, rat/rabbit, 90 days)	2220 mg/kg bodyweight/day OECD 410

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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

SECTION 12: Ecological information

12.1. Toxicity

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

Diethylene glycol (111-46-6)	
LC50 fish 1	75200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	84000 mg/l (Exposure time: 48 h - Species: Daphnia magna)
ethanediol, ethylene glycol (107-21-1)	
LC50 fish 1	41000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
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])
NOEC (chronic)	15380 mg/l @ 7d Pimephales promelas
Dipotassium tetraborate (12045-78-2)	
LC50 fish 1	80 – 627 mg/l
EC50 Daphnia 1	133 mg/l (Daphnia Magna)

12.2. Persistence and degradability

Persistence and degradability : Ethanediol
Readily biodegradable.

Biodegradation : Ethanediol: 90-100 % Experimental data

12.3. Bioaccumulative potential

Bioaccumulation : Ethanediol
Does not bioaccumulate.

Partition coefficient n-octanol/water : Ethanediol: -1.93

12.4. Mobility in soil

Mobility : Adsorbs on soil.

12.5. Results of PBT and vPvB assessment

PBT/vPvB data : Ethanediol :
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects

Other information : No data available

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.

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

List of proposed waste codes/waste designations in accordance with EWC : Classified as hazardous waste according to European Union regulations.
The following Waste Codes are only suggestions:
07 01 04* - other organic solvents, washing liquids and mother liquors,
150110* - packaging containing residues of or contaminated by dangerous substances
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

SECTION 14: Transport information

14.1. UN number

UN number : NA

14.2. UN proper shipping name

Proper Shipping Name : Not applicable

14.3. Transport hazard class(es)

14.3.1. Overland transport

ADR/RID : Not classified for this transport way.
Class(es) : Not applicable

14.3.2. Inland waterway transport (ADN)

ADN : Not classified for this transport way.

14.3.3. Transport by sea

IMDG : Not classified for this transport way.
Class or Division :

14.3.4. Air transport

ICAO/IATA : Not classified for this transport way.
Class or Division :

14.4. Packing group

Packing group : NA

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special precautions for user : Not applicable.

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

Code: IBC : Not applicable.

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 :

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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 Antifreeze Concentrate

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 : Protecton Antifreeze Concentrate

Contains no substance on the REACH candidate list
 Contains no REACH Annex XIV substances

15.1.2. National regulations

France

Installations classées:

Not applicable

Germany

Reference to AwSV : Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to AwSV, Annex 1)

German storage class (LGK) : LGK 12 - Non-combustible liquids

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

Waterbezwaarlijkheid : Weinig schadelijk voor in het water levende organismen B (4)

SZW-lijst van kankerverwekkende stoffen : LGK 12 - Non-combustible liquids

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

Denmark

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product.
 Pregnant/breastfeeding women working with the product must not be in direct contact with the product.

15.2. Chemical safety assessment

Chemical Safety Assessment : No data available

For the following substances of this mixture a chemical safety assessment has been carried out

ethanediol

SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Oral) : Acute toxicity Category 4

Repr. 2 : Reproductive toxicity, Hazard Category 2

STOT RE 2 : Specific target organ toxicity — Repeated exposure, Category 2

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H302 : Harmful if swallowed.
 H361d : Suspected of damaging the unborn child.
 H373 : May cause damage to organs through prolonged or repeated exposure.

Key literature references and sources for data : European Chemicals Agency, LoLi, SDS supplier, Inchem 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 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
 BTT = Breakthrough time (maximum wearing time)
 DMEL = Derived Minimal Effect level
 DNEL = Derived No Effect Level
 EC50 = Median Effective Concentration
 EL50 = Median effective level
 ErC50 = EC50 in terms of reduction of growth rate
 ErL50 = EL50 in terms of reduction of growth rate
 EWC = European waste catalogue
 LC50 = Median lethal concentration
 LD50 = Median lethal dose
 LL50 = Median lethal level
 NA = Not applicable
 NOEC = No observed effect concentration
 NOEL: no-observed-effect level
 NOELR = No observed effect loading rate
 NOAEC = No observed adverse effect concentration
 NOAEL = No observed adverse effect level
 N.O.S. = Not Otherwise Specified
 OEL = Occupational Exposure Limits - Short Term Exposure Limits (STELs)
 PNEC = Predicted No Effect Concentration
 Quantitative structure-activity relationship (QSAR)
 STOT = Specific Target Organ Toxicity

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TWA = time weighted average

VOC = Volatile organic compounds

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

According to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

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