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 Premix -40°C Protect C12+

Article No.:
1410112

UFI:
GQJX-NSSE-RDHD-58SR

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
Produktsicherheit
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: +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) *(Acute Tox. 4)*	H302: Harmful if swallowed.	Calculation method.
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	Calculation method.
Serious eye damage/eye irritation *(Eye Irrit. 2)*	H319: Causes serious eye irritation.	Calculation method.
STOT-repeated exposure *(STOT RE 2)*	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

Hazard components for labelling:
1,2-Ethanediol; potassium 3,5,5-trimethylhexanoate

Hazard statements for health hazards	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
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.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves and eye protection/face protection.

Precautionary statements Response	
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor/Emergency telephone number if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of water and soap.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330	Rinse mouth.
P337 + P313	If eye irritation persists: Get medical advice/attention.

*
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.: 01-2119456816-28-0173	**1,2-Ethanediol** Acute Tox. 4 (H302), STOT RE 2 (H373)  Warning **Acute Toxicity Estimate** ATE (oral) ≥ 536 mg/kg ATE (dermal) ≥ 3,500 mg/kg ATE (inhalation, vapour) > 2.5 mg/L ATE (inhalation, dust/mist) ≥ 2.5 mg/L	30 – < 60 weight-%
CAS No.: 93918-10-6 EC No.: 299-890-3	**potassium 3,5,5-trimethylhexanoate** Acute Tox. 4 (H302), Eye Dam. 1 (H318), Skin Corr. 1 (H314)  Danger **Acute Toxicity Estimate** ATE (oral) ≥ 1,160 mg/kg	0 – < 2 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 **Acute Toxicity Estimate** ATE (oral) > 2,000 mg/kg ATE (dermal) 720 mg/kg	0 – < 0.2 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.

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. Causes skin irritation.

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.

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:
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
Harmful if swallowed.
May cause damage to kidneys through prolonged or repeated exposure if swallowed.
Causes skin irritation and serious eye irritation.

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.

Hazardous combustion products:
Nitrogen oxides (NOx) 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:
Personal protection equipment: see section 8

Emergency procedures:
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).

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 2024	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m³) ② 20 ppm (52 mg/m³) ⑤ (Dampf und Aerosol; kann über die Haut aufgenommen werden) H SSC
BE	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ③ 40 ppm (104 mg/m³) ⑤ (Aérosol, peut être absorbé par la peau) D, M
CZ from 1 Jan 2024	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 19.38 ppm (50 mg/m³) ② 38.77 ppm (100 mg/m³) ⑤ (může pronikat pokožkou) D
PL	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 15 mg/m³ ② 50 mg/m³ ⑤ (może przenikać przez skórę do organizmu) skóra
NO from 1 Jul 2021	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (damp og Aerosol, kan absorberes gjennom huden) HE5S
TRGS 900 (DE)	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m³) ② 20 ppm (52 mg/m³) ⑤ (Aerosol und Dampf, kann über die Haut aufgenommen werden) DFG, EU, H, Y, 11
IE from 17 Jan 2020	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (may be absorbed through the skin) Sk, IOELV
MY from 1 Jan 2000	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	③ 39.4 ppm (100 mg/m³)
HTP (FI)	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (50 mg/m³) ② 40 ppm (100 mg/m³) ⑤ (voivat imeytyä ihon läpi) iho
LT from 15 Oct 2007	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (25 mg/m³) ② 20 ppm (50 mg/m³) ⑤ (garų ir Aerozolis) (tikėtinas įsisavinimas per odą) Šis RD taikomas bendrai garu ir aerozolio koncentracijai. O
SE from 1 Jun 2016	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (25 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (kan absorberas genom huden)
NPEL (SK) from 23 Nov 2011	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (rátajte so vstrebávaním cez pokožku) K
MAK (AT)	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m³) ⑤ (kann über die Haut aufgenommen werden) H

