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

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

1.1. Product identifier

Trade name/designation:

RAVENOL OTC Concentrate Protect C12+

Article No.:

1410110

UFI:

JKP0-ARWS-3XRK-5EC2

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

Use of the substance/mixture:

Antifreeze agent

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Ravensberger Schmierstoffvertrieb GmbH

Abt. Technik

Jöllenbecker Str. 2

33824 Werther

Germany

Telephone: +49 5203 9719 0

Telefax: +49 5203 9719 40

E-mail: kontakt@ravenol.de

Website: www.ravenol.de

E-mail (competent person): sdb@ravenol.de

1.4. Emergency telephone number

24 hr. emergency phone number, 24h: Giftnotruf Berlin 24-hour emergency number 030 30686700.
Advice in German and English. +49 700 24 112 112 / +1 872 5888271 (Contract ID: RAV)

SECTION 2: Hazards identification

* **2.1. Classification of the substance or mixture**

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) (<i>Acute Tox. 4</i>)	H302: Harmful if swallowed.	Calculation method.
STOT-repeated exposure (<i>STOT RE 2</i>)	H373: May cause damage to organs through prolonged or repeated exposure.	Calculation method.

* **2.2. Label elements**

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

Hazard pictograms:



GHS07

Exclamation mark



GHS08

Health hazard

Signal word: Warning



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Hazard components for labelling:

ethane-1,2-diol; methyl-1H-benzotriazole; potassium isononanoate

Hazard statements for health hazards

H302	Harmful if swallowed.
H373	May cause damage to kidneys through prolonged or repeated exposure if swallowed.

Supplemental hazard information: none

Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.

Precautionary statements Prevention

P260	Do not breathe vapours and spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.

Precautionary statements Response

P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor/Emergency telephone number/ if you feel unwell.
P314	Get medical advice/attention if you feel unwell.

Precautionary statements Disposal

P501	Dispose of contents/container to an appropriate recycling or disposal facility.
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2.3. Other hazards

Other adverse effects:

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients

*** 3.2. Mixtures**

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 107-21-1 EC No.: 203-473-3 REACH No.: 01-2119456816-28-0000	ethane-1,2-diol Acute Tox. 4 (H302), STOT RE 2 (H373) Warning	50 - < 85 weight-%
CAS No.: 84501-71-3 EC No.: 282-991-1	potassium isononanoate Eye Irrit. 2 (H319), Skin Irrit. 2 (H315) Warning	1 - < 3 weight-%
CAS No.: 29385-43-1 EC No.: 249-596-6 REACH No.: 01-2119979081-35-XXXX	methyl-1H-benzotriazole Acute Tox. 4 (H302), Aquatic Chronic 2 (H411), Repr. 2 (H361d) Warning	0 - < 0.3 weight-%

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

SECTION 4: First aid measures

*** 4.1. Description of first aid measures**

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended.

Following inhalation:

In case of respiratory tract irritation, consult a physician. Provide fresh air. Get immediate medical advice/attention.

In case of skin contact:

In case of skin irritation, consult a physician. After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse.

After eye contact:

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Remove contact lenses, if present and easy to do. Continue rinsing. Causes serious eye irritation.



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Following ingestion:

If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. If unconscious but breathing normally, place in recovery position and seek medical advice. Harmful if swallowed. May cause damage to organs.(kidneys)

Self-protection of the first aider:

First aider: Pay attention to self-protection! Use personal protection equipment. No direct artificial respiration to be given by first aider.

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

Reference to other sections:
SECTION 2: Hazards identification
SECTION 11: Toxicological information

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

Observe risk of aspiration if vomiting occurs. Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

alcohol resistant foam
Carbon dioxide (CO₂)
Extinguishing powder
Use water spray jet to protect personnel and to cool endangered containers.

Unsuitable extinguishing media:

Full water jet

* 5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated: Gases/vapours, toxic. The product itself does not burn.

Hazardous combustion products:

Nitrogen oxides (NO_x) Carbon monoxide Carbon dioxide (CO₂)

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

5.4. Additional information

Co-ordinate fire-fighting measures to the fire surroundings. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

Use personal protection equipment. Special danger of slipping by leaking/spilling product. Do not breathe vapour.

