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

1.1. Product identifier

938 Injector Intensive Cleaner MF93800500AB

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

Use of the substance/mixture

Cleaner

1.3. Details of the supplier of the safety data sheet

Company name: TUNAP GmbH & Co. KG
Street: Bürgermeister-Seidl-Str. 2
Place: D-82515 Wolfratshausen
Telephone: +49 (0) 8171/1600 - 0
Fax: +49 (0) 8171/1600 - 40
E-mail: sdb@tunap.com
Web: www.tunap.com

1.4. Emergency telephone number:

+49 (0) 30 30 686 790 (Giftnotruf Berlin)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:

Aerosol: Aerosol 1
Aspiration hazard: Asp. Tox. 1
Serious eye damage/eye irritation: Eye Dam. 1
Respiratory or skin sensitisation: Skin Sens. 1
Specific target organ toxicity - single exposure: STOT SE 3
Hazardous to the aquatic environment: Aquatic Chronic 2

Hazard Statements:

Extremely flammable aerosol.
Pressurised container: May burst if heated.
May be fatal if swallowed and enters airways.
Causes serious eye damage.
May cause an allergic skin reaction.
May cause drowsiness or dizziness.
Toxic to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

n-propanol
Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclenes, <2% aromatics
(R)-p-mentha-1,8-diene, d-limonene
Hydrocarbons, C10, aromatics, <1% naphthalene

Signal word: Danger

Pictograms:

Hazard statements

H222 Extremely flammable aerosol.
938 Injector Intensive Cleaner MF93800500AB

Precautionary statements
- H229: Pressurised container: May burst if heated.
- H317: May cause an allergic skin reaction.
- H318: Causes serious eye damage.
- H336: May cause drowsiness or dizziness.
- H411: Toxic to aquatic life with long lasting effects.

Precautionary statements
- P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P211: Do not spray on an open flame or other ignition source.
- P251: Do not pierce or burn, even after use.
- P260: Do not breathe Aerosol.
- P273: Avoid release to the environment.
- P280: Wear eye protection.
- P302+P352: IF ON SKIN: Wash with plenty of water.
- P370+P380+P375: In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.
- P337+P313: If eye irritation persists: Get medical advice/attention.
- P410+P412: Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Special labelling of certain mixtures
- EUH066: Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards
In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

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 components

<table>
<thead>
<tr>
<th>CAS No</th>
<th>EC No</th>
<th>Chemical name</th>
<th>Index No</th>
<th>REACH No</th>
<th>EC No Index No REACH No</th>
<th>Quantity</th>
<th>EC No</th>
<th>Index No</th>
<th>REACH No</th>
<th>GHS Classification</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>64742-48-9</td>
<td>918-481-9</td>
<td>Hydrocarbons, C10 - C13, n-alkanes, iso-alkanes, cyclics, &lt; 2% aromatics</td>
<td></td>
<td></td>
<td></td>
<td>25 - &lt; 50 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>71-23-8</td>
<td>200-746-9</td>
<td>n-propanol</td>
<td>603-003-00-0</td>
<td></td>
<td></td>
<td>10 - &lt; 20 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1174921-73-3</td>
<td>927-241-2</td>
<td>Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclenes, &lt;2% aromatics</td>
<td></td>
<td></td>
<td></td>
<td>10 - &lt; 20 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34590-94-8</td>
<td>252-104-2</td>
<td>(2-methoxymethylethoxy)propanol</td>
<td></td>
<td></td>
<td></td>
<td>5 - &lt; 10 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27247-96-7</td>
<td>248-363-6</td>
<td>2-Ethylhexyl nitrate</td>
<td></td>
<td></td>
<td></td>
<td>3 - &lt; 5 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5989-27-5</td>
<td>227-813-5</td>
<td>(R)-p-mentha-1,8-diene, d-limonene</td>
<td></td>
<td></td>
<td></td>
<td>1 - &lt; 3 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>104-76-7</td>
<td>203-234-3</td>
<td>2-Ethylhexan-1-ol</td>
<td></td>
<td></td>
<td></td>
<td>1 - &lt; 3 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64742-94-5</td>
<td>918-811-1</td>
<td>Hydrocarbons, C10, aromatics, &lt;1% naphthalene</td>
<td></td>
<td></td>
<td></td>
<td>0.1 - &lt; 1 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>110-91-8</td>
<td>203-815-1</td>
<td>morpholine</td>
<td></td>
<td></td>
<td></td>
<td>0.1 - &lt; 1 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full text of H and EUH statements: see section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

**General information**

First aider: Pay attention to self-protection! Remove persons to safety. Never give anything by mouth to an unconscious person or a person with cramps.

