## Safety Boots 5l

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

### 1.1. Product identifier

**Trade name/designation:**

Safety Boots 5l

**Article No.:**
T902011

**UFI:**
NK2A-VVVG-33PQ-187V

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

**Use of the substance/mixture:**
Cleaner for air conditioners

### 1.3. Details of the supplier of the safety data sheet

**Supplier:**


**KANDO Service GmbH**
Hartleitnerstraße 3
4653 Eberstalzell
Austria
**Telephone:** +43 (0) 7241 213 79
**E-mail:** msds@kando.eu


### 1.4. Emergency telephone number

Vergiftungsinformationszentrale (VIZ), Stubenring 6, 1010 Wien, 24h: 01 406 43 43, Montag - Freitag: 8 bis 16 Uhr, Tel.: 01 406 68 98 (keine medizinische Auskunft) (Only available during office hours.)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

| Hazard classes and hazard categories | Hazard statements | Classification procedure |
|---|---|---|
| flammable liquids *(Flam. Liq. 2)* | H225: Highly flammable liquid and vapour. | |
| Skin corrosion/irritation *(Skin Irrit. 2)* | H315: Causes skin irritation. | |
| Respiratory or skin sensitisation *(Skin Sens. 1)* | H317: May cause an allergic skin reaction. | |
| Serious eye damage/eye irritation *(Eye Irrit. 2)* | H319: Causes serious eye irritation. | |
| STOT-single exposure *(STOT SE 3)* | H336: May cause drowsiness or dizziness. | |
| Hazardous to the aquatic environment *(Aquatic Chronic 2)* | H411: Toxic to aquatic life with long lasting effects. | |

### 2.2. Label elements

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

**Hazard pictograms:**

**GHS02**
Flame

**GHS07**
Exclamation mark

**GHS09**
Environment

**Signal word:** Danger

**Hazard components for labelling:**
(R)-P-menthadiene-1,8; propan-2-ol; acetone; citral; (S)-p-mentha-1,8-diene; Cubeb root (Litsea cubeba) fruit oil; Rectified Hydrocarbons by- products from synthetic process of Turpentine and acid, alcohols fraction; Orange, süß, Extrakt

| **Hazard statements for physical hazards** | |
|---|---|
| H225 | Highly flammable liquid and vapour. |

| **Hazard statements for health hazards** | |
|---|---|
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness. |

| **Hazard statements for environmental hazards** | |
|---|---|
| H411 | Toxic to aquatic life with long lasting effects. |

| **Supplemental hazard information** | |
|---|---|
| EUH066 | Repeated exposure may cause skin dryness or cracking. |

| **Precautionary statements Prevention** | |
|---|---|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/protective clothing and eye protection/face protection. |

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

### 2.3. Other hazards

**Other adverse effects:**
Based on the available information, the product does not contain any PBT or vPvB substances in content percentages ≥ 0.1%.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