Protective equipment:

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

Emergency procedures:

Eliminate all ignition sources if safe to do so. Remove persons to safety. Provide adequate ventilation.

6.1.2. For emergency responders

Personal protection equipment:

Use appropriate respiratory protection.

6.2. Environmental precautions

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Immediately inform the responsible authorities in entry into waterways or sewage system.

6.3. Methods and material for containment and cleaning up

For containment:

Prevent spread over a wide area (e.g. by containment or oil barriers).

For cleaning up:

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).



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Other information:

Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

SECTION 7: Handling and storage
 SECTION 8: Exposure controls/personal protection
 SECTION 13: Disposal considerations

6.5. Additional information

Clear spills immediately.

SECTION 7: Handling and storage

* **7.1. Precautions for safe handling**

Protective measures

Advices on safe handling:

Harmful if swallowed. Do not breathe gas/vapour. Keep out of reach of children. Wash hands before breaks and after work.

Fire prevent measures:

No special fire protection measures are necessary.

Measures to prevent aerosol and dust generation:

Provide adequate ventilation.

Environmental precautions:

See section 8.

Advices on general occupational hygiene

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500. When using do not eat, drink, smoke, sniff. Remove contaminated, saturated clothing.

* **7.2. Conditions for safe storage, including any incompatibilities**

Technical measures and storage conditions:

Keep locked up and out of reach of children.

Requirements for storage rooms and vessels:

Keep/Store only in original container. Shafts and sewers must be protected from entry of the product.

Hints on storage assembly:

Do not store together with: Food and feedingstuffs

Storage class (TRGS 510, Germany): 10 - Combustible liquids that cannot be assigned to any of the above storage classes

Further information on storage conditions:

Keep container tightly closed in a cool, well-ventilated place.

7.3. Specific end use(s)

Recommendation:

Observe technical data sheet.
 Antifreeze / Coolant

SECTION 8: Exposure controls/personal protection

* **8.1. Control parameters**

8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
CH from 1 Jan 2022	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m ³) ② 20 ppm (52 mg/m ³) ⑤ (Dampf und Aerosol; kann über die Haut aufgenommen werden) H SSC; Tox: OAW Auge
BE	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ③ 40 ppm (104 mg/m ³) ⑤ (Aérosol, peut être absorbé par la peau) D, M



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CZ from 1 Mar 2020	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 19.4 ppm (50 mg/m ³) ② 38.8 ppm (100 mg/m ³) ⑤ (může pronikat pokožkou) D
PL	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 15 mg/m ³ ② 50 mg/m ³ ⑤ (może przenikać przez skórę do organizmu) skóra
NO from 1 Jul 2021	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (damp og Aerosol, kan absorberes gjennom huden) HE5S
TRGS 900 (DE)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m ³) ② 20 ppm (52 mg/m ³) ⑤ (Aerosol und Dampf, kann über die Haut aufgenommen werden) DFG, EU, H, Y, 11
IE from 17 Jan 2020	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (may be absorbed through the skin) Sk, IOELV
MY from 1 Jan 2000	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	③ 39.4 ppm (100 mg/m ³)
HTP (FI)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (50 mg/m ³) ② 40 ppm (100 mg/m ³) ⑤ (kan absorberas genom huden) iho
LT from 15 Oct 2007	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (25 mg/m ³) ② 20 ppm (50 mg/m ³) ⑤ (garų ir Aerosolis) (tikėtinas įsisavinimas per odą) Šis RD taikomas bendrai garų ir aerosolio koncentracijai. O
SE from 1 Jun 2016	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (25 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (kan absorberas genom huden)
NPEL (SK) from 23 Nov 2011	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (rátajte so vstrebávaním cez pokožku) K
MAK (AT)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m ³) ⑤ (kann über die Haut aufgenommen werden) H
DK	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 mg/m ³ ② 20 mg/m ³ ⑤ (forstøvet)
DK from 28 Jun 2022	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (kan optages gennem huden) EH
MAK (AT)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	② 20 ppm (52 mg/m ³) ⑤ (max. 8x5 min./Schicht, Momentanwert, kann über die Haut aufgenommen werden) H
BG from 6 Jan 2012	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (трябва да се очаква абсорбиране през кожата)



