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

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

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1.1. Product identifier
Trade name/designation:

RAVENOL Scheibenfrostschutz Konzentrat

Article No.:
1420100

UFI:
ESRS-53NP-TQNN-J32G

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture:
Enteiser, Frostschutz, Automobil-Industrie

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: +49 700 24 112 112 (Contract ID: RAV) / +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
flammable liquids *(Flam. Liq. 3)*	H226: Flammable liquid and vapour.	On basis of test data.

2.2. Label elements

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

Hazard pictograms:

GHS02
Flame

Signal word: Warning

Hazard statements for physical hazards	
H226	Flammable liquid and vapour.

Supplemental hazard information: none

Precautionary statements	
P102	Keep out of reach of children.

Precautionary statements Prevention	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.

Precautionary statements Storage	
P403 + P235	Store in a well-ventilated place. Keep cool.

Precautionary statements Disposal	
P501	Dispose of contents/container to an appropriate recycling or disposal facility.

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

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3.2. Mixtures

Additional information:

Regulation (EC) No. 648/2004 (Detergents regulation): Contains:< 5 % anionic surfactants, Fragrances and dyes.

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 64-17-5 **EC No.:** 200-578-6 **Index No.:** 603-002-00-5 **REACH No.:** 01-2119457610-43-0000	**ethanol** Flam. Liq. 2 (H225) **Danger**	40 – < 65 weight-%
CAS No.: 107-21-1 **EC No.:** 203-473-3 **Index No.:** 603-027-00-1	**ethane-1,2-diol** Acute Tox. 4 (H302) **Warning**	10 – < 20 weight-%
CAS No.: 5392-40-5 **EC No.:** 226-394-6 **Index No.:** 605-019-00-3	**Citral; 3,7-Dimethyl-2,6-octadienal** Skin Irrit. 2 (H315), Skin Sens. 1 (H317) **Warning**	0 – < 0.1 weight-%
CAS No.: 138-86-3 **EC No.:** 205-341-0 **Index No.:** 601-029-00-7 **REACH No.:** 01-2120766421-57	**dipentene** Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410), Asp. Tox. 1 (H304), Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1 (H317) **Danger**	0 – < 0.1 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:

Remove casualty to fresh air and keep warm and at rest.When in doubt or if symptoms are observed, get medical advice. In case of allergic symptoms, especially in the breathing area, seek medical advice immediately.

In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap.
In case of skin irritation, consult a physician.

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.
Causes serious eye irritation.

Following ingestion:
If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting. Let water be drunken in little sips (dilution effect). Get medical advice/attention if you feel unwell.

* ### 4.2. Most important symptoms and effects, both acute and delayed
acute: Causes eye irritation. Irritation to respiratory tract (Inhalation).
Symptoms/ delayed effects: In rare cases the product can cause temporary erythema of the skin. Ingestion causes nausea, weakness and central nervous system effects.

4.3. Indication of any immediate medical attention and special treatment needed
When in doubt or if symptoms are observed, get medical advice. Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media:
In case of fire, use sand, extinguishing powder or alcohol resistant foam. Water spray jet alcohol resistant foam Extinguishing powder Carbon dioxide (CO2)

Unsuitable extinguishing media:
Full water jet

5.2. Special hazards arising from the substance or mixture
Flammable liquid and vapour. Vapours can form explosive mixtures with air. Remove persons to safety. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Reignition possible over considerable distance. Hazardous decomposition products: Carbon dioxide (CO2) , Carbon monoxide (CO) Combustible

Hazardous combustion products:
In case of fire: Gases/vapours, toxic

5.3. Advice for firefighters
Wear personal protection equipment (refer to section 8). In case of fire: Wear self-contained breathing apparatus.

5.4. Additional information
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:
Keep out of reach of children. Wash hands thoroughly after handling. Wear personal protection equipment (refer to section 8). Avoid contact with skin, eyes and clothes.
Do not breathe vapour/aerosol. After use replace the closing cap immediately.

