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

1.1. Product identifier
112 Brake spray MP11200400AB

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

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 Telefax: +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
Regulation (EC) No. 1272/2008
Hazard categories:
Aerosol: Aerosol 1
Skin corrosion/irritation: Skin Irrit. 2
Respiratory or skin sensitisation: Skin Sens. 1
Specific target organ toxicity - single exposure: STOT SE 3
Hazardous to the aquatic environment: Aquatic Chronic 3
Hazard Statements:
Extremely flammable aerosol.
Pressurised container: May burst if heated.
Causes skin irritation.
May cause an allergic skin reaction.
May cause drowsiness or dizziness.
Harmful to aquatic life with long lasting effects.

2.2. Label elements
Regulation (EC) No. 1272/2008
Hazard components for labelling
Hydrocarbons, C6-C7, n-alkanes, isoalkanes cyclic, < 5% n-hexane
Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics
Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts
(R)-p-mentha-1,8-diene, d-limonene
Signal word: Danger
Pictograms:

Hazard statements
H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H315 Causes skin irritation.
**Precautionary statements**

- **H317** May cause an allergic skin reaction.
- **H336** May cause drowsiness or dizziness.
- **H412** Harmful to aquatic life with long lasting effects.

**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>Chemical name</th>
<th>Quantity</th>
<th>EC No</th>
<th>Index No</th>
<th>REACH No</th>
<th>GHS Classification</th>
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</thead>
<tbody>
<tr>
<td>75-28-5</td>
<td>isobutane</td>
<td>25 - &lt; 50 %</td>
<td>200-857-2</td>
<td>601-004-00-0</td>
<td>01-2119485395-27</td>
<td>Flam. Gas 1, Liquefied gas; H220 H280</td>
</tr>
<tr>
<td>92128-66-0</td>
<td>Hydrocarbons, C6-C7, n-alkanes, isoalkanes cyclic, &lt; 5% n-hexane</td>
<td>0 - &lt;7 %</td>
<td>921-024-6</td>
<td>01-2119475514-35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>74-98-6</td>
<td>propane</td>
<td>5 - &lt; 10 %</td>
<td>200-827-9</td>
<td>601-003-00-5</td>
<td>01-2119486944-21</td>
<td>Flam. Gas 1, Liquefied gas; H220 H280</td>
</tr>
<tr>
<td>64742-49-0</td>
<td>Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics</td>
<td>0 - &lt;7 %</td>
<td>927-510-4</td>
<td>01-2119475515-33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>106-97-8</td>
<td>butane</td>
<td>1 - &lt; 3 %</td>
<td>203-448-7</td>
<td>601-004-00-0</td>
<td>01-2119474691-32</td>
<td>Flam. Gas 1, Liquefied gas; H220 H280</td>
</tr>
<tr>
<td>5989-27-5</td>
<td>(R)-p-mentha-1,8-diene, d-limonene</td>
<td>0.1 - &lt; 1 %</td>
<td>227-813-5</td>
<td>01-2119529223-47</td>
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<td></td>
</tr>
<tr>
<td>68584-23-6</td>
<td>Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts</td>
<td>0.1 - &lt; 1 %</td>
<td>271-529-4</td>
<td>01-2119492627-25</td>
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<td></td>
</tr>
<tr>
<td>70024-69-0</td>
<td>Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts</td>
<td>0.1 - &lt; 1 %</td>
<td>274-263-7</td>
<td>01-2119492616-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1471316-72-9</td>
<td>Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts</td>
<td>0.1 - &lt; 1 %</td>
<td>939-603-7</td>
<td>01-2119978241-36</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.

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>106-97-8</td>
<td>Butane</td>
<td>600</td>
<td>1450</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>750</td>
<td>1810</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
<tr>
<td>14807-96-6</td>
<td>Talc respirable dust</td>
<td>-</td>
<td>1</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>Titanium dioxide, respirable</td>
<td>-</td>
<td>4</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td>CAS No</td>
<td>Substance</td>
<td>DNEL type</td>
<td>Exposure route</td>
<td>Effect</td>
<td>Value</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------------------------------------------------</td>
<td>------------------------------</td>
<td>----------------</td>
<td>------------</td>
<td>----------------------</td>
<td></td>
</tr>
<tr>
<td>92128-66-0</td>
<td>Hydrocarbons, C6-C7, n-alkanes, isoalkanes cyclic, &lt; 5% n-hexane</td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>2035 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>773 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>608 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>699 mg/kg bw/day</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>699 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td>64742-49-0</td>
<td>Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics</td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>2085 mg/m³</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>300 mg/kg bw/day</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>447 mg/m³</td>
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<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>149 mg/kg bw/day</td>
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<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>149 mg/kg bw/day</td>
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<tr>
<td>70024-69-0</td>
<td>Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts</td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>11,75 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>3,33 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>local</td>
<td>1,03 mg/cm²</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>2,9 mg/m³</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>1,667 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>local</td>
<td>0,513 mg/cm²</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>0,833 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td>1471316-72-9</td>
<td>Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts</td>
<td>Worker DNEL, long-term</td>
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<td>systemic</td>
<td>35,26 mg/m³</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>25 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, acute</td>
<td>dermal</td>
<td>local</td>
<td>1,04 mg/cm²</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>8,7 mg/m³</td>
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<td>12,5 mg/kg bw/day</td>
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<td>systemic</td>
<td>2,5 mg/kg bw/day</td>
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PNEC values