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HR	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (mora se uzeti u obzir prodiranje kroz kožu) koža
ES	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (puede ser absorbido a través dérmica) vía dérmica, VLI
RO from 21 Aug 2018	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (e de așteptat asimilarea prin piele) P
EE from 17 Jan 2020	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (naha kaudu kergesti absorbeeruvad ained, aur ja Aerosool) A, 18
LV	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (var absorbēt caur ādu) Āda
Alberta (CA)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	③ 100 mg/m ³ ⑤ 3
BC (CA) from 1 Mar 2022	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 mg/m ³ ② 20 mg/m ³ ③ 100 mg/m ³ ⑤ (Aerosol)
BC (CA) from 1 Mar 2022	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	③ 50 ppm ⑤ (vapor)
IOELV (EU)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (may be absorbed through the skin)
VRI (FR)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (peut être absorbé par la peau)
WEL (GB)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (vapour, may be absorbed through the skin)
SI	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (računati je treba z možnostjo prodiranja skozi kožo) K, Y, EU1
TW	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 mg/m ³ ⑤ (##)
TW	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	③ 50 ppm (127 mg/m ³) ⑤ (#)
WEL (GB)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 mg/m ³ ⑤ (may be absorbed through the skin)
KR	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	③ 40 ppm (100 mg/m ³) ⑤ (## #(#) ##)



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Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
IS	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (efnið getur auðveldlega borist inn í líkamann gegnum húð) H
IS	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m ³) ⑤ (úðaefni, efnið getur auðveldlega borist inn í líkamann gegnum húð)
CN from 1 Jan 2007	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 mg/m ³ ② 40 mg/m ³
HU	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 52 mg/m ³ ② 104 mg/m ³ ⑤ (felvehető a bőrön keresztül) b, i, N
RU	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 5 mg/m ³ ③ 10 mg/m ³
GR from 1 Oct 2016	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 50 ppm (125 mg/m ³) ② 50 ppm (125 mg/m ³)
NL from 20 Jan 2021	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 52 mg/m ³ ② 104 mg/m ³ ⑤ (damp, kan door de huid in het lichaam worden opgenomen) H
ACGIH (US) from 1 Jan 2017	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	② 10 mg/m ³ ⑤ (inhalable fraction Aerosol)
NL	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 mg/m ³ ⑤ (deeltjes)
TR	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (cilt yoluyla alınabilir) Deri
ACGIH (US) from 1 Jan 2017	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 25 ppm ② 50 ppm ⑤ (vapor)
Québec (CA)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	③ 50 ppm (127 mg/m ³)

8.1.2. Biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	35 mg/m ³	① DNEL worker ② Acute - inhalation, local effects
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	7 mg/m ³	① DNEL Consumer ② Acute - inhalation, local effects
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	106 mg/kg bw/ day	① DNEL worker ② Long-term - dermal, systemic effects



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Substance name	DNEL value	① DNEL type ② Exposure route
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	53 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	8.8 mg/m ³	① DNEL worker ② Long-term - inhalation, systemic effects
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	4.4 mg/m ³	① DNEL Consumer ② Long-term - inhalation, systemic effects
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	0.5 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	0.25 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	0.25 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	0.25 mg/kg bw/day	① DNEL Consumer ② Acute - oral, systemic effects

Substance name	PNEC Value	① PNEC type
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	10 mg/L	① PNEC aquatic, freshwater
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	1 mg/L	① PNEC aquatic, marine water
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	199.5 mg/L	① PNEC sewage treatment plant
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	37 mg/kg	① PNEC sediment, freshwater
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	3.7 mg/kg	① PNEC sediment, marine water
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	1.53 mg/kg	① PNEC soil
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	0.01 mg/L	① PNEC aquatic, freshwater
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	39.4 mg/L	① PNEC sewage treatment plant
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	0 mg/kg	① PNEC sediment, freshwater
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	0 mg/kg	① PNEC sediment, marine water
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	0 mg/kg	① PNEC soil
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	0.01 mg/L	① PNEC soil, marine water

* **8.2. Exposure controls**

8.2.1. Appropriate engineering controls

See section 7. No additional measures necessary.