Protective equipment:
Personal protection equipment: see section 8

Emergency procedures:
Remove all sources of ignition. 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.
Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up
For containment:
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).
Ventilate affected area.

For cleaning up:
Take up mechanically. Clear contaminated areas thoroughly.

Other information:
Ventilate affected area. 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
Special danger of slipping by leaking/spilling product. Use appropriate container to avoid environmental contamination.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:
Keep out of reach of children. Wash hands thoroughly after handling. Wear personal protection equipment (refer to section 8). Avoid contact with skin, eyes and clothes.
Do not breathe vapour/aerosol. After use replace the closing cap immediately.

Fire prevent measures:
Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. In use may form flammable/explosive vapour-air mixture. Heating causes rise in pressure with risk of bursting.

Measures to prevent aerosol and dust generation:
Ensure adequate ventilation of the storage area.

Environmental precautions:
No special measures are necessary.

Advices on general occupational hygiene
Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.
Wash hands before breaks and after work. When using do not eat, drink or smoke.

* 7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:
Keep only in the original container in a cool, well-ventilated place. Keep container tightly closed. Protect from direct sunlight.
Ensure adequate ventilation of the storage area. Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Requirements for storage rooms and vessels:
Keep only in original container.

Hints on storage assembly:
Do not store together with: Gas, Oxidizing agent, self-heating substances and mixtures.

Storage class (TRGS 510, Germany): 3 – Flammable liquids

Further information on storage conditions:
Recommended storage temperature: 5 -25 °C
Protect against: UV-radiation/sunlight, Heat

7.3. Specific end use(s)

Recommendation:
Observe technical data sheet.

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	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 500 ppm (960 mg/m³) ② 1,000 ppm (1,920 mg/m³)
CZ	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 522 ppm (1,000 mg/m³) ② 1,566 ppm (3,000 mg/m³)
PL	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,900 mg/m³
NO	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 500 ppm (950 mg/m³)
IE	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	② 1,000 ppm
MY	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,880 mg/m³)
HTP (FI)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,900 mg/m³) ② 1,300 ppm (2,500 mg/m³)
LT	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 500 ppm (1,000 mg/m³) ② 1,000 ppm (1,900 mg/m³)
SE	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 500 ppm (1,000 mg/m³) ③ 1,000 ppm (1,900 mg/m³)
NPEL (SK)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 500 ppm (960 mg/m³) ② 1,000 ppm (1,920 mg/m³)
DK	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,900 mg/m³) ② 2,000 ppm (3,800 mg/m³)
NL	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 260 mg/m³ ② 1,900 mg/m³ ⑤ (Kankerverwekkend, kan door de huid in het lichaam worden opgenomen)
MAK (AT)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,900 mg/m³)
MAK (AT)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	② 2,000 ppm (3,800 mg/m³) ⑤ (max. 3x60 min./Schicht, Momentanwert)
BG	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 mg/m³
HR	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,900 mg/m³)
BE	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,907 mg/m³)

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
RO	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,900 mg/m³) ② 5,000 ppm (9,500 mg/m³)
EE	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 500 ppm (1,000 mg/m³) ② 1,000 ppm (1,900 mg/m³)
Alberta (CA)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,880 mg/m³)
LV	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 mg/m³
ES	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	② 1,000 ppm (1,910 mg/m³)
BC (CA)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	② 1,000 ppm
VLA (FR)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,900 mg/m³) ② 5,000 ppm (9,500 mg/m³)
SI	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 500 ppm (960 mg/m³) ② 1,000 ppm (1,920 mg/m³)
TW	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,880 mg/m³)
WEL (GB)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,920 mg/m³)
KR	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,900 mg/m³)
IS	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,900 mg/m³)
HU	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,900 mg/m³ ② 3,800 mg/m³
RU	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 mg/m³ ③ 2,000 mg/m³
GR	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,900 mg/m³)
OSHA (US)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,900 mg/m³)
NIOSH (US)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,900 mg/m³)
ACGIH (US)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	② 1,000 ppm
TRGS 900 (DE)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 200 ppm (380 mg/m³) ② 800 ppm (1,520 mg/m³)
Québec (CA)	ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	① 1,000 ppm (1,880 mg/m³)