**Hazardous ingredients / Hazardous impurities / Stabilisers:**

| Product identifiers | Substance name<br>Classification according to Regulation (EC) No 1272/2008 [CLP] | Concentration |
|---|---|---|
| CAS No.: 67-63-0<br>EC No.: 200-661-7<br>Index No.: 603-117-00-0<br>REACH No.:<br>01-2119457558-25 | **propan-2-ol**<br>Eye Irrit. 2 (H319), Flam. Liq. 2 (H225), STOT SE 3 (H336)<br>  Danger | 85 – ≤ 90<br>Vol-% |
| CAS No.: 67-64-1<br>EC No.: 200-662-2<br>Index No.: 606-001-00-8<br>REACH No.:<br>01-2119471330-49 | **acetone**<br>Eye Irrit. 2 (H319), Flam. Liq. 2 (H225), STOT SE 3 (H336)<br>  Danger | 8.5 – ≤ 10<br>Vol-% |
| CAS No.: 7173-51-5<br>EC No.: 230-525-2<br>Index No.: 612-131-00-6<br>REACH No.:<br>01-2119945987-15 | **didecyldimethylammonium chloride**<br>Acute Tox. 3 (H301), Aquatic Acute 1 (H400), Aquatic Chronic 2 (H411), Eye Dam. 1 (H318), Skin Corr. 1B (H314)<br>  Danger<br>M-factor (acute): 10 | 1 – ≤ 1.5<br>Vol-% |
| CAS No.: 5989-27-5<br>EC No.: 227-813-5<br>Index No.: 601-029-00-7<br>REACH No.:<br>01-2119529223-47 | **(R)-P-menthadiene-1,8**<br>Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410), Asp. Tox. 1 (H304), Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1 (H317)<br>  Danger<br>M-factor (acute): 1 M-factor (chronic): 1 | 1 – ≤ 1.5<br>Vol-% |
| EC No.: 949-141-8<br>REACH No.:<br>01-2120789752-39 | **Rectified Hydrocarbons by- products from synthetic process of Turpentine and acid, alcohols fraction**<br>Asp. Tox. 1 (H304), Eye Irrit. 2 (H319), Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1 (H317)<br>  Danger | 0.8 – ≤ 0.9<br>Vol-% |
| CAS No.: 8028-48-6<br>EC No.: 232-433-8<br>REACH No.:<br>01-2119493353-35 | **Orange, süß, Extrakt**<br>Aquatic Chronic 1 (H410), Asp. Tox. 1 (H304), Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1 (H317)<br>  Danger<br>M-factor (chronic): 1 | 0.8 – ≤ 0.9<br>Vol-% |
| CAS No.: 5989-54-8<br>EC No.: 227-815-6<br>Index No.: 601-029-00-7<br>REACH No.:<br>01-2119958629-18 | **(S)-p-mentha-1,8-diene**<br>Aquatic Chronic 1 (H410), Asp. Tox. 1 (H304), Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1 (H317)<br>  Danger<br>M-factor (chronic): 1 | 0.354 – ≤ 0.404<br>Vol-% |
| CAS No.: 68855-99-2<br>EC No.: 290-018-7<br>REACH No.:<br>01-2120118332-70 | **Cubeb root (Litsea cubeba) fruit oil**<br>Aquatic Chronic 2 (H411), Eye Irrit. 2 (H319), Skin Irrit. 2 (H315), Skin Sens. 1 (H317)<br>  Warning | 0.354 – ≤ 0.404<br>Vol-% |
| CAS No.: 5392-40-5<br>EC No.: 226-394-6<br>Index No.: 605-019-00-3<br>REACH No.:<br>01-2119462829-23 | **citral**<br>Eye Irrit. 2 (H319), Skin Irrit. 2 (H315), Skin Sens. 1 (H317)<br>  Warning | 0.35 – ≤ 0.4<br>Vol-% |

*Full text of H- and EUH-phrases: see section 16.*

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

**Following inhalation:**

A doctor must be consulted immediately. The person concerned shall be carried outside, away from the scene of the accident. If breathing stops, artificial respiration shall be given. The appropriate measures for the rescuer are to be taken.

**In case of skin contact:**
Soiled, soaked clothing must be taken off. One must take a shower immediately. A doctor must be consulted immediately.

**After eye contact:**
Any contact lenses must be removed. One must immediately and extensively wash with water for at least 30 / 60 minutes, opening the eyelids well. A doctor must be consulted immediately.

**Following ingestion:**
The largest possible amount of water must be administered. Vomiting must not be induced unless specifically ordered by the doctor.

### 4.2. Most important symptoms and effects, both acute and delayed
There is no known specific information on symptoms and effects caused by this product.

### 4.3. Indication of any immediate medical attention and special treatment needed
Data not available.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media
**Suitable extinguishing media:**
Carbon dioxide, Foam, Extinguishing powder, Water mist
In the case of non-flammable product leaks or spills, water spray may be used to disperse flammable vapours and protect persons encountering the spill.

**Unsuitable extinguishing media:**
Water jets must not be used. Water is not effective for extinguishing fires, but can be used to cool closed containers exposed to flames to prevent explosions.

### 5.2. Special hazards arising from the substance or mixture
There may be a risk of explosion in containers exposed to fire. Avoid inhalation of combustion products.

### 5.3. Advice for firefighters
General information
The containers shall be cooled with water jets to prevent the decomposition of the product and the formation of potentially harmful substances. Complete fire protective clothing must be worn at all times.