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8.2.2. Personal protection equipment



Eye/face protection:

During transfer: Eye glasses with side protection
 DIN-/EN-Norms EN 166

Skin protection:

Hand protection
 Suitable material: NBR (Nitrile rubber), PVC (polyvinyl chloride), CR (polychloroprene, chloroprene rubber)
 Thickness of the glove material: ≥ 0,3 mm
 Breakthrough time: 480 min
 Breakthrough times and swelling properties of the material must be taken into consideration.
 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.
 For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
 Tested protective gloves must be worn: EN ISO 374

Suitable protective clothing: Protective clothing

Respiratory protection:

Usually no personal respirative protection necessary.

Thermal hazards:

No data available.

Other protection measures:

Wash hands before breaks and after work.

8.2.3. Environmental exposure controls

See section 7. No additional measures necessary.

SECTION 9: Physical and chemical properties

* **9.1. Information on basic physical and chemical properties**

Appearance

Physical state: Liquid

Colour: violet

Odour: characteristic

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	7.5 - 9	20 °C	① ASTM D1287 50 Vol.%
Melting point	<i>not determined</i>		
Freezing point	< -37 °C		① Mix 50/50% with water
Initial boiling point and boiling range	170 - 185 °C		① ASTM D1120
Decomposition temperature	<i>not applicable</i>		
Flash point	111 °C		② Data apply to the main component.
Evaporation rate	<i>not determined</i>		
Auto-ignition temperature	<i>not determined</i>		
Upper/lower flammability or explosive limits	<i>not applicable</i>		
Vapour pressure	<i>not determined</i>		
Vapour density	<i>not applicable</i>		
Density	1,130 kg/m ³	20 °C	
Relative density	<i>not applicable</i>		
Bulk density	<i>not applicable</i>		
Water solubility	completely miscible		
Partition coefficient: n-octanol/water	<i>not applicable</i>		
Dynamic viscosity	<i>not determined</i>		



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Parameter	Value	at °C	① Method ② Remark
Kinematic viscosity	<i>not determined</i>		

9.2. Other information

Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

No known hazardous reactions. hygroscopic.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

responds with: Oxidising agent, strong, Strong acid

10.4. Conditions to avoid

To avoid thermal decomposition do not overheat.

10.5. Incompatible materials

Oxidising agent, strong

Acid, concentrated

10.6. Hazardous decomposition products

The product is stable under storage at normal ambient temperatures.

SECTION 11: Toxicological information

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

ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3
LD₅₀ oral: 72,900 mg/kg (Rat)
LD₅₀ dermal: 3,500 mg/kg (Rabbit)
LC₅₀ Acute inhalation toxicity (vapour): >2.5 mg/L 6 h (Rat)
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6
LD₅₀ oral: >2,000 mg/kg (Rabbit)
LD₅₀ dermal: 720 mg/kg

Acute oral toxicity:

Harmful if swallowed.

Acute dermal toxicity:

Based on available data, the classification criteria are not met.

Acute inhalation toxicity:

Based on available data, the classification criteria are not met.

Skin corrosion/irritation:

No irritant effect. Frequently or prolonged contact with skin may cause dermal irritation.

Serious eye damage/irritation:

Causes serious eye irritation.

Respiratory or skin sensitisation:

No sensitizing effects known.

Germ cell mutagenicity:

No indications of human germ cell mutagenicity exist.

Carcinogenicity:

No indication of human carcinogenicity.

Reproductive toxicity:

No indications of human reproductive toxicity exist.

STOT-single exposure:

Based on available data, the classification criteria are not met.

STOT-repeated exposure:

May cause damage to kidneys through prolonged or repeated exposure if swallowed.

Aspiration hazard:

Based on available data, the classification criteria are not met.