**After inhalation**

Remove person to fresh air and keep comfortable for breathing. In all cases of doubt, or when symptoms persist, seek medical advice.
After contact with skin
Wash with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with eyes
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion
Do NOT induce vomiting. Observe risk of aspiration if vomiting occurs. Call a physician in any case!

4.2. Most important symptoms and effects, both acute and delayed
Headache, nausea, dizziness, fatigue, skin irritation

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically. Call a POISON CENTER. Symptoms can occur only after several hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media

Unsuitable extinguishing media
Full water jet

5.2. Special hazards arising from the substance or mixture
Incomplete combustion and thermolysis gases of different toxicity can occur. In the case of hydrocarbonaceous products such as CO, CO2, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.

5.3. Advice for firefighters
In case of fire and/or explosion do not breathe fumes. Move undamaged containers from immediate hazard area if it can be done safely. In case of fire: Wear self-contained breathing apparatus.

Additional information
Danger of bursting container.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Wear breathing apparatus if exposed to vapours/dusts/aerosols. Remove all sources of ignition. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protection equipment.

6.2. Environmental precautions
Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Ensure all waste water is collected and treated via a waste water treatment plant.

6.3. Methods and material for containment and cleaning up
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Clean contaminated articles and floor according to the environmental legislation.

6.4. Reference to other sections
Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Advice on safe handling

Observe instructions for use.
Dust must be exhausted directly at the point of origin. Vapours/aerosols must be exhausted directly at the point of origin. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.
When using do not eat, drink, smoke, sniff.
Wear personal protection equipment (refer to section 8).
In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Heating causes rise in pressure with risk of bursting.

Further information on handling

Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Keep container tightly closed. Observe legal regulations and provisions.

Hints on joint storage
Do not store together with: Oxidizing agents. Pyrophoric or self-heating substances. Food and feedingstuffs.

Further information on storage conditions
Protect from frost. Protect against direct sunlight. Store in a cool dry place. Observe legal regulations and provisions.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>ppm</th>
<th>mg/m³</th>
<th>fibres/ml</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>34590-94-8</td>
<td>(2-methoxymethylethoxy) propanol</td>
<td>50</td>
<td>308</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td>104-76-7</td>
<td>2-ethylhexan-1-ol</td>
<td>1</td>
<td>5.4</td>
<td></td>
<td>TWA (8 h)</td>
<td>EU</td>
</tr>
<tr>
<td>110-91-8</td>
<td>Morpholine</td>
<td>10</td>
<td>36</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20</td>
<td>72</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
<tr>
<td>71-23-8</td>
<td>Propan-1-ol</td>
<td>200</td>
<td>500</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>250</td>
<td>625</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
</tbody>
</table>

Revision No: 1,03 - Replaces version: 1,02
GB - EN Revision date: 19.03.2019
### DNEL/DMEL values

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>DNEL type</th>
<th>Exposure route</th>
<th>Effect</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>1174921-73-3</td>
<td>Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclenes, &lt;2% aromatics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>871 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>77 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>185 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>46 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>46 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td>27247-96-7</td>
<td>2-Ethylhexyl nitrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>0,35 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>1 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>0,52 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>0,025 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td>110-91-8</td>
<td>morpholine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>91 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>local</td>
<td>36 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worker DNEL, acute</td>
<td>inhalation</td>
<td>local</td>
<td>72 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>1,04 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>6,3 mg/kg bw/day</td>
<td></td>
</tr>
</tbody>
</table>

### PNEC values

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>Environmental compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>27247-96-7</td>
<td>2-Ethylhexyl nitrate</td>
<td>Freshwater</td>
<td>0,0008 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine water</td>
<td>0,00008 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td>0,00074 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine sediment</td>
<td>0,00074 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Micro-organisms in sewage treatment plants (STP)</td>
<td>10 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil</td>
<td>0,000191 mg/kg</td>
</tr>
<tr>
<td>110-91-8</td>
<td>morpholine</td>
<td>Freshwater</td>
<td>0,163 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater (intermittent releases)</td>
<td>0,09 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine water</td>
<td>0,016 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td>1,83 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine sediment</td>
<td>0,183 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Micro-organisms in sewage treatment plants (STP)</td>
<td>10 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil</td>
<td>0,269 mg/kg</td>
</tr>
</tbody>
</table>

**Additional advice on limit values**
- a no restriction
8.2. Exposure controls

Appropriate engineering controls
If handled uncovered, arrangements with local exhaust ventilation have to be used.