Personal protection equipment:
Normal firefighting clothing, e.g. an open-circuit compressed air respirator (EN 137) firefighting kit (EN469), firefighting gloves (EN 659) and firefighting boots (HO A 29 or A30)

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures
### 6.1.1. For non-emergency personnel
**Personal precautions:**
The leakage may be blocked if there is no danger. Appropriate protective devices (including personal protective devices as per para. 8 from the safety instructions) shall be put on to prevent contamination of skin, eyes and personal clothing. These instructions apply to both reprocessing supervisors and emergency stop interventions.
Remove persons without protective clothing from the site. Use an explosion-proof device. Any source of ignition (cigarettes, flames, sparks, etc.) or heat must be discarded from the area where the product has leaked.

### 6.1.2. For emergency responders
No data available

### 6.2. Environmental precautions
Prevent the product from entering waste water, surface water, ground water.

### 6.3. Methods and material for containment and cleaning up
**For cleaning up:**
The spilled product must be sucked into a suitable container. The container to be used shall be tested for compatibility with the product, subject to section 10. The residual product shall be absorbed with inert

absorbent material. Adequate ventilation of the affected area shall be provided. Contaminated material must be disposed of in accordance with the regulations in section 13. Provide adequate ventilation.

### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Protective measures

**Advices on safe handling:**

Do not handle the product until you have read all other sections of this safety sheet. Avoid dispersal of the product in the environment. Do not eat, drink or smoke while using the product. Before entering the eating area, remove wetted clothing and protective devices.

**Fire prevent measures:**

Keep away from heat, sparks and free flame, refrain from smoking and use of matches or lighters. Without the necessary ventilation, vapours may accumulate in the lower layers near the floor and may also ignite remotely with the risk of flashback. Accumulation of electrostatic charges must be avoided. In the case of large-format packaging, connect to an earthing socket during decanting and put on antistatic shoes. Vigorous shaking and rapid flow of the liquid in pipelines and equipment may lead to the formation and accumulation of electrostatic charges. To avoid a risk of fire and explosion, never use compressed air when handling. The containers must be opened carefully as they may be under pressure.

### 7.2. Conditions for safe storage, including any incompatibilities

**Requirements for storage rooms and vessels:**

Keep only in the original container in a cool, well-ventilated place.

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

**Further information on storage conditions:**

Direct sunlight, heat, open flames, sparks, hot surfaces, sources of ignition

### 7.3. Specific end use(s)

**Recommendation:**

Data not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1. Occupational exposure limit values

| Limit value type (country of origin) | Substance name | ① Long-term occupational exposure limit value<br>② Short-term occupational exposure limit value<br>③ Instantaneous value<br>④ Monitoring and observation processes<br>⑤ Remark |
|---|---|---|
| MAK (AT) | **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | ② 800 ppm (2,000 mg/m³)<br>⑤ (max. 4x15 min./Schicht) |
| MAK (AT) | **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | ① 200 ppm (500 mg/m³) |
| MAK (AT) | **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | ② 2,000 ppm (4,800 mg/m³)<br>⑤ (max. 4x15 min./Schicht) |
| IOELV (EU) | **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | ① 500 ppm (1,210 mg/m³) |
| MAK (AT) | **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | ① 500 ppm (1,200 mg/m³) |