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/m³) ② 20 ppm (52 mg/m³) 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/m³) ③ 40 ppm (104 mg/m³) 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/m³) ② 38.8 ppm (100 mg/m³) ⑤ (může pronikat pokožkou)
PL	ethane-1,2-diol **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)
NO	ethane-1,2-diol **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)
TRGS 900 (DE)	ethane-1,2-diol **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)
IE	ethane-1,2-diol **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)
MY	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	③ 39.4 ppm (100 mg/m³)
HTP (FI)	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 20 ppm (50 mg/m³) ② 40 ppm (100 mg/m³) 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/m³) ② 20 ppm (50 mg/m³) ⑤ (garų ir Aerozolis) (tikėtinas įsisavinimas per odą) Šis RD taikomas bendrai garu ir aerozolio koncentracijai.
SE	ethane-1,2-diol **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)	ethane-1,2-diol **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)
MAK (AT)	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 10 ppm (26 mg/m³) 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/m³ ② 20 mg/m³ ⑤ (forstøvet)
DK	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 10 ppm (26 mg/m³) ② 20 ppm (52 mg/m³) ⑤ (kan optages gennem huden)

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
MAK (AT)	ethane-1,2-diol **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)
BG	ethane-1,2-diol **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	ethane-1,2-diol **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)
ES	ethane-1,2-diol **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)
RO	ethane-1,2-diol **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)
EE	ethane-1,2-diol **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)
LV	ethane-1,2-diol **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)
Alberta (CA)	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	③ 100 mg/m³
BC (CA)	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	③ 100 mg/m³ ⑤ (Aerosol)
BC (CA)	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 10 mg/m³ ② 20 mg/m³ ⑤ (particles)
BC (CA)	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	③ 50 mg/m³ ⑤ (vapor)
IOELV (EU)	ethane-1,2-diol **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)	ethane-1,2-diol **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)	ethane-1,2-diol **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)
SI	ethane-1,2-diol **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)
TW	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 10 mg/m³ ⑤ (##)

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/m³) ⑤ (#)
WEL (GB)	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 10 mg/m³ 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/m³) ⑤ (## #(#) ##)
IS	ethane-1,2-diol **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)
IS	ethane-1,2-diol **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	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 20 mg/m³ ② 40 mg/m³
HU	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 52 mg/m³ ② 104 mg/m³ ⑤ (felvehető a bőrön keresztül)
RU	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 5 mg/m³ ③ 10 mg/m³
GR	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 50 ppm (125 mg/m³) ② 50 ppm (125 mg/m³)
NL	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 52 mg/m³ ② 104 mg/m³ ⑤ (damp, kan door de huid in het lichaam worden opgenomen)
ACGIH (US)	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	② 10 mg/m³ ⑤ (inhalable fraction Aerosol)
NL	ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	① 10 mg/m³ ⑤ (deeltjes)
TR	ethane-1,2-diol **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)
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/m³)
ACGIH (US)	Citral; 3,7-Dimethyl-2,6-octadienal **CAS No.:** 5392-40-5 **EC No.:** 226-394-6	① 5 ppm ⑤ (inhalable fraction and vapor, may be absorbed through the skin)
PL	Citral; 3,7-Dimethyl-2,6-octadienal **CAS No.:** 5392-40-5 **EC No.:** 226-394-6	① 27 mg/m³ ② 54 mg/m³