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
DK	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 mg/m³ ② 20 mg/m³ ⑤ (forstøvet)
DK from 28 Jun 2022	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (kan optages gennem huden) EH
MAK (AT)	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	② 20 ppm (52 mg/m³) ⑤ (max. 8x5 min./Schicht, Momentanwert, kann über die Haut aufgenommen werden) H
BG from 6 Jan 2012	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (трябва да се очаква абсорбиране през кожата)
HR	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (mora se uzeti u obzir prodiranje kroz kožu) koža
ES	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (puede ser absorbido a través dérmica) vía dérmica, VLI
RO from 21 Aug 2018	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (e de asteptat asimilarea prin piele) P
EE from 17 Jan 2020	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (naha kaudu kergesti absorbeeruvad ained, aur ja Aerosool) A, 18
LV	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (var absorbet caur adu) Āda
Alberta (CA)	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	③ 100 mg/m³ ⑤ 3
BC (CA) from 1 Mar 2022	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 mg/m³ ② 20 mg/m³ ③ 100 mg/m³ ⑤ (Aerosol)
BC (CA) from 1 Mar 2022	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	③ 50 ppm ⑤ (vapor)
IOELV (EU)	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (may be absorbed through the skin)
VRI (FR)	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (peut être absorbé par la peau)
WEL (GB)	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (vapour, may be absorbed through the skin)

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
SI	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (računati je treba z možnostjo prodiranja skozi kožo) K, Y, EU1
TW	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 mg/m³ ⑤ (##)
TW	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	③ 50 ppm (127 mg/m³) ⑤ (#)
WEL (GB)	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 mg/m³ ⑤ (may be absorbed through the skin)
KR	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	③ 40 ppm (100 mg/m³) ⑤ (## #(#) ##)
IS	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (efnið getur auðveldlega borist inn í líkamann gegnum húð) H
IS	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m³) ⑤ (úðaefni, efnið getur auðveldlega borist inn í líkamann gegnum húð)
CN from 1 Jan 2007	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 mg/m³ ② 40 mg/m³
HU from 1 Apr 2024	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (felvehető a bőrön keresztül) b, i, N
RU	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 5 mg/m³ ③ 10 mg/m³
GR from 1 Oct 2016	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 50 ppm (125 mg/m³) ② 50 ppm (125 mg/m³)
NL from 1 Jan 2023	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (damp, kan door de huid in het lichaam worden opgenomen) H
ACGIH (US) from 1 Jan 2017	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	② 10 mg/m³ ⑤ (inhalable fraction Aerosol)
NL	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 mg/m³ ⑤ (deeltjes)
TR	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m³) ② 40 ppm (104 mg/m³) ⑤ (cilt yoluyla alınabilir) Deri
CSV (JP) from 1 Apr 2024	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm ② 50 ppm
ACGIH (US) from 1 Jan 2017	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	① 25 ppm ② 50 ppm ⑤ (vapor)

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
Québec (CA)	**1,2-Ethanediol** CAS No.: 107-21-1 EC No.: 203-473-3	③ 50 ppm (127 mg/m³)

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
1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3	35 mg/m³	① DNEL worker ② Long-term – inhalation, local effects
1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3	7 mg/m³	① DNEL Consumer ② Long-term – inhalation, local effects
1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3	106 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
1,2-Ethanediol 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/m³	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/m³	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
1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3	10 mg/L	① PNEC aquatic, freshwater
1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3	1 mg/L	① PNEC aquatic, marine water
1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3	37 mg/kg	① PNEC sediment, freshwater
1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3	3.7 mg/kg	① PNEC sediment, marine water
1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3	1.53 mg/kg	① PNEC soil
1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3	10 mg/L	① PNEC aquatic, intermittent release

Substance name	PNEC Value	① PNEC type
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.

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)
Thickness of the glove material: ≥ 0,4 mm
Suitable material: Butyl caoutchouc (butyl rubber),
Thickness of the glove material: ≥ 0,7 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
Form: Liquid
Colour: violet
Odour: characteristic
flammability: Yes

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	8	20 °C	
Melting point	*No data available*		
Freezing point	< -40 °C		
Initial boiling point and boiling range	*No data available*		
Decomposition temperature	*not applicable*		
Flash point	*No data available*		
Evaporation rate	*No data available*		
Auto-ignition temperature	*No data available*		
Upper/lower flammability or explosive limits	*No data available*		
Vapour pressure	*No data available*		
Vapour density	*not applicable*		
Density	1,070 kg/m³	20 °C	
Relative density	*not applicable*		
Bulk density	*not applicable*		
Water solubility	completely miscible		
Partition coefficient: n-octanol/water	*not applicable*		
Dynamic viscosity	*No data available*		
Kinematic viscosity	*No data available*		

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**
No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid
To avoid thermal decomposition do not overheat.

* **10.5. Incompatible materials**
No further relevant information available.