### 8.1.2. Biological limit values

No data available

### 8.1.3. DNEL-/PNEC-values

| Substance name | DNEL value | ① DNEL type<br>② Exposure route |
|---|---|---|
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 500 mg/m³ | ① DNEL worker<br>② Long-term – inhalation, systemic effects |
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 89 mg/m³ | ① DNEL Consumer<br>② Long-term – inhalation, systemic effects |
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 888 mg/kg bw/day | ① DNEL worker<br>② Long-term - dermal, systemic effects |
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 319 mg/kg bw/day | ① DNEL Consumer<br>② Long-term - dermal, systemic effects |
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 26 mg/kg bw/day | ① DNEL Consumer<br>② Long-term - oral, systemic effects |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 1,210 mg/m³ | ① DNEL worker<br>② Long-term – inhalation, systemic effects |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 200 mg/m³ | ① DNEL Consumer<br>② Long-term – inhalation, systemic effects |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 2,420 mg/m³ | ① DNEL worker<br>② Acute - inhalation, local effects |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 186 mg/kg bw/day | ① DNEL worker<br>② Long-term - dermal, systemic effects |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 62 mg/kg bw/day | ① DNEL Consumer<br>② Long-term - dermal, systemic effects |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 62 mg/kg bw/day | ① DNEL Consumer<br>② Long-term - oral, systemic effects |
| **(R)-P-menthadiene-1,8**<br>CAS No.: 5989-27-5<br>EC No.: 227-813-5 | 33.3 mg/m³ | ① DNEL worker<br>② Long-term – inhalation, systemic effects |
| **(R)-P-menthadiene-1,8**<br>CAS No.: 5989-27-5<br>EC No.: 227-813-5 | 8.33 mg/m³ | ① DNEL Consumer<br>② Long-term – inhalation, systemic effects |
| **(R)-P-menthadiene-1,8**<br>CAS No.: 5989-27-5<br>EC No.: 227-813-5 | 4.76 mg/kg bw/day | ① DNEL Consumer<br>② Long-term - oral, systemic effects |

| Substance name | PNEC Value | ① PNEC type |
|---|---|---|
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 140.9 mg/L | ① PNEC aquatic, freshwater |
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 140.9 mg/L | ① PNEC aquatic, marine water |
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 2,251 mg/L | ① PNEC sewage treatment plant |

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| Substance name | PNEC Value | ① PNEC type |
|---|---|---|
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 552 mg/kg | ① PNEC sediment, freshwater |
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 552 mg/kg | ① PNEC sediment, marine water |
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 28 mg/kg | ① PNEC soil |
| **propan-2-ol**<br>CAS No.: 67-63-0<br>EC No.: 200-661-7 | 140.9 mg/L | ① PNEC aquatic, intermittent release |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 10.6 mg/L | ① PNEC aquatic, freshwater |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 1.06 mg/L | ① PNEC aquatic, marine water |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 100 mg/L | ① PNEC sewage treatment plant |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 30.4 mg/kg | ① PNEC sediment, freshwater |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 3.04 mg/kg | ① PNEC sediment, marine water |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 29.5 mg/kg | ① PNEC soil |
| **acetone**<br>CAS No.: 67-64-1<br>EC No.: 200-662-2 | 21 mg/L | ① PNEC aquatic, intermittent release |
| **didecyldimethylammonium chloride**<br>CAS No.: 7173-51-5<br>EC No.: 230-525-2 | 0.0011 mg/L | ① PNEC aquatic, freshwater |
| **didecyldimethylammonium chloride**<br>CAS No.: 7173-51-5<br>EC No.: 230-525-2 | 0.00011 mg/L | ① PNEC aquatic, marine water |
| **didecyldimethylammonium chloride**<br>CAS No.: 7173-51-5<br>EC No.: 230-525-2 | 0.14 mg/L | ① PNEC sewage treatment plant |
| **didecyldimethylammonium chloride**<br>CAS No.: 7173-51-5<br>EC No.: 230-525-2 | 61.86 mg/kg | ① PNEC sediment, freshwater |
| **didecyldimethylammonium chloride**<br>CAS No.: 7173-51-5<br>EC No.: 230-525-2 | 6.186 mg/kg | ① PNEC sediment, marine water |
| **didecyldimethylammonium chloride**<br>CAS No.: 7173-51-5<br>EC No.: 230-525-2 | 1.4 mg/kg | ① PNEC soil |
| **(R)-P-menthadiene-1,8**<br>CAS No.: 5989-27-5<br>EC No.: 227-813-5 | 0.0054 mg/L | ① PNEC aquatic, freshwater |
| **(R)-P-menthadiene-1,8**<br>CAS No.: 5989-27-5<br>EC No.: 227-813-5 | 0.00054 mg/L | ① PNEC aquatic, marine water |
| **(R)-P-menthadiene-1,8**<br>CAS No.: 5989-27-5<br>EC No.: 227-813-5 | 1.8 mg/L | ① PNEC sewage treatment plant |