Protective and hygiene measures
Avoid exposure. Wear suitable protective clothing. Draw up and observe skin protection programme.

Eye/face protection
Suitable eye protection: Tightly sealed safety glasses.
DIN EN 166

Hand protection
Protect skin by using skin protective cream. When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. 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.
Suitable material: NBR (Nitrile rubber) Breakthrough time (maximum wearing time) 480min
Thickness of the glove material 0.45 mm
DIN EN 374

Skin protection
Wear suitable protective clothing. Take off immediately all contaminated clothing and wash it before reuse.

Respiratory protection
Wear breathing apparatus if exposed to vapours/dusts/aerosols.
When exceeding the relevant workplace exposure limits, note the following:
Suitable respiratory protective equipment: Combination filter device (DIN EN 141).
Filtering device with filter or ventilator filtering device of type: A
Observe the wear time limits as specified by the manufacturer.
Observe legal regulations and provisions.

Environmental exposure controls
Observe legal regulations and provisions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Aerosol</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>yellow-brown</td>
<td></td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
<td></td>
</tr>
<tr>
<td>pH-Value (at 20 °C)</td>
<td>not determined</td>
<td>DIN 19268</td>
</tr>
</tbody>
</table>

Changes in the physical state

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point</td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>97 °C</td>
</tr>
<tr>
<td>Sublimation point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Softening point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Pour point</td>
<td>not determined</td>
</tr>
<tr>
<td>Flash point</td>
<td>26 °C</td>
</tr>
</tbody>
</table>
Sustaining combustion: No data available

**Flammability**
- Solid: not applicable
- Gas: not applicable

Lower explosion limits: 0,5
Upper explosion limits: 13,5
Ignition temperature: > 200 °C

**Auto-ignition temperature**
- Solid: not applicable
- Gas: not applicable

**Decomposition temperature:** not determined

**Oxidizing properties**
- Not oxidising.
- Vapour pressure: not determined
- Density (at 20 °C): 0,815 g/cm³ DIN 51757
- Water solubility: insoluble

**Solubility in other solvents**
- not determined
- Partition coefficient: not determined
- Viscosity / kinematic: < 20,5 mm²/s
- Vapour density: not determined
- Evaporation rate: not determined

**9.2. Other information**
- Solid content: not determined

Data apply to technical substance: Relative density, Colour, Odour, Viscosity, pH.

SECTION 10: Stability and reactivity

**10.1. Reactivity**
- Extremely flammable aerosol.

**10.2. Chemical stability**
- The product is stable under normal conditions.

**10.3. Possibility of hazardous reactions**
- Do not expose to temperatures above 50 °C. Heating causes rise in pressure with risk of bursting.

**10.4. Conditions to avoid**
- Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air. Take precautionary measures against static discharges.

**10.5. Incompatible materials**
- Oxidizing agents, Pyrophoric or self-heating substances.

**10.6. Hazardous decomposition products**
- Incomplete combustion and thermolysis gases of different toxicity can occur. In the case of hydrocarbonaceous products such as CO, CO2, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.

**Further information**
- Do not mix with other chemicals.
SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicokinetics, metabolism and distribution
There are no data available on the mixture itself.