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
IE	Citral; 3,7-Dimethyl-2,6-octadienal **CAS No.:** 5392-40-5 **EC No.:** 226-394-6	① 5 ppm ⑤ (inhalable fraction and vapour)
BE	Citral; 3,7-Dimethyl-2,6-octadienal **CAS No.:** 5392-40-5 **EC No.:** 226-394-6	① 5 ppm (32 mg/m³) ⑤ (vapeur et Aérosol; peut être absorbé par la peau)
ES	Citral; 3,7-Dimethyl-2,6-octadienal **CAS No.:** 5392-40-5 **EC No.:** 226-394-6	① 5 ppm
NO	dipentene **CAS No.:** 138-86-3 **EC No.:** 205-341-0	① 25 ppm (140 mg/m³)
LT	dipentene **CAS No.:** 138-86-3 **EC No.:** 205-341-0	① 25 ppm (150 mg/m³) ② 50 ppm (300 mg/m³) ⑤ Spygliuociu sakai jautrina oda. Atskiru terpenu, išskyrus 3-karena, jautrinantis poveikis nera ištirtas.
SE	dipentene **CAS No.:** 138-86-3 **EC No.:** 205-341-0	① 25 ppm (150 mg/m³) ③ 50 ppm (300 mg/m³) ⑤ (cf. Terpenes)
EE	dipentene **CAS No.:** 138-86-3 **EC No.:** 205-341-0	① 25 ppm (150 mg/m³) ② 50 ppm (300 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
ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	950 mg/m³	① DNEL worker ② Long-term – inhalation, systemic effects
ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	114 mg/m³	① DNEL Consumer ② Long-term – inhalation, systemic effects
ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	1,900 mg/m³	① DNEL worker ② Acute - inhalation, local effects
ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	950 mg/m³	① DNEL Consumer ② Acute - inhalation, local effects
ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	343 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
ethanol **CAS No.:** 64-17-5 **EC No.:** 200-578-6	206 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	35 mg/m³	① DNEL worker ② Long-term – inhalation, local effects
ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	7 mg/m³	① DNEL worker ② Long-term – inhalation, local effects
ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	106 mg/kg	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	① DNEL Consumer ② Long-term - dermal, systemic effects

Substance name	DNEL value	① DNEL type ② Exposure route
dipentene **CAS No.:** 138-86-3 **EC No.:** 205-341-0	33.3 mg/m³	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
ethane-1,2-diol **CAS No.:** 107-21-1 **EC No.:** 203-473-3	10 mg/L	① PNEC aquatic, intermittent release

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Use only in well-ventilated areas.
Take precautionary measures against static discharges.

8.2.2. Personal protection equipment

Eye/face protection:

Suitable eye protection: Eye glasses with side protection
DIN-/EN-Norms EN 166

Skin protection:

Hand protection
Suitable material: NBR (Nitrile rubber), PVC (polyvinyl chloride)
Thickness of the glove material: >= 0,4 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.
Tested protective gloves must be worn: EN ISO 374
Suitable protective clothing: Protective clothing

Respiratory protection:

Usually no personal respirative protection necessary.
If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.
Oil mist or vapor formation: Filter A - P2 (EN 141)

Thermal hazards:

To avoid thermal decomposition do not overheat.

8.2.3. Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Liquid **Colour:** blue

Odour: Lemon

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	≈ 8.3	20 °C	② Data apply to the main component.
Melting point	*not determined*		
Freezing point	*not determined*		
Initial boiling point and boiling range	*not determined*		
Decomposition temperature	*not applicable*		
Flash point	23 °C		
Evaporation rate	*not determined*		
Auto-ignition temperature	*not determined*		
Upper/lower flammability or explosive limits	*not determined*		
Vapour pressure	23 hPa	20 °C	
Vapour density	*not applicable*		
Density	102 g/cm³	20 °C	
Relative density	*not applicable*		
Bulk density	*not applicable*		
Water solubility	completely miscible		
Partition coefficient: n-octanol/water	*not applicable*		
Dynamic viscosity	*not determined*		
Kinematic viscosity	*not determined*		

