1.1. Product identifier

133 Valve cleaner MP13300400ABV

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 Deutschland Vertriebs GmbH & Co. Betriebs 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
Internet: 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

Indications of danger: F+ - Extremely flammable, Xn - Harmful, Xi - Irritant
R phrases:
Extremely flammable.
Harmful by inhalation and in contact with skin.
Irritating to respiratory system and skin.
Risk of serious damage to eyes.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

Hazard categories:
Aerosol: Aerosol 1
Acute toxicity: Acute Tox. 4
Skin corrosion/irritation: Skin Corr. 1B
Serious eye damage/eye irritation: Eye Dam. 1
Specific target organ toxicity - single exposure: STOT SE 3
Specific target organ toxicity - repeated exposure: STOT RE 2
Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:
Extremely flammable aerosol.
Pressurised container: May burst if heated.
Causes severe skin burns and eye damage.
Harmful if inhaled.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.
Harmful to aquatic life with long lasting effects.

2.2. Label elements

Hazard components for labelling
xylene
n-propanol
morpholine
Signal word: Danger
Pictograms: GHS02-GHS05-GHS07-GHS08

Hazard statements
H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H314 Causes severe skin burns and eye damage.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful 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.
P260 Do not breathe Aerosol.
P280 Wear Eye/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302+P352 IF ON SKIN: Wash with plenty of Water and soap..
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P251 Do not pierce or burn, even after use.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

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

SECTION 3: Composition/information on ingredients

3.2. Mixtures
Hazardous components

<table>
<thead>
<tr>
<th>EC No</th>
<th>Chemical name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>251-535-7</td>
<td>xylene</td>
<td>25 - &lt; 50 %</td>
</tr>
<tr>
<td>1330-20-7</td>
<td>2-fluorobenzene</td>
<td>10 - &lt; 20 %</td>
</tr>
<tr>
<td>601-22-00-9</td>
<td>2-fluorobenzene</td>
<td>10 - &lt; 20 %</td>
</tr>
<tr>
<td>200-746-9</td>
<td>n-propanol</td>
<td>10 - &lt; 20 %</td>
</tr>
<tr>
<td>918-668-5</td>
<td>Solvent naphtha (petroleum), aromatic, light</td>
<td>10 - &lt; 20 %</td>
</tr>
<tr>
<td>64742-95-6</td>
<td>3-methylphenol</td>
<td>10 - &lt; 20 %</td>
</tr>
<tr>
<td>202-849-4</td>
<td>ethylbenzene</td>
<td>10 - &lt; 20 %</td>
</tr>
<tr>
<td>100-41-4</td>
<td>2-fluorobenzene</td>
<td>10 - &lt; 20 %</td>
</tr>
<tr>
<td>601-023-00-4</td>
<td>2-fluorobenzene</td>
<td>10 - &lt; 20 %</td>
</tr>
<tr>
<td>203-815-1</td>
<td>morpholine</td>
<td>5 - &lt; 10 %</td>
</tr>
<tr>
<td>110-91-8</td>
<td>3-methylphenol</td>
<td>3 - &lt; 5 %</td>
</tr>
<tr>
<td>108-88-3</td>
<td>Toluene</td>
<td>0.1 - &lt; 1 %</td>
</tr>
<tr>
<td>601-021-00-3</td>
<td>2-fluorobenzene</td>
<td>10 - &lt; 20 %</td>
</tr>
</tbody>
</table>

Further Information

Regulation (EC) No. 648/2004 (Detergents regulation)
Contains: 30 % and more, aromatic hydrocarbons
Contains: 5 % and more but less than 15 %, aliphatic hydrocarbons

SECTION 4: First aid measures

4.1. Description of first aid measures

After inhalation
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with skin
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Medical treatment necessary.
After contact with eyes
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion
Rinse mouth immediately and drink plenty of water.
Caution if victim vomits: Risk of aspiration!

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.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
Carbon dioxide (CO2). Foam. Extinguishing powder.

Unsuitable extinguishing media
Full water jet

5.2. Special hazards arising from the substance or mixture
Combustible. Vapours may form explosive mixtures with air.

5.3. Advice for firefighters
Wear a self-contained breathing apparatus and chemical protective clothing. Full protective suit.

Additional information
Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. 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
Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Wear personal protection equipment.