<table>
<thead>
<tr>
<th>Substance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SubstanceCAS No</strong></td>
<td></td>
</tr>
<tr>
<td>Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts 70024-69-0</td>
<td></td>
</tr>
<tr>
<td>Freshwater</td>
<td>1 mg/l</td>
</tr>
<tr>
<td>Freshwater (intermittent releases)</td>
<td>10 mg/l</td>
</tr>
<tr>
<td>Marine water</td>
<td>1 mg/l</td>
</tr>
<tr>
<td>Freshwater sediment</td>
<td>226000000 mg/kg</td>
</tr>
<tr>
<td>Marine sediment</td>
<td>226000000 mg/kg</td>
</tr>
<tr>
<td>Secondary poisoning</td>
<td>16,667 mg/kg</td>
</tr>
<tr>
<td>Micro-organisms in sewage treatment plants (STP)</td>
<td>1000 mg/l</td>
</tr>
<tr>
<td>Soil</td>
<td>271000000 mg/kg</td>
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<tr>
<td>Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts 1471316-72-9</td>
<td></td>
</tr>
<tr>
<td>Freshwater</td>
<td>0,1 mg/l</td>
</tr>
<tr>
<td>Freshwater (intermittent releases)</td>
<td>1 mg/l</td>
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<tr>
<td>Marine water</td>
<td>0,1 mg/l</td>
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<tr>
<td>Freshwater sediment</td>
<td>45211 mg/kg</td>
</tr>
<tr>
<td>Marine sediment</td>
<td>45211 mg/kg</td>
</tr>
<tr>
<td>Micro-organisms in sewage treatment plants (STP)</td>
<td>1000 mg/l</td>
</tr>
<tr>
<td>Soil</td>
<td>36739,74 mg/kg</td>
</tr>
</tbody>
</table>

**Additional advice on limit values**

- a no restriction
- b End of exposure or end of shift
- c at long term exposure: after several previous shifts
- d before next shift

- blood (B)
- Urine (U)

**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: AX
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>grey</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>
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<tr>
<td>Changes in the physical state</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting point</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>-40 °C</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>-80 °C</td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td></td>
<td>not applicable</td>
</tr>
<tr>
<td>Solid</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Lower explosion limits</td>
<td>1,1 vol. %</td>
<td></td>
</tr>
<tr>
<td>Upper explosion limits</td>
<td>9,4 vol. %</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td></td>
<td>not applicable</td>
</tr>
<tr>
<td>Solid</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Gas</td>
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</tr>
<tr>
<td>Decomposition temperature</td>
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</tr>
<tr>
<td>Oxidizing properties</td>
<td></td>
<td>not oxidising</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>not determined</td>
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</tr>
<tr>
<td>Density (at 20 °C)</td>
<td>1,0856 g/cm³</td>
<td>DIN 51757</td>
</tr>
<tr>
<td>Water solubility</td>
<td>The study does not need to be conducted because the substance is known to be insoluble in water.</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
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<td></td>
</tr>
<tr>
<td>Partition coefficient</td>
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<td></td>
</tr>
<tr>
<td>Vapour density</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>not determined</td>
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9.2. Other information

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<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid content</td>
<td>not determined</td>
</tr>
</tbody>
</table>

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 storage at normal ambient temperatures.

