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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 HJC Concentrate Protect FL22

Article No.:

1410122

UFI:

SRYE-50TQ-CHRF-UT3W

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

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): technik@ravenol.de

1.4. Emergency telephone number

Abt. Technik (Produktsicherheit), 24h: +49 700 24 112 112 (Company ID: RAV) (outside USA/Canada)
011 49 700 24 112 112 (Company ID: RAV) (inside USA/Canada), +49 5203 9719 0 (Mo-Do 7.30 Uhr -
16.30 Uhr, Fr 7.30 Uhr - 13.15 Uhr) (Only available during office hours.)

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.
Serious eye damage/eye irritation (<i>Eye Irrit. 2</i>)	H319: Causes serious eye irritation.	Calculation method.
STOT-repeated exposure (<i>STOT RE 2</i>)	H373: May cause damage to organs through prolonged or repeated exposure. (Exposure route: oral)	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:

potassium 2-ethylhexanoate; ethane-1,2-diol



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hazard statements for health hazards

H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure. (Exposure route: oral)

Supplemental hazard information: -

Precautionary statements

P102	Keep out of reach of children.
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Precautionary statements Prevention

P260	Do not breathe dust/fume/gas/mist/vapours/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.
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.

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, STOT RE 2 Warning H302-H373	90 - < 96 weight-%
CAS No.: 3164-85-0 EC No.: 221-625-7	potassium 2-ethylhexanoate Eye Dam. 1, Repr. 2, Skin Irrit. 2 H315-H318-H361d	1 - < 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:

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.



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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. Provide adequate ventilation. 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. Avoid: generation/formation of aerosols

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): 12 - non-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



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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	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 (kann über die Haut aufgenommen werden)
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)
CZ	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)
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)
NO	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 (kan absorberes gjennom huden)
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)
IE	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)
IE	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)
MY	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)
LT	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 tai komas bendrai garų ir aerosolio koncentracijai.
SE	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)	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)
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)
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



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DK	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 (kan optages gennem huden)
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)
BG	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)
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)
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)
RO	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)
EE	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)
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 absorbet caur adu)
Alberta (CA)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	③ 100 mg/m ³
BC (CA)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	③ 100 mg/m ³ ⑤ (Aerosol)
BC (CA)	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 (particles)
BC (CA)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	③ 50 mg/m ³ 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)
TW	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 mg/m ³ ⑤ (蒸汽)



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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
TW	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	③ 50 ppm (127 mg/m ³) ⑤ (霧)
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 (증기 와(과) 연무)
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)
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	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)
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	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	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)
ACGIH (US)	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)
ACGIH (US)	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



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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
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
potassium 2-ethylhexanoate CAS No.: 3164-85-0 EC No.: 221-625-7	41.98 mg/m ³	① DNEL worker ② Long-term - inhalation, 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

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 DIN EN 166

Skin protection:

Hand protection

Suitable material: NBR (Nitrile rubber), PVC (polyvinyl chloride), CR (polychloroprene, chloroprene rubber)

Thickness of the glove material: $\geq 0,3$ 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



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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: green

Odour: characteristic

Safety relevant basis data

parameter		at °C	Method	Remark
pH	8.4	20 °C		Mix 50/50% with water
Melting point	<i>not determined</i>			
Freezing point	-37 °C			Mix 50/50% with water
Initial boiling point and boiling range	155 °C			
Decomposition temperature	<i>not determined</i>			
Flash point	112 °C			
Evaporation rate	<i>not determined</i>			
Auto-ignition temperature	<i>not determined</i>			
Upper/lower flammability or explosive limits	<i>not determined</i>			
Vapour pressure	<i>not determined</i>			
Vapour density	<i>not determined</i>			
Density	1,130 kg/m ³	20 °C		
Bulk density	<i>not determined</i>			
Water solubility	completely miscible			
Partition coefficient: n-octanol/water	<i>not determined</i>			
Dynamic viscosity	<i>not determined</i>			
Kinematic viscosity	<i>not determined</i>			

9.2. Other information

No data available

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 information available.

10.6. Hazardous decomposition products

The product is stable under storage at normal ambient temperatures.