6.2. Environmental precautions
Do not allow uncontrolled discharge of product into the environment. Explosion hazard.

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

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
Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion
Do not spray on naked flames or any incandescent material. Keep away from sources of ignition. - No smoking. Vapours may form explosive mixtures with air.

7.2. Conditions for safe storage, including any incompatibilities
Requirements for storage rooms and vessels
Keep container tightly closed. Keep in a cool, well-ventilated place. Keep away from sources of ignition.
- No smoking.

Advice on storage compatibility
Do not store together with: Material, rich in oxygen, oxidizing.

Further information on storage conditions
Protect from frost. Protect against direct sunlight.

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>100-41-4</td>
<td>Ethylbenzene</td>
<td>100</td>
<td>441</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>125</td>
<td>552</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</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>
<tr>
<td>108-88-3</td>
<td>Toluene</td>
<td>50</td>
<td>191</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>384</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
<tr>
<td>1330-20-7</td>
<td>Xylene: mixed</td>
<td>50</td>
<td>220</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td>isomers</td>
<td>100</td>
<td>441</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
</tbody>
</table>

Biological Monitoring Guidance Values (EH40)

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance, o-, m-, p- or mixed isomers</th>
<th>Parameter</th>
<th>Value</th>
<th>Test material</th>
<th>Sampling time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1330-20-7</td>
<td>Xylene</td>
<td>methyl hippuric acid</td>
<td>650 mmol/mol</td>
<td>urine</td>
<td>Post shift</td>
</tr>
</tbody>
</table>

Additional advice on limit values
- a no restriction
- b End of exposure or shift
- c in long-term exposure: after several shifts
- d prior to next shift

STEL (EC) : Short Term Exposure Limit
TWA (EC): time-weighted average
U: Urea
B: Blood

8.2. Exposure controls

Appropriate engineering controls
If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures
Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat...
or drink.

**Eye/face protection**

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

**Hand protection**

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.

**Respiratory protection**

Wear breathing apparatus if exposed to vapours/dusts/aerosols.
Suitable respiratory protection apparatus: Combination filtering device (EN 14387)
Filtering device with filter or ventilator filtering device of type:
Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

### SECTION 9: Physical and chemical properties

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Aerosol</td>
</tr>
<tr>
<td>Colour</td>
<td>light yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>amine-like</td>
</tr>
</tbody>
</table>

**Test method**

pH-Value (at 20 °C): Not applicable

**Changes in the physical state**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point</td>
<td>No information available.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range:</td>
<td>100 °C</td>
</tr>
<tr>
<td>Sublimation point</td>
<td>No information available.</td>
</tr>
<tr>
<td>Softening point</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>15 °C</td>
</tr>
<tr>
<td>Lower explosion limits</td>
<td>1 vol. %</td>
</tr>
<tr>
<td>Upper explosion limits</td>
<td>13.5 vol. %</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>No information available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No information available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No information available.</td>
</tr>
<tr>
<td>Density (at 20 °C):</td>
<td>0.878 g/cm³ DIN 51757</td>
</tr>
<tr>
<td>Bulk density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No information available.</td>
</tr>
<tr>
<td>Viscosity / dynamic (at 40 °C)</td>
<td>&lt; 7 mm²/s</td>
</tr>
<tr>
<td>Viscosity / kinematic</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flow time</td>
<td>No information available.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No information available.</td>
</tr>
</tbody>
</table>
133 Valve cleaner MP13300400ABV

Evaporation rate: No information available.
Solvent separation test: No information available.
Solvent content: No information available.

9.2. Other information
Solid content: No information available.

Density  Data apply to the technically active substance.
pressure - bar (20°C)

SECTION 10: Stability and reactivity

10.1. Reactivity
No information available.

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 heat. Ignition hazard.

10.5. Incompatible materials
No information available.

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
No information available.

Acute toxicity
Harmful if inhaled.
Acute toxicity, oral. Acute toxicity, inhalant.