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* **11.2. Information on other hazards**

Endocrine disrupting properties:

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

SECTION 12: Ecological information

* **12.1. Toxicity**

ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3
LC₅₀ : 72,680 mg/L 4 d (fish)
EC₅₀ : >100 mg/L 2 d (crustaceans, Daphnia magna (Big water flea))
NOEC : 15,380 - 32,000 mg/L -∞ h (fish)
NOEC : 8,590 mg/L -∞ h (crustaceans)
ErC₅₀ : 6,500 - 13,000 mg/L 4 d (Algae/water plant)
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6
LC₅₀ : 25.5 mg/L 4 d (fish, Pimephales promelas (fathead minnow))
LC₅₀ : 65 mg/L 4 d (fish, Zebrafisch)
LC₅₀ : 55 mg/L 4 d (fish)
LC₅₀ : >25.5 mg/L 4 d (fish)
LC₅₀ : <25 mg/L 4 d (fish, Pimephales promelas (fathead minnow))
LC₅₀ : 55 mg/L 4 d (fish, Cyprinodon variegatus) The test procedure is based on test guideline PARCOM 1995 Part B Protocol for a Fish Acute Toxicity Test (modified OECD 203 Fish Acute Toxicity Test)
LC₅₀ : 55 mg/L 2 d (crustaceans, Acartia tonsa) ISO/CD 14669: "Determination of Acute Lethal Toxicity to Marine Copepads" and PARCOM Ring Test Protocol: "Acute Toxicity to the Marine Copepod Acartia tonsa."·
EC₅₀ : 87.4 mg/L 2 d (crustaceans, Wasserfloh)
EC₅₀ : 62 mg/L 3 d (Algae/water plant, Grünalgen)
EC₅₀ : 53 mg/L 3 d (Algae/water plant, Skeletonema costatum) ISO 10253 (Water quality - Marine Algal Growth Inhibition Test with Skeletonema costatum and Phaeodactylum tricornutum)
NOEC : 18.4 mg/L 21 d (crustaceans, Wasserfloh)
NOEC : 30 mg/L 3 d (Algae/water plant, Skeletonema costatum) ISO 10253 (Water quality - Marine Algal Growth Inhibition Test with Skeletonema costatum and Phaeodactylum tricornutum)
NOEC : 30 mg/L 4 d (fish, Cyprinodon variegatus) The test procedure is based on test guideline PARCOM 1995 Part B Protocol for a Fish Acute Toxicity Test (modified OECD 203 Fish Acute Toxicity Test)
NOEC : 30 mg/L 2 d (crustaceans, Acartia tonsa) ISO/CD 14669: "Determination of Acute Lethal Toxicity to Marine Copepads" and PARCOM Ring Test Protocol: "Acute Toxicity to the Marine Copepod Acartia tonsa."·
NOEC : 18.4 mg/L 21 d (crustaceans, Daphnia magna) "Daphnia Reproduction Test" of OECD Guideline 202, Part II (Draft 7/1993)
LOEC : 37.6 mg/L 21 d (crustaceans, Daphnia magna) "Daphnia Reproduction Test" of OECD Guideline 202, Part II (Draft 7/1993)

Assessment/classification:

Based on available data, the classification criteria are not met.

Additional ecotoxicological information:

The information about ecology refers to the main components.

* **12.2. Persistence and degradability**

ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3
Biodegradation: Yes, rapidly

Abiotic degradation:

Readily biodegradable. Data apply to the main component.

* **12.3. Bioaccumulative potential**

ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3
Log K_{ow} : -1.36
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6
Log K_{ow} : ≤ 1.71

Bioconcentration factor (BCF):

There are no data available on the preparation/mixture itself.



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Partition coefficient: n-octanol/water:
 not applicable

Accumulation / Evaluation:
 The product has not been tested.

12.4. Mobility in soil
 There are no data available on the preparation/mixture itself.

* **12.5. Results of PBT and vPvB assessment**

ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
potassium isononanoate CAS No.: 84501-71-3 EC No.: 282-991-1
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

* **12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

* **12.7. Other adverse effects**

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
 Dispose of waste according to applicable legislation.