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SECTION 11: Toxicological information

* 11.1. Information on toxicological effects

Substance name	Toxicological information
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	LD₅₀ oral: 4,700 mg/kg (Rat) LD₅₀ dermal: 10,600 mg/kg (Rabbit) LC₅₀ Acute inhalation toxicity (vapour): >2.5 mg/l 6 h (Rat)
potassium 2-ethylhexanoate CAS No.: 3164-85-0 EC No.: 221-625-7	LD₅₀ oral: 2,043 mg/kg (Rat) LD₅₀ dermal: >2,000 mg/kg (Rat)

Acute oral toxicity:

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

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.

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 organs through prolonged or repeated exposure. Exposure route: oral

Aspiration hazard:

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

SECTION 12: Ecological information

* 12.1. Toxicity

Substance name	Toxicological information
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	LC₅₀: 8,050 - 72,900 mg/l 4 d (fish) EC₅₀: >100 mg/l 2 d (crustaceans, Daphnia magna (Big water flea)) ErC₅₀: 6,500 - 13,000 mg/l 4 d (Algae/water plant) NOEC: 72,860 mg/l -∞ h (fish) NOEC: 8,590 mg/l -∞ h (crustaceans)
potassium 2-ethylhexanoate CAS No.: 3164-85-0 EC No.: 221-625-7	LC₅₀: >100 mg/l 4 d (fish, Oryzias latipes (Ricefish)) EC₅₀: 910 mg/l 2 d (crustaceans, Daphnia magna (Big water flea)) EC₅₀: 49.3 mg/l 3 d (Algae/water plant, Desmodemus subspicatus) LC₅₀: >100 mg/l EC₅₀: 910 mg/l NOEC: 25 mg/l



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Assessment/classification:

The substance/mixture does not fulfill the criteria of the acute aquatic toxicity according to Regulation (EC) No 1272/2008 [CLP], Annex I.

Additional ecotoxicological information:

Do not allow uncontrolled discharge of product into the environment.

* **12.2. Persistence and degradability**

Substance name	Biodegradation	Remark
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	Yes, rapidly	
potassium 2-ethylhexanoate CAS No.: 3164-85-0 EC No.: 221-625-7	Yes, rapidly	

Biodegradation:

Readily biodegradable. (OECD 301A)
 The information about ecology refers to the main components.

* **12.3. Bioaccumulative potential**

Substance name	Log K _{ow}	Bioconcentration factor (BCF)
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	-1.36	
potassium 2-ethylhexanoate CAS No.: 3164-85-0 EC No.: 221-625-7	2.96	

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

Substance name	Results of PBT and vPvB assessment
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
potassium 2-ethylhexanoate CAS No.: 3164-85-0 EC No.: 221-625-7	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.

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

12.6. 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

No dangerous good in sense of these transport regulations.



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Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1. UN-No.			
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			
14.4. Packing group			
not relevant			
14.5. Environmental hazards			
not relevant			
14.6. Special precautions for user			
not relevant			

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
 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

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.

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

15.1.2. National regulations

 **[DE] National regulations**

Restrictions of occupation

Observe restrictions to employment for juvenils 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

for substances contained in the product:

This product is not assigned to a hazard category.

Technische Anleitung Luft (TA-Luft)

Remark:

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.



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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. Child-resistant fastenings (EN/862/ISO 8317).

SECTION 16: Other information

* 16.1. Indication of changes

2.1.	Classification of the substance or mixture
2.2.	Label elements
3.2.	Mixtures
6.1.	Personal precautions, protective equipment and emergency procedures
7.1.	Precautions for safe handling
7.2.	Conditions for safe storage, including any incompatibilities
8.1.	Control parameters
10.3.	Possibility of hazardous reactions
10.4.	Conditions to avoid
10.5.	Incompatible materials
11.1.	Information on toxicological effects
12.1.	Toxicity
12.2.	Persistence and degradability
12.3.	Bioaccumulative potential
12.4.	Mobility in soil
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

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)

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

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.
Serious eye damage/eye irritation (<i>Eye Irrit. 2</i>)	H319: Causes serious eye irritation.	Calculation method.
STOT-repeated exposure (<i>STOT RE 2</i>)	H373: May cause damage to organs through prolonged or repeated exposure. (Exposure route: oral)	Calculation method.



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

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure. (...)

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