*

9.2. Other information

Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquids
Reference to other sections: SECTION 10: Stability and reactivity,
Flammable liquid and vapour. Combustible

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No information available.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.
Reference to other sections: SECTION 7: Handling and storage
Heating causes rise in pressure with risk of bursting. Recommended storage temperature: 5-25°C

10.5. Incompatible materials

Strong acid, Oxidising agent

10.6. Hazardous decomposition products

During heating or in case of fire, toxic gases is possible. Carbon monoxide (CO) Carbon dioxide (CO2)

SECTION 11: Toxicological information

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

ethanol CAS No.: 64-17-5 **EC No.:** 200-578-6
LD_{50} oral: 10,470 mg/kg (Rat)
LD_{50} dermal: >2,000 mg/kg (Rabbit)
LC_{50} Acute inhalation toxicity (gas): 20,000 ppmV 4 h (rat)
LC_{50} Acute inhalation toxicity (vapour): 124 mg/L (Mouse)
ethane-1,2-diol CAS No.: 107-21-1 **EC No.:** 203-473-3
LD_{50} oral: 1,600 mg/kg (cATpE:)
LD_{50} dermal: >3,500 mg/kg (Mouse)
LC_{50} Acute inhalation toxicity (gas): >2.5 mg/L 6 h
LC_{50} Acute inhalation toxicity (vapour): >2.5 mg/L 6 h (Rat)
dipentene CAS No.: 138-86-3 **EC No.:** 205-341-0
LD_{50} oral: 4,400 mg/kg (Rat)
LD_{50} dermal: >5,000 mg/kg (Rabbit)

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:
Skin corrosion/irritation: slightly irritant but not relevant for classification.

Serious eye damage/irritation:
No irritant effect.

Respiratory or skin sensitisation:
No sensitizing effects known.

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

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

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

* 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

ethanol CAS No.: 64-17-5 **EC No.:** 200-578-6
LC_{50}: 11,000 mg/L 4 d (fish)
LC_{50}: 9,280 mg/L 2 d (crustaceans)
LC_{50}: 13,000 mg/L 4 d (fish, Oncorhynchus mykiss (Rainbow trout))
LC_{50}: 5,012 mg/L
EC_{50}: 9,950 mg/L 2 d (crustaceans)
EC_{50}: 275 mg/L 3 d (Algae/water plant, Chlorella vulgaris)
EC_{50}: >10,000 mg/L 2 d (crustaceans, Daphnia magna (Big water flea))
EC_{50}: 275 mg/L 3 d (Chlorella vulgaris)
EC_{50}: 12,340 mg/L 2 d (crustaceans, Daphnia magna (Big water flea))
EC_{50}: 275 mg/L 3 d (Selenastrum capricornutum)
NOEC: 12,340 mg/L 21 d
ethane-1,2-diol CAS No.: 107-21-1 **EC No.:** 203-473-3
LC_{50}: 72,860 mg/L 4 d (fish, Pimephales promelas)
LC_{50}: 14 – 18 mg/L
LC_{50}: 41,000 mg/L
EC_{50}: >100 mg/L 2 d (crustaceans, Daphnia magna)
EC_{50}: 46,300 mg/L
EC_{50}: >1,995 mg/L
NOEC: 8,590 mg/L
NOEC: 15,380 mg/L
NOEC: >100 mg/L 2 d
dipentene CAS No.: 138-86-3 **EC No.:** 205-341-0
LC_{50}: 17.9 mg/L 3 d (fish)
LC_{50}: 0.702 mg/L
EC_{50}: 17 mg/L 2 d (crustaceans)

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

ethanol CAS No.: 64-17-5 **EC No.:** 200-578-6
Biodegradation: Yes, rapidly
ethane-1,2-diol CAS No.: 107-21-1 **EC No.:** 203-473-3
Biodegradation: Yes, rapidly
dipentene CAS No.: 138-86-3 **EC No.:** 205-341-0
Biodegradation: —

Biodegradation:
The single components are biodegradable.