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**

Toxicological information

Acute Toxicity Estimate for Mixtures
ATE (oral): 1,128.2 mg/kg
ATE (dermal): 436,552.8 mg/kg
1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3
ATE (oral): ≥536 mg/kg
LD_{50} oral: ≥7,712 mg/kg (Rat)
LD_{50} dermal: ≥3,500 mg/kg (Mouse)
LC_{50} Acute inhalation toxicity (vapour): >2.5 mg/L 6 h (Rat)
LC_{50} Acute inhalation toxicity (dust/mist): ≥2.5 mg/L 6 h (Rat)
potassium 3,5,5-trimethylhexanoate CAS No.: 93918-10-6 EC No.: 299-890-3
LD_{50} oral: ≥1,160 mg/kg (Rat)

methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6
LD_{50} oral: >2,000 mg/kg (Rabbit)
LD_{50} 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:
Causes skin irritation.

Serious eye damage/irritation:
Causes serious eye irritation.

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

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

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

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

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.

Additional information:
No data available

* 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.

Other information:
No information available.

SECTION 12: Ecological information

* 12.1. Toxicity

1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3
LC_{50}: ≥72,860 mg/L 4 d (fish)
LC_{50}: 72,860 mg/L 4 d (Pimephales promelas)
EC_{50}: ≥100 mg/L 2 d (crustaceans)
EC_{50}: ≥3,536 – ≤13,000 mg/L 4 d (Algae/water plant)
EC_{50}: >1,995 mg/L
NOEC: ≥15,380 – ≤32,000 mg/L 12 d (fish)
NOEC: ≥7,500 – ≤15,000 mg/L 21 d (crustaceans)
NOEC: ≥100 mg/L 3 d (Algae/water plant)

potassium 3,5,5-trimethylhexanoate CAS No.: 93918-10-6 EC No.: 299-890-3
EC_{50}: 189.87 mg/L 3 d (Algae/water plant, Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum))
NOEC: ≥100 mg/L 3 d (Algae/water plant, Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum))
NOEC: ≥100 mg/L 1 d (crustaceans, Daphnia magna)
NOEC: ≥100 mg/L 2 d (crustaceans, Daphnia magna)
LOEC: >200 mg/L 3 d (Algae/water plant, Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum))
LOEC: >100 mg/L 1 d (crustaceans, Daphnia magna)
LOEC: >100 mg/L 2 d (crustaceans, Daphnia magna)
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6
LC_{50}: 25.5 mg/L 4 d (fish, Pimephales promelas (fathead minnow))
LC_{50}: 65 mg/L 4 d (fish, Zebrafisch)
LC_{50}: 55 mg/L 4 d (fish)
LC_{50}: >25.5 mg/L 4 d (fish)
LC_{50}: <25 mg/L 4 d (fish, Pimephales promelas (fathead minnow))
LC_{50}: 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)
LC_{50}: 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."·
EC_{50}: 87.4 mg/L 2 d (crustaceans, Wasserfloh)
EC_{50}: 62 mg/L 3 d (Algae/water plant, Grünalgen)
EC_{50}: 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:
Do not allow uncontrolled discharge of product into the environment.

* 12.2. Persistence and degradability

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

Biodegradation:
Readily biodegradable (according to OECD criteria).

Additional information:
Data apply to the main component.

* 12.3. Bioaccumulative potential

1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3
Log K_{OW}: = -1.36
potassium 3,5,5-trimethylhexanoate CAS No.: 93918-10-6 EC No.: 299-890-3
Log K_{OW}: -0.47
methyl-1H-benzotriazole CAS No.: 29385-43-1 EC No.: 249-596-6
Log K_{OW}: ≤ 1.71

Partition coefficient: n-octanol/water:
not applicable

Accumulation / Evaluation:
The product has not been tested.

* ## 12.4. Mobility in soil
The product has not been tested.

* ## 12.5. Results of PBT and vPvB assessment

1,2-Ethanediol 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 3,5,5-trimethylhexanoate CAS No.: 93918-10-6 EC No.: 299-890-3	
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.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV
Directive 2008/98/EC (Waste Framework Directive)

HP 5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP 6	Acute Toxicity

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

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
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.