Waste treatment options

Appropriate disposal / Product:

Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package:

Non-contaminated packages may be recycled.

13.2. Additional information

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1. UN number or ID number			
No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.
14.2. UN proper shipping name			
No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.
14.3. Transport hazard class(es)			
not relevant	not relevant	not relevant	not relevant
14.4. Packing group			
not relevant	not relevant	not relevant	not relevant
14.5. Environmental hazards			
not relevant	not relevant	not relevant	not relevant
14.6. Special precautions for user			
not relevant	not relevant	not relevant	not relevant

14.7. Maritime transport in bulk according to IMO instruments

No transport as bulk according to IBC Code.



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SECTION 15: Regulatory information

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

15.1.1. EU legislation

Restrictions on use:

Use restriction according to REACH annex XVII, no.:
ethanediol

Other regulations (EU):

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]: This product is not assigned to a hazard category.

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Störfallverordnung (12. BImSchV)

for substances contained in the product:

This product is not assigned to a hazard category.

Technische Anleitung zur Reinhaltung der Luft (TA-Luft)

Remark:

Annex 4: ingredient(s) not named.
To follow:5.2.5

Water hazard class

WGK:

1 - schwach wassergefährdend

Source:

Self-classification (mixture; calculation rule).

Technische Regeln für Gefahrstoffe

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

Berufsgenossenschaftliche Vorschriften (DGUV-Vorschriften)

Berufsgenossenschaftliche Informationen (DGUV-Informationen) 868
Berufsgenossenschaftliche Regeln (DGUV-Regeln) 189, 190, 192, 195

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

* 15.3. Additional information

Tactile warning according to EN/ISO 11683.

SECTION 16: Other information

* 16.1. Indication of changes

2.1.	Classification of the substance or mixture
2.2.	Label elements
3.2.	Mixtures
4.1.	Description of first aid measures
5.2.	Special hazards arising from the substance or mixture
7.1.	Precautions for safe handling
7.2.	Conditions for safe storage, including any incompatibilities
8.1.	Control parameters
8.2.	Exposure controls
9.1.	Information on basic physical and chemical properties
11.1.	Information on hazard classes as defined in Regulation (EC) No 1272/2008
11.2.	Information on other hazards
12.1.	Toxicity
12.2.	Persistence and degradability
12.3.	Bioaccumulative potential



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12.5.	Results of PBT and vPvB assessment
12.6.	Endocrine disrupting properties
12.7.	Other adverse effects
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
15.3.	Additional information
16.1.	Indication of changes
16.3.	Key literature references and sources for data
16.4.	Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]
16.5.	Relevant R-, H- and EUH-phrases (Number and full text)

16.2. Abbreviations and acronyms

See overview table at www.euphrac.eu

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

* 16.3. Key literature references and sources for data

67/548/EEC - Dangerous Substances Directive

1999/45/EEC - Dangerous Preparations Directive

EC 1907/2006 - REACH Regulation

1272/2008 EC - Regulation on classification, labeling and packaging of substances and mixtures, and amending Directives 67/548/EEC and 1999/45/EC and Regulation (EC) No 1907/2006

Regulation (EC) No 1907/2006 (REACH), Annex II

European Chemicals Agency (ECHA), C & L classification and labeling inventory

European Chemicals Agency (ECHA), ECHA CHEM Registered substances

OECD The Global Portal to Information on Chemical Substances (ChemPortal)

Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA): GESTIS substance database and International limit values for chemical substances

Federal Environment Agency, Section IV 2.4: Documentation and Information Centre substances

hazardous to water Rigoletto (catalog substances hazardous to water)

Substance name	Type	source of supply
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6	LC ₅₀ ; EC ₅₀ ; NOEC; LOEC	Source: European Chemicals Agency, http://echa.europa.eu/

* 16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) (<i>Acute Tox. 4</i>)	H302: Harmful if swallowed.	Calculation method.
STOT-repeated exposure (<i>STOT RE 2</i>)	H373: May cause damage to organs through prolonged or repeated exposure.	Calculation method.

* 16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

16.6. Training advice

No data available

16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.



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* Data changed compared with the previous version.