| Substance name | PNEC Value | ① PNEC type |
|---|---|---|
| **(R)-P-menthadiene-1,8**<br>CAS No.: 5989-27-5<br>EC No.: 227-813-5 | 1.32 mg/kg | ① PNEC sediment, freshwater |
| **(R)-P-menthadiene-1,8**<br>CAS No.: 5989-27-5<br>EC No.: 227-813-5 | 0.13 mg/kg | ① PNEC sediment, marine water |
| **(R)-P-menthadiene-1,8**<br>CAS No.: 5989-27-5<br>EC No.: 227-813-5 | 3.33 mg/m³ | ① PNEC air |
| **(R)-P-menthadiene-1,8**<br>CAS No.: 5989-27-5<br>EC No.: 227-813-5 | 0.262 mg/kg | ① PNEC soil |

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

Considering that appropriate protective measures should always take precedence over personal protective clothing, ensure that the workplace is well ventilated by effective local exhaust ventilation. For the selection of personal protective equipment, the trusted chemical manufacturers may need to be consulted. The personal protective equipment must be CE marked to indicate its suitability for the applicable regulations.
Emergency stop showers with face-eye-rinsing are to be provided.

#### 8.2.2. Personal protection equipment

**Eye/face protection:**

The use of penetration-proof goggles is recommended (ref. standard EN 166).

**Skin protection:**

Hand protection:
The hands must be protected with category III work gloves (ref. standard EN 374). For the final choice of material for the work gloves, the following aspects must be included: Compatibility, degradation, breaking time and permeability. In the case of preparations, the work glove resistance to chemical agents must be tested before use, as it is unpredictable. Glove wear time is conditioned by exposure time and modes of use.

Skin protection:
Work clothing with long sleeves and category II accident protection shoes must be worn (see Regulation 2016/425 and standard EN ISO 20344). After taking off the protective clothing, one must wash with soap and water.
If the work environment presents a risk of explosion, consider providing antistatic garments.

**Respiratory protection:**

If the threshold value (e.g. TLV-TWA) of the substance or one or more substances contained in the product is exceeded, it is recommended to wear a mask with filter type AX in combination with a filter type P (ref. standard EN 14387).
In the presence of gases or vapours of a different nature and/or gases or vapours containing particles (aerosol, smoke, mist, etc.), combined filters must be provided. If the technical measures taken are not sufficient to reduce the exposure of the worker to the threshold values considered, the use of respiratory protection devices is necessary. The protection provided by the mask is in any case limited. If the substance under consideration is odourless or its odour threshold exceeds the corresponding TLV-TWA, or in case of emergency, an open-circuit self-operated compressed air respirator (ref. standard EN137) or an external air intake respirator (ref. standard EN138) must be worn. For the correct selection of the respiratory protective device, refer to standard EN 529.

#### 8.2.3. Environmental exposure controls

Emissions from manufacturing processes, including those from ventilation equipment, should be checked for compliance with environmental legislation. Do not allow to enter into surface water or drains.

## SECTION 9: Physical and chemical properties

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

**Appearance**

**Physical state:** Liquid

**Colour:** colourless

**Odour:** characteristic

**Safety relevant basis data**

| Parameter | Value | at °C | ① Method<br>② Remark |
|---|---|---|---|
| pH | *No data available* | | |
| Melting point | *No data available* | | |
| Freezing point | *No data available* | | |
| Initial boiling point and boiling range | > 35 °C | | |
| Flash point | < 23 °C | | |
| Evaporation rate | *No data available* | | |
| Auto-ignition temperature | *No data available* | | |
| Upper/lower flammability or explosive limits | 2.1 – 13 Vol-% | | |
| Vapour pressure | *No data available* | | |
| Vapour density | *No data available* | | |
| Density | 0.79 kg/L | | |
| Bulk density | *not applicable* | | |
| Water solubility | miscible | 20 °C | |
| Dynamic viscosity | *No data available* | | |
| Kinematic viscosity | *No data available* | | |

**particle characteristics:**
not applicable

### 9.2. Other information

#### 9.2.2. Other safety characteristics

VOC (Directive 2010/75/EU): 98,90% - 598,35 g/l
VOC (volatile carbon): 65,48% - 396,14 g/l

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No special reaction hazards with other substances under normal conditions of use.
Acetone: Decomposes under the influence of heat.