Acute toxicity
Based on available data, the classification criteria are not met.
<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Source</th>
<th>Exposure route</th>
<th>Species</th>
<th>Dose</th>
<th>Species</th>
<th>Dose</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>64742-48-9</td>
<td>Hydrocarbons, C10 - C13, n-alkanes, iso-alkanes, cyclics, &lt; 2 % aromates</td>
<td></td>
<td>oral</td>
<td>Rat</td>
<td>LD50 &gt;8000 mg/kg</td>
<td>Rat</td>
<td>&gt;3160 mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>dermal</td>
<td>Rabbit</td>
<td>LD50 &gt;3160 mg/kg</td>
<td>Rabbit</td>
<td>&gt;4951 mg/l</td>
<td>Rat</td>
</tr>
<tr>
<td>71-23-8</td>
<td>n-propanol</td>
<td></td>
<td>oral</td>
<td>Rat</td>
<td>LD50 8000 mg/kg</td>
<td>Rat</td>
<td>4032 mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>dermal</td>
<td>Rabbit</td>
<td>LD50 4032 mg/kg</td>
<td>Rabbit</td>
<td>&gt; 33,8 mg/l</td>
<td>Rat</td>
</tr>
<tr>
<td>1174921-73-3</td>
<td>Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclenes, &lt;2% aromatics</td>
<td></td>
<td>oral</td>
<td>Rat</td>
<td>LD50 &gt;15000 mg/kg</td>
<td>Rat</td>
<td>4951 mg/l</td>
<td>Study report (1977)</td>
</tr>
<tr>
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<td>dermal</td>
<td>Rabbit</td>
<td>LD50 &gt;5000 mg/kg</td>
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<td>&gt; 4951 mg/l</td>
<td>Study report (1993)</td>
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<tr>
<td>34590-94-8</td>
<td>(2-methoxymethylethoxy)propanol</td>
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<td>Rat</td>
<td>LD50 5135 mg/kg</td>
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<td>500 mg/l</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>dermal</td>
<td>Rabbit</td>
<td>LD50 13000 mg/kg</td>
<td>Rabbit</td>
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<tr>
<td>27247-96-7</td>
<td>2-Ethylhexyl nitrate</td>
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<td>oral</td>
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<td>LD50 &gt;9640 mg/kg</td>
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<td></td>
<td></td>
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<td>Rabbit</td>
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<tr>
<td>5989-27-5</td>
<td>(R)-p-mentha-1,8-diene, d-limonene</td>
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<td>Rat</td>
<td>LD50 &gt;2000 mg/kg</td>
<td>Rat</td>
<td>1,5 mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>dermal</td>
<td>Rabbit</td>
<td>LD50 &gt;2000 mg/kg</td>
<td>Rabbit</td>
<td>1,5 mg/l</td>
<td></td>
</tr>
<tr>
<td>104-76-7</td>
<td>2-Ethylhexan-1-ol</td>
<td></td>
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<td>Rat</td>
<td>LD50 2047 mg/kg</td>
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</tr>
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<td></td>
<td></td>
<td>dermal</td>
<td>Rabbit</td>
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<tr>
<td>64742-94-5</td>
<td>Hydrocarbons, C10, aromatics, &lt;1% naphthalene</td>
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<td>Rat</td>
<td>LD50 &gt;5000 mg/kg</td>
<td>Rat</td>
<td>&gt; 5 mg/l</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>dermal</td>
<td>Rabbit</td>
<td>LD50 &gt;2000 mg/kg</td>
<td>Rabbit</td>
<td>&gt; 5 mg/l</td>
<td>Rat</td>
</tr>
<tr>
<td>110-91-8</td>
<td>morpholine</td>
<td></td>
<td>oral</td>
<td>Rat</td>
<td>LD50 ca. 1900 mg/kg</td>
<td>Rat</td>
<td>500 mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>dermal</td>
<td>Rabbit</td>
<td>LD50 ca. 500 mg/kg</td>
<td>Rabbit</td>
<td>195</td>
<td>Arch. Ind. Hyg Occup. Med. 10 61–68 (195)</td>
</tr>
</tbody>
</table>
Irritation and corrosivity
Causes serious eye damage.
Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Sensitising effects
May cause an allergic skin reaction. ((R)-p-mentha-1,8-diene, d-limonene)

Carcinogenic/mutagenic/toxic effects for reproduction
Based on available data, the classification criteria are not met.
No indication of human carcinogenicity.
No indications of human germ cell mutagenicity exist.
No indications of human reproductive toxicity exist.

STOT-single exposure
May cause drowsiness or dizziness.

STOT-repeated exposure
Repeated exposure may cause skin dryness or cracking.

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

Specific effects in experiment on an animal
No information available.