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.
## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### 112 Brake spray MP11200400AB

Print date: 28.06.2019  
Product code: 1101054  
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### Chemicals in the Product

<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>75-28-5</td>
<td>isobutane</td>
<td>Inhalation vapour</td>
<td>LC50 1237 mg/l</td>
<td>Mouse.</td>
<td>Study report (1977)</td>
</tr>
<tr>
<td>92128-66-0</td>
<td>Hydrocarbons, C6-C7, n-alkanes, isoalkanes cyclic, &lt; 5% n-hexane</td>
<td>Oral</td>
<td>LD50 &gt; 5000 mg/kg</td>
<td>Rat</td>
<td>Study report (1977)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal</td>
<td>LD50 &gt; 2800 - 3100 mg/kg</td>
<td>Rat</td>
<td>Study report (1977)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation (4 h) vapour</td>
<td>LC50 &gt; 25,2 mg/l</td>
<td>Rat</td>
<td>Study report (1988)</td>
</tr>
<tr>
<td>64742-49-0</td>
<td>Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics</td>
<td>Oral</td>
<td>LD50 5500 mg/kg</td>
<td>Rat</td>
<td>Study report (1977)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal</td>
<td>LD50 &gt; 2800 - 3100 mg/kg</td>
<td>Rat</td>
<td>Study report (1977)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation (4 h) vapour</td>
<td>LC50 &gt; 23,3 mg/l</td>
<td>Rat</td>
<td>Study report (1988)</td>
</tr>
<tr>
<td>106-97-8</td>
<td>butane</td>
<td>Inhalation (4 h) gas</td>
<td>LC50 658 ppm</td>
<td>Rat</td>
<td>GESTIS</td>
</tr>
<tr>
<td>5989-27-5</td>
<td>(R)-p-mentha-1,8-diene, d-limonene</td>
<td>Oral</td>
<td>LD50 &gt; 2000 mg/kg</td>
<td>Rat</td>
<td>Study report (2010)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal</td>
<td>LD50 &gt; 2000 mg/kg</td>
<td>Rat</td>
<td>IUCLID</td>
</tr>
<tr>
<td>68584-23-6</td>
<td>Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts</td>
<td>Oral</td>
<td>LD50 &gt;5000 mg/kg</td>
<td>Rat</td>
<td>Study report (1989)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal</td>
<td>LD50 &gt;5000 mg/kg</td>
<td>Rat</td>
<td>Study report (1989)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation (4 h) aerosol</td>
<td>LC50 &gt;5 mg/l</td>
<td>Rat</td>
<td>Study report (1989)</td>
</tr>
<tr>
<td>70024-69-0</td>
<td>Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts</td>
<td>Oral</td>
<td>LD50 &gt;16000 mg/kg</td>
<td>Rat</td>
<td>Study report (1981)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal</td>
<td>LD50 &gt;4000 mg/kg</td>
<td>Rabbit</td>
<td>Study report (1986)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation (4 h) aerosol</td>
<td>LC50 &gt;5 mg/l</td>
<td>Rat</td>
<td>Study report (1986)</td>
</tr>
<tr>
<td>1471316-72-9</td>
<td>Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts</td>
<td>Oral</td>
<td>LD50 &gt; 10000 - &lt; 20000 mg/kg</td>
<td>Rat</td>
<td>Study report (1972)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal</td>
<td>LD50 &gt; 2000 mg/kg</td>
<td>Rat</td>
<td>Study report (1989)</td>
</tr>
</tbody>
</table>

### Irritation and corrossivity

Causes skin irritation.
Serious eye damage/eye 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; Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts; Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts)

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

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

#### isobutane (CAS No: 75-28-5)
- **Acute fish toxicity**
  - LC50: 91,42 mg/l
  - 96 h
  - Fish, no other information
  - Source: United States Environmental Protection A

- **Acute algae toxicity**
  - ErC50: 19,37 mg/l
  - 96 h
  - Algae
  - Source: USEPA OPPT Risk Assessment Division 200

- **Acute crustacea toxicity**
  - EC50: 69,43 mg/l
  - 48 h
  - Daphnia sp.
  - Source: USEPA OPPT Risk Assessment Division 200

#### Hydrocarbons, C6-C7, n-alkanes, isoalkanes cyclic, < 5% n-hexane (CAS No: 92128-66-0)
- **Acute fish toxicity**
  - LC50: >1 - 10 mg/l
  - 96 h
  - Pimephales promelas

- **Acute algae toxicity**
  - ErC50: 10 - 30 mg/l
  - 72 h
  - Pseudokirchneriella subcapitata
  - Source: Study report (1995)

- **Acute crustacea toxicity**
  - EC50: >1 - 10 mg/l
  - 48 h
  - Daphnia magna

#### Propane (CAS No: 74-98-6)
- **Acute fish toxicity**
  - LC50: 49,9 mg/l
  - 96 h
  - Fish, no other information
  - Source: United States Environmental Protection A