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):
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 - slightly hazardous to water
Source:
Self-classification (mixture; calculation rule).
Technische Regeln für Gefahrstoffe
TRGS 500
TRGS 510
TRGS 900
Berufsgenossenschaftliche Vorschriften (DGUV-Vorschriften)
Berufsgenossenschaftliche Informationen (DGUV-Informationen) 868
Berufsgenossenschaftliche Regeln (DGUV-Regeln) 189, 190, 192, 195

[SK] National regulations
Other regulations, restrictions and prohibition regulations
Zákon č. 67/2010 Z.z., o podmienkach uvedenia chemických látok a chemických zmesí na trh a o zmene a doplnení niektorých zákonov (chemický zákon).
Zákon č. 124/2006 Z. z. o bezpečnosti a ochrane zdravia pri práci a o zmene a doplnení niektorých zákonov.
Zákon NR SR č. 355/2007 Z.z., o ochrane, podpore a rozvoji verejného zdravia a o zmene a doplnení niektorých zákonov, v znení neskorších predpisov.
Nariadenie vlády SR 471/2011 Z.z., ktorým sa mení nariadenie vlády Slovenskej republiky č. 355/2006 Z. z. o ochrane zamestnancov pred rizikami súvisiacimi s expozíciou chemickým faktorom pri práci, Príloha č.1.
Zákon č. 79/2015 Z.z. o odpadoch v znení neskorších predpisov.
Vyhláška MV SR č. 96/2004 Z.z., ktorou sa ustanovujú zásady protipožiarnej bezpečnosti pri manipulácii a skladovaní horľavých kvapalín, ťažkých vykurovacích olejov a rastlinných a živočíšnych tukov a olejov.
Zákon NR SR č. 137/2010 Z.z. o ovzduší v znení neskorších predpisov.
Zákon č. 319/2013 Z.z. o pôsobnosti orgánov štátnej správy pre sprístupňovanie biocídnych výrobkov na trh a ich používanie a o zmene a doplnení niektorých zákonov (biocídny zákon).

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**

1.1.	Product identifier
1.4.	Emergency telephone number
2.1.	Classification of the substance or mixture
2.2.	Label elements
2.3.	Other hazards
3.2.	Mixtures
4.1.	Description of first aid measures
4.2.	Most important symptoms and effects, both acute and delayed
5.2.	Special hazards arising from the substance or mixture
6.1.	Personal precautions, protective equipment and emergency procedures
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
10.3.	Possibility of hazardous reactions
10.5.	Incompatible materials
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
12.4.	Mobility in soil
12.5.	Results of PBT and vPvB assessment
13.1.	Waste treatment methods
14.3.	Transport hazard class(es)
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
15.3.	Additional information
16.1.	Indication of changes
16.2.	Abbreviations and acronyms
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.	List of relevant hazard statements and/or precautionary statements from sections 2 to 15

* **16.2. Abbreviations and acronyms**

ACGIH	American Conference of Governmental Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
DIN	German Institute for Standardization / German Industrial Standard
DNEL	derived no-effect level
EC_{50}	Effective Concentration 50%
EN	European Standard
ES	Exposure scenario
EWC	European Waste Catalogue
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISO	International Standards Organisation

KG	body weight
LC_{50}	Lethal (fatal) Concentration 50%
LD_{50}	Lethal (fatal) Dose 50%
MAK	Maximum concentration in the workplace air (CH)
NFPA	National Fire Protection Association
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
PBT	persistent and bioaccumulative and toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation and Authorization of Chemicals
RID	Dangerous goods regulations for transport by rail
TRGS	Technische Regeln für Gefahrstoffe
UN	United Nations

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

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
1,2-Ethanediol CAS No.: 107-21-1 EC No.: 203-473-3	Classification of the substance or mixture	Source: European Chemicals Agency, http://echa.europa.eu/
potassium 3,5,5-trimethylhexanoate CAS No.: 93918-10-6 EC No.: 299-890-3	EC_{50}; NOEC; LOEC	Source: European Chemicals Agency, http://echa.europa.eu/
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) *(Acute Tox. 4)*	H302: Harmful if swallowed.	Calculation method.
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	Calculation method.
Serious eye damage/eye irritation *(Eye Irrit. 2)*	H319: Causes serious eye irritation.	Calculation method.
STOT-repeated exposure *(STOT RE 2)*	H373: May cause damage to organs through prolonged or repeated exposure.	Calculation method.

* 16.5. List of relevant hazard statements and/or precautionary statements from sections 2 to 15

Hazard statements	
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
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.

* Data changed compared with the previous version.