ATEmix calculated
ATE (inhalative vapour) 19,63 mg/l; ATE (inhalative aerosol) 2,511 mg/l
133 Valve cleaner MP13300400ABV

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Exposure route</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1330-20-7</td>
<td>xylene</td>
<td>oral</td>
<td>LD50</td>
<td>4300 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>1700 mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative (4 h) vapour</td>
<td>LC50</td>
<td>21.7 mg/l</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative aerosol</td>
<td>ATE</td>
<td>1.5 mg/l</td>
<td></td>
</tr>
<tr>
<td>71-23-8</td>
<td>n-propanol</td>
<td>oral</td>
<td>LD50</td>
<td>8000 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>4032 mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative (4 h) vapour</td>
<td>LC50</td>
<td>&gt; 33.8 mg/l</td>
<td>Rat</td>
</tr>
<tr>
<td>64742-95-6</td>
<td>Solvent naphtha (petroleum), aromatic, light</td>
<td>oral</td>
<td>LD50</td>
<td>3592 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt; 3160 mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td>100-41-4</td>
<td>ethylbenzene</td>
<td>oral</td>
<td>LD50</td>
<td>3500 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>15400 mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative (4 h) vapour</td>
<td>LC50</td>
<td>17.2 mg/l</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative aerosol</td>
<td>ATE</td>
<td>1.5 mg/l</td>
<td></td>
</tr>
<tr>
<td>110-91-8</td>
<td>morpholine</td>
<td>oral</td>
<td>LD50</td>
<td>1900 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>500 mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative (4 h) vapour</td>
<td>LC50</td>
<td>8 mg/l</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative aerosol</td>
<td>ATE</td>
<td>0.5 mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative (4 h) gas</td>
<td>LC50</td>
<td>8000 ppm</td>
<td>Rabbit</td>
</tr>
<tr>
<td>108-88-3</td>
<td>toluene</td>
<td>oral</td>
<td>LD50</td>
<td>&gt; 5000 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt; 2000 mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative (4 h) vapour</td>
<td>LC50</td>
<td>49 mg/l</td>
<td>Rat</td>
</tr>
</tbody>
</table>

**Irritation and corrosivity**
Causes severe skin burns and eye damage.
Irritating to eyes. Risk of serious damage to eyes. Following inhalation: Lung irritation. Coughing. Shortage of breath. After skin contact: Irritant.

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

**STOT-single exposure**
May cause respiratory irritation. (xylene), (Solvent naphtha (petroleum), aromatic, light)
May cause drowsiness or dizziness. (n-propanol), (Solvent naphtha (petroleum), aromatic, light), (toluene)
### Severe effects after repeated or prolonged exposure
May cause damage to organs through prolonged or repeated exposure. (xylene), (ethylbenzene), (toluene)

### 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.

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

### Specific effects in experiment on an animal
No information available.

### SECTION 12: Ecological information

#### 12.1. Toxicity
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Aquatic toxicity</th>
<th>Method</th>
<th>Dose</th>
<th>[h]</th>
<th>[d]</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1330-20-7</td>
<td>xylene</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>4,2 mg/l</td>
<td>96 h</td>
<td></td>
<td>Oncorhynchus mykiss (Rainbow trout)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute algae toxicity</td>
<td>ErC50</td>
<td>&gt; 100 mg/l</td>
<td></td>
<td></td>
<td>Selenastrum capricornutum</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50</td>
<td>1,8 - 2,9 mg/l</td>
<td>48 h</td>
<td></td>
<td>Daphnia magna</td>
<td></td>
</tr>
<tr>
<td>71-23-8</td>
<td>n-propanol</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>4480 mg/l</td>
<td>96 h</td>
<td></td>
<td>Pimephales promelas</td>
<td></td>
</tr>
<tr>
<td>64742-95-6</td>
<td>Solvent naphtha (petroleum), aromatic, light</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>9,2 mg/l</td>
<td>96 h</td>
<td></td>
<td>Oncorhynchus mykiss (Rainbow trout)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute algae toxicity</td>
<td>ErC50</td>
<td>2,6-2,9 mg/l</td>
<td>96 h</td>
<td></td>
<td>Pseudokirchneriella subcapitata</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50</td>
<td>3,2 mg/l</td>
<td>48 h</td>
<td></td>
<td>Daphnia magna</td>
<td></td>
</tr>
<tr>
<td>100-41-4</td>
<td>ethylbenzene</td>
<td>Acute algae toxicity</td>
<td>ErC50</td>
<td>3,6 mg/l</td>
<td>96 h</td>
<td></td>
<td>GESTIS</td>
<td></td>
</tr>
<tr>
<td>110-91-8</td>
<td>morpholine</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>179 mg/l</td>
<td>96 h</td>
<td></td>
<td>Oncorhynchus mykiss (Rainbow trout)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute algae toxicity</td>
<td>ErC50</td>
<td>58 mg/l</td>
<td>72 h</td>
<td></td>
<td>Desmodesmus subspicatus.</td>
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<tr>
<td></td>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50</td>
<td>45 mg/l</td>
<td>48 h</td>
<td></td>
<td>Daphnia magna (Big water flea)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Algea toxicity</td>
<td>NOEC</td>
<td>10 mg/l</td>
<td></td>
<td>4 d</td>
<td>Desmodesmus subspicatus.</td>
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<tr>
<td>108-88-3</td>
<td>toluene</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>13 mg/l</td>
<td>96 h</td>
<td></td>
<td>Carassius auratus</td>
<td>IUCLID</td>
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<td></td>
<td>Acute algae toxicity</td>
<td>ErC50</td>
<td>12,5 mg/l</td>
<td>72 h</td>
<td></td>
<td>GESTIS</td>
<td></td>
</tr>
</tbody>
</table>
12.2. Persistence and degradability
There are no data available on the mixture itself. AOX (mg/l): 0