- **Acute algae toxicity**
  - ErC50: 19,37 mg/l
  - 96 h
  - Algae
  - Source: USEPA OPPT Risk Assessment Division 200

- **Acute crustacea toxicity**
  - EC50: >1 - 10 mg/l
  - 48 h
  - Daphnia magna

#### Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics (CAS No: 64742-49-0)
- **Acute fish toxicity**
  - LC50: >1 - 10 mg/l
  - 96 h
  - Oncorhynchus mykiss (Rainbow trout)

- **Acute algae toxicity**
  - ErC50: 12 mg/l
  - 72 h
  - Pseudokirchneriella subcapitata
  - Source: SIDS Initial Assessment Report For SIAM

- **Acute crustacea toxicity**
  - EC50: >1 - 10 mg/l
  - 48 h
  - Daphnia magna

#### Butane (CAS No: 106-97-8)
- **Acute fish toxicity**
  - LC50: 49,9 mg/l
  - 96 h
  - Fish, no other information
  - Source: United States Environmental Protection A

- **Acute algae toxicity**
  - ErC50: 19,37 mg/l
  - 96 h
  - Algae
  - Source: USEPA OPPT Risk Assessment Division 200
# Safety Data Sheet

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## 112 Brake spray MP11200400AB

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Method</th>
<th>Value</th>
<th>d</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbons, C6-C7, n-alkanes, isoalkanes cyclic, &lt; 5% n-hexane</td>
<td>OECD Guideline 301 F</td>
<td>98%</td>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

The product has not been tested.

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>92128-66-0</td>
<td>Hydrocarbons, C6-C7, n-alkanes, isoalkanes cyclic, &lt; 5% n-hexane</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

The product has not been tested.
### 112 Brake spray MP11200400AB

#### Partition coefficient n-octanol/water

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-28-5</td>
<td>isobutane</td>
<td>1,09</td>
</tr>
<tr>
<td>92128-66-0</td>
<td>Hydrocarbons, C6-C7, n-alkanes, isoalkanes cyclic, &lt; 5% n-hexane</td>
<td>3.4 - 5.2</td>
</tr>
<tr>
<td>74-98-8</td>
<td>propane</td>
<td>1,09</td>
</tr>
<tr>
<td>106-97-8</td>
<td>butane</td>
<td>1,09</td>
</tr>
<tr>
<td>5989-27-5</td>
<td>(R)-p-mentha-1,8-diene, d-limonene</td>
<td>4.38</td>
</tr>
<tr>
<td>70024-69-0</td>
<td>Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts</td>
<td>18.05</td>
</tr>
<tr>
<td>1471316-72-9</td>
<td>Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts</td>
<td>&gt; 6,91</td>
</tr>
</tbody>
</table>

#### BCF

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>BCF</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>5989-27-5</td>
<td>(R)-p-mentha-1,8-diene, d-limonene</td>
<td>908,5</td>
<td>Other company data (</td>
<td></td>
</tr>
<tr>
<td>1471316-72-9</td>
<td>Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts</td>
<td>70,8</td>
<td>Fish, not further specified.</td>
<td>Study report (2013)</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. Do not allow to enter into soil/subsoil. 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

**Contaminated packaging**

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

### SECTION 14: Transport information

#### 14.1. UN number

<table>
<thead>
<tr>
<th>UN number</th>
<th>GB - EN</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 1950</td>
<td></td>
</tr>
</tbody>
</table>
### 14.2. UN proper shipping name
- AEROSOLS

### 14.3. Transport hazard class(es)
- 2

### 14.4. Packing group
- 2.1

- 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
- 2.1

- 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

### 14.3. Transport hazard class(es)
- 2.1

### 14.4. Packing group
- 2.1

- Hazard label: 2.1
- Marine pollutant: no
- 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
- 2.1

- 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: no
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: isobutane; Hydrocarbons, C6-C7, n-alkanes, isoalkanes cyclic, < 5% n-hexane; Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics; butane

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
Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).
Water contaminating class (D): 2 - clearly water contaminating

SECTION 16: Other information

Changes
This data sheet contains changes from the previous version in section(s): 3.

Abbreviations and acronyms
ADR: Accord européen sur le transport des marchandises dangereuses par Route
(Official Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
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
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

Relevant H and EUH statements (number and full text)

H220 Extremely flammable gas.
H222 Extremely flammable aerosol.
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H229 Pressurised container: May burst if heated.
H280 Contains gas under pressure; may explode if heated.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye 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.

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.)