* 12.3. Bioaccumulative potential

ethanol CAS No.: 64-17-5 **EC No.:** 200-578-6
Log K_{OW}: -0.32
Bioconcentration factor (BCF): 3.2
ethane-1,2-diol CAS No.: 107-21-1 **EC No.:** 203-473-3
Log K_{OW}: -1.36
dipentene CAS No.: 138-86-3 **EC No.:** 205-341-0
Log K_{OW}: 4.5

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

ethanol CAS No.: 64-17-5 **EC No.:** 200-578-6
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
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.
Citral; 3,7-Dimethyl-2,6-octadienal CAS No.: 5392-40-5 **EC No.:** 226-394-6
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
dipentene CAS No.: 138-86-3 **EC No.:** 205-341-0
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
Waste code product

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

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			
UN 1987	UN 1987	UN 1987	UN 1987
14.2. UN proper shipping name			
ALCOHOLS, N.O.S. (Ethanol , dipentene)	ALCOHOLS, N.O.S. (Ethanol , dipentene)	ALCOHOLS, N.O.S. (Ethanol , dipentene)	ALCOHOLS, N.O.S. (Ethanol , dipentene)
14.3. Transport hazard class(es)			
 3	 3	 3	 3
14.4. Packing group			
III	III	III	III

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.5. Environmental hazards			
No	No	No	No
14.6. Special precautions for user			
Limited quantity (LQ): Transport as "limited quantity" according to chapter 3.4 ADR/RID **Hazard identification number (Kemler No.):** 30 **Classification code:** F1 **Tunnel restriction code:** (D/E)	**Limited quantity (LQ):** Limited quantity (LQ) **Classification code:** F1	**Limited quantity (LQ):** Limited quantity (LQ): 5 L **EmS-No.:** F-E, S-D	No data available

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

Other regulations (EU):

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive], Hazard categories:

• P5c Flammable liquids of Categories 2 or 3, not covered by P5a and P5b

Regulation (EC) No. 648/2004 (Detergents regulation): Contains:< 5% surfactants, Fragrances and dyes

Directive 2004/42/EC on the limitation of emissions of volatile organic compounds:

Volatile organic compounds (VOC) content in percent by weight: 65 weight-%

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:

Hazard categories:

• P5c Flammable liquids of Categories 2 or 3, not covered by P5a and P5b

P5c Flammable liquids of Categories 2 or 3, not covered by P5a and P5b

Betriebssicherheitsverordnung (BetrSichV)

entzündlich

Water hazard class

WGK:

1 - schwach wassergefährdend

Source:

Self-classification (mixture; calculation rule).

Technische Regeln für Gefahrstoffe

TRGS 510
TRGS 500
TRGS 900

Berufsgenossenschaftliche Vorschriften (DGUV-Vorschriften)

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

15.2. Chemical Safety Assessment

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

SECTION 16: Other information

* 16.1. Indication of changes

1.1.	Product identifier
3.2.	Mixtures
4.2.	Most important symptoms and effects, both acute and delayed
6.1.	Personal precautions, protective equipment and emergency procedures
7.2.	Conditions for safe storage, including any incompatibilities
8.1.	Control parameters
9.2.	Other information
11.1.	Information on hazard classes as defined in Regulation (EC) No 1272/2008
11.2.	Information on other hazards
12.1.	Toxicity
12.3.	Bioaccumulative potential
12.6.	Endocrine disrupting properties
12.7.	Other adverse effects
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
16.1.	Indication of changes
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)

* 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
flammable liquids *(Flam. Liq. 3)*	H226: Flammable liquid and vapour.	On basis of test data.

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

Hazard statements	
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very 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