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Method</th>
<th>Value</th>
<th>d</th>
<th>Source</th>
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</thead>
<tbody>
<tr>
<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>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential
There are no data available on the mixture itself.

Partition coefficient n-octanol/water

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
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<tbody>
<tr>
<td>71-23-8</td>
<td>n-propanol</td>
<td>0,29</td>
</tr>
<tr>
<td>100-41-4</td>
<td>ethylbenzene</td>
<td>3,15</td>
</tr>
<tr>
<td>110-91-8</td>
<td>morpholine</td>
<td>-2,55</td>
</tr>
<tr>
<td>108-88-3</td>
<td>toluene</td>
<td>2,73</td>
</tr>
</tbody>
</table>

BCF

<table>
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<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>BCF</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-91-8</td>
<td>morpholine</td>
<td>&lt; 2,8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment
This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Other adverse effects
No information available.

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal
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 Classified as 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 Classified as hazardous waste.

Waste disposal number of contaminated packaging
150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances Classified as hazardous waste.

Contaminated packaging
Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the
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
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

Marine transport (IMDG)

14.1. UN number: UN 1950
14.2. UN proper shipping name: AEROSOLS
14.3. Transport hazard class(es): 2.1
14.4. Packing group: -
Hazard label: 2.1
Marine pollutant: No
Special Provisions: 63, 190, 277, 327, 344, 959
Limited quantity: 1000 mL
EmS: F-D, S-U

Air transport (ICAO)

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
Limited quantity Cargo: 200 kg
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
14.6. Special precautions for user

Warning: Flammable gases

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

No information available.

SECTION 15: Regulatory information

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

EU regulatory information

1999/13/EC (VOC): VOC-CH: 0,300 kg/400ml Dose (86,05 % w/w)

VOC 1999/13/EG: 94,05 % w/w

Additional information

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

National regulatory information

Water contaminating class (D): 1 - slightly water contaminating

Additional information

94/69/EC (21st ATP). The benzene content of the product is less than 0.1%. It applies the annotation P. Classification and labeling as carcinogenic is not necessary.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2.

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 R phrases (number and full text)

10 Flammable.
11 Highly flammable.
12 Extremely flammable.
20 Harmful by inhalation.
20/21 Harmful by inhalation and in contact with skin.
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
34 Causes burns.
36/37/38 Irritating to eyes, respiratory system and skin.
133 Valve cleaner MP13300400ABV

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36/38 Irritating to eyes and skin.
37 Irritating to respiratory system.
37/38 Irritating to respiratory system and skin.
38 Irritating to skin.
41 Risk of serious damage to eyes.
48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
51 Toxic to aquatic organisms.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
53 May cause long-term adverse effects in the aquatic environment.
63 Possible risk of harm to the unborn child.
65 Harmful: may cause lung damage if swallowed.
66 Repeated exposure may cause skin dryness or cracking.
67 Vapours may cause drowsiness and dizziness.

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.
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.
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.

Further 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.

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