Additional information on tests
The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity
Toxic to aquatic life with long lasting effects.
### CAS No | Chemical name | Aquatic toxicity | Dose | [h] | [d] | Species | Source
--- | --- | --- | --- | --- | --- | --- | ---
64742-48-9 | Hydrocarbons, C10 - C13, n-alkanes, iso-alkanes, cyclics, < 2 % aromates | Acute fish toxicity | LC50 | >1000 mg/l | 96 h | Oncorhynchus mykiss (Rainbow trout) | CONCAWE, Brussels, Belgium (2010)
 | Acute algae toxicity | ErC50 | >1000 mg/l | 96 h | Scenedesmus subspicatus | Study report (1998)
 | Acute crustacea toxicity | EC50 | >1000 mg/l | 48 h | Daphnia magna | Study report (2010)
71-23-8 | n-propanol | Acute fish toxicity | LC50 | 4480 mg/l | 96 h | Pimephales promelas | Study report (1998)
1174921-73-3 | Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclenes, <2% aromatics | Acute fish toxicity | LC50 | >1000 mg/l | 96 h | Oncorhynchus mykiss (Rainbow trout) | CONCAWE, Brussels, Belgium (2010)
 | Acute algae toxicity | ErC50 | >1000 mg/l | 72 h | Scenedesmus subspicatus | Study report (2013)
 | Acute crustacea toxicity | EC50 | >1000 mg/l | 48 h | Daphnia magna | Study report (2010)
34590-94-8 | (2-methoxymethylethoxy)propanol | Acute fish toxicity | LC50 | 10000 mg/l | 96 h | Pimephales promelas | Study report (1998)
 | Acute algae toxicity | ErC50 | 969 mg/l | 96 h | Scenedesmus subspicatus | Study report (2010)
 | Acute crustacea toxicity | EC50 | 1919 mg/l | 48 h | Daphnia magna | Study report (2013)
27247-96-7 | 2-Ethylhexyl nitrate | Acute fish toxicity | LC50 | 2 mg/l | 96 h | Danio rerio | Study report (2010)
 | Acute algae toxicity | ErC50 | > 12,6 mg/l | 72 h | Pimephales promelas | Study report (1998)
 | Acute crustacea toxicity | EC50 | > 12,6 mg/l | 48 h | Daphnia magna | Study report (2013)
 | Acute bacteria toxicity | (> 1000 mg/l) | 3 h | activated sludge of a predominantly domestic sewage | Study report (2010)
5989-27-5 | (R)-p-mentha-1,8-diene, d-limonene | Acute fish toxicity | LC50 | 0,72 mg/l | 96 h | Pimephales promelas | Study report (1998)
 | Acute algae toxicity | ErC50 | 0,32 mg/l | 72 h | Pimephales promelas | Study report (2010)
 | Acute crustacea toxicity | EC50 | 0,307 mg/l | 48 h | Daphnia magna | Study report (2010)
 | Fish toxicity | NOEC | 0,37 mg/l | 8 d | Daphnia magna | Study report (2010)
 | Crustacea toxicity | NOEC | 0,08 mg/l | 21 d | Daphnia magna | Study report (2010)
 | Acute bacteria toxicity | (209 mg/l) | 3 h | activated sludge of a predominantly domestic sewage | Study report (2010)
104-76-7 | 2-Ethylhexan-1-ol | Acute fish toxicity | LC50 | 17,1 mg/l | 96 h | Leuciscus idus (golden orfe) | Study report (2010)
 | Acute algae toxicity | ErC50 | 11,5 mg/l | 72 h | Scenedesmus subspicatus | Study report (2010)
 | Acute crustacea toxicity | EC50 | 39 mg/l | 48 h | Daphnia magna | Study report (2010)
64742-94-5 | Hydrocarbons, C10, aromatics, <1% naphthalene |
Acute fish toxicity 96 h LC50 >1-<=10 mg/l Pimephales promelas
Acute algae toxicity 96 h ErC50 >1-<=10 mg/l Scenedesmus subspicatus
Acute crustacea toxicity 48 h EC50 >1-<=10 mg/l Daphnia magna
110-91-8

12.2. Persistence and degradability
The product has not been tested.

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Method</th>
<th>Value</th>
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<td>110-91-8</td>
<td>morpholine</td>
<td>OECD 301E</td>
<td>93%</td>
<td>25</td>
<td>Easily biodegradable (concerning to the criteria of the OECD)</td>
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</table>

12.3. Bioaccumulative potential
The product has not been tested.

Partition coefficient n-octanol/water

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<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-23-8</td>
<td>n-propanol</td>
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<tr>
<td>27247-96-7</td>
<td>2-Ethylhexyl nitrate</td>
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<td>4,38</td>
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<tr>
<td>104-76-7</td>
<td>2-Ethylhexan-1-ol</td>
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<td>110-91-8</td>
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<td>-2,55</td>
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</table>

BCF

<table>
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<th>BCF</th>
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<th>Source</th>
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</thead>
<tbody>
<tr>
<td>1174921-73-3</td>
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<td>144,3</td>
<td>calculated</td>
<td>Other company data (</td>
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<td>Other company data (</td>
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<tr>
<td>110-91-8</td>
<td>morpholine</td>
<td>0</td>
<td>Cyprinus carpio</td>
<td>Review article or ha</td>
</tr>
</tbody>
</table>

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

12.5. Results of PBT and vPvB assessment
The product has not been tested.

12.6. Other adverse effects
No information available.

Further information
Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
**Advice on disposal**
Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

**Waste disposal number of waste from residues/unused products**
160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; gases in pressure containers (including halons) containing hazardous substances; hazardous waste

**Waste disposal number of used product**
160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; gases in pressure containers (including halons) containing hazardous substances; hazardous waste

**Waste disposal number of contaminated packaging**
150104 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); metallic packaging

### SECTION 14: Transport information

#### Land transport (ADR/RID)
- **14.1. UN number:** UN 1950
- **14.2. UN proper shipping name:** AEROSOLS
- **14.3. Transport hazard class(es):** 2
- **14.4. Packing group:** -
- Hazard label: 2.1
- Classification code: 5F
- Special Provisions: 190 327 344 625
- Limited quantity: 1 L
- Excepted quantity: E0
- Transport category: 2
- Tunnel restriction code: D

#### Inland waterways transport (ADN)
- **14.1. UN number:** UN 1950
- **14.2. UN proper shipping name:** AEROSOLS
- **14.3. Transport hazard class(es):** 2
- **14.4. Packing group:** -
- Hazard label: 2.1
- Classification code: 5F
- Special Provisions: 190 327 344 625
- Limited quantity: 1 L
- Excepted quantity: E0

#### Marine transport (IMDG)
- **14.1. UN number:** UN 1950
- **14.2. UN proper shipping name:** AEROSOLS (2-Ethylhexyl nitrate)
- **14.3. Transport hazard class(es):** 2.1
- **14.4. Packing group:** -
- Hazard label: 2.1
- Marine pollutant: yes
- Special Provisions: 63, 190, 277, 327, 344, 381,959
- Limited quantity: 1000 mL
- Excepted quantity: E0
- EmS: F-D, S-U
Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 1950
14.2. UN proper shipping name: AEROSOLS, flammable
14.3. Transport hazard class(es): 2.1
14.4. Packing group: -

Hazard label: 2.1
Special Provisions: A145 A167 A802
Limited quantity Passenger: 30 kg G
Passenger LQ: Y203
Excepted quantity: E0
IATA-packing instructions - Passenger: 203
IATA-max. quantity - Passenger: 75 kg
IATA-packing instructions - Cargo: 203
IATA-max. quantity - Cargo: 150 kg

14.5. Environmental hazards
ENVIRONMENTALLY HAZARDOUS: yes
Danger releasing substance: 2-ethylhexyl nitrate

14.6. Special precautions for user
No information available.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
EU regulatory information
Restrictions on use (REACH, annex XVII):
Entry 28: Hydrocarbons, C10 - C13, n-alkanes, iso-alkanes, cyclics, < 2 % aromates; Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclenes, <2% aromatics
2010/75/EU (VOC): No information available.
2004/42/EC (VOC): No information available.

Additional information
Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)
Aerosol directive (75/324/EEC)

National regulatory information
Water contaminating class (D): 2 - clearly water contaminating

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

SECTION 16: Other information

Changes
This data sheet contains changes from the previous version in section(s): 2,3,5,8,9,10,11,12,14,15.

Abbreviations and acronyms
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA: International Air Transport Association
IMDG: International Maritime Code for Dangerous Goods
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL/DMEL: Derived No Effect Level / Derived Minimal Effect Level
WEL (UK): Workplace Exposure Limits
TWA (EC): Time-Weighted Average
ATE: Acute Toxicity Estimate
STEL (EC) Short Term Exposure Limit
LC50: Lethal Concentration
EC50: half maximal Effective Concentration
ErC50: means EC50 in terms of reduction of growth rate

Relevant H and EUH statements (number and full text)

H222 Extremely flammable aerosol.
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H229 Pressurised container: May burst if heated.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H311 Toxic in contact with skin.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
EUH044 Risk of explosion if heated under confinement.
EUH066 Repeated exposure may cause skin dryness or cracking.

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

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)