### 10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.
(R)-p-mentha-1,8-diene: Chemically stable under conditions of storage, handling and use.

### 10.3. Possibility of hazardous reactions

Under normal conditions of use and storage, no hazardous reactions are foreseen.
Acetone: Explosion hazard in contact with: Bromine trifluoride, disoxygen difluoride, hydrogen peroxide, nitrosyl chloride, 2-methylbuta-1,3-diene, nitromethane, nitrosyl perchlorate.May react dangerously with: Potassium tert-butanolate, alkaline hydroxides, bromine, bromoform, isoprene, sodium, sulphur dioxide, chromium trioxide, chromium (VI) oxide dichloride, nitric acid, chloroform, peroxomonosulphuric acid, phosphorus oxychloride, chromosulphuric acid, fluorine, strong oxidising agents, strong reducing agents. Develops flammable gases on contact with: Nitrosylperchlorat
(R)-p-mentha-1,8-diene: May react dangerously with: Strong oxidising agents, mineral acids.

### 10.4. Conditions to avoid

Avoid heating. Accumulation of electrostatic charges must be avoided. Remove all sources of ignition.
(R)-p-mentha-1,8-diene: Avoid exposure to: Heat, open flames, electrostatic discharges.

### 10.5. Incompatible materials
Acetone: Incompatible with: Acids, Oxidising substances
(R)-p-mentha-1,8-diene: Incompatible with: Strong acid,Oxidizing agent

### 10.6. Hazardous decomposition products
Vapours potentially hazardous to health may be formed by thermal decomposition or in case of fire.
Acetone: Can develop: Ketene, irritants
(R)-p-mentha-1,8-diene: Developed during decay: Carbon dioxide, Nitric oxide

## SECTION 11: Toxicological information

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

**Toxicological information**

| |
|---|
| **Acute Toxicity Estimate for Mixtures** |
| **ATE (oral):** >2,000 mg/kg |
| **propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7 |
| **$LD_{50}$ oral:** >2,000 mg/kg (Rat) |
| **$LD_{50}$ dermal:** >2,000 mg/kg (Rat) |
| **$LC_{50}$ Acute inhalation toxicity (gas):** >25 ppmV (Rat) |
| **$LC_{50}$ Acute inhalation toxicity (vapour):** >20 mg/L (Rat) |
| **acetone** CAS No.: 67-64-1 EC No.: 200-662-2 |
| **ATE (oral):** 5,800 mg/kg |
| **ATE (dermal):** 20,000 mg/kg |
| **ATE (inhalation, dust/mist):** 76 mg/L |
| **$LD_{50}$ oral:** 5,800 mg/kg (Rat) |
| **$LD_{50}$ dermal:** >7,800 mg/kg (Rabbit) |
| **$LC_{50}$ Acute inhalation toxicity (dust/mist):** 76 mg/L 4 h (Rat) |
| **didecyldimethylammonium chloride** CAS No.: 7173-51-5 EC No.: 230-525-2 |
| **$LD_{50}$ dermal:** 3,342 mg/kg (Rabbit) |
| **(R)-P-menthadiene-1,8** CAS No.: 5989-27-5 EC No.: 227-813-5 |
| **$LD_{50}$ oral:** >2,000 mg/kg (Rat) |
| **$LD_{50}$ dermal:** >5,000 mg/kg (Rat) |
| **Rectified Hydrocarbons by- products from synthetic process of Turpentine and acid, alcohols fraction** EC No.: 949-141-8 |
| **$LD_{50}$ oral:** 3,200 mg/kg (Rat) |
| **$LD_{50}$ dermal:** 5,000 mg/kg (Rabbit) |
| **Orange, süß, Extrakt** CAS No.: 8028-48-6 EC No.: 232-433-8 |
| **$LD_{50}$ oral:** 200 mg/kg (Rat) |
| **$LD_{50}$ dermal:** 500 mg/kg (Rat) |
| **(S)-p-mentha-1,8-diene** CAS No.: 5989-54-8 EC No.: 227-815-6 |
| **$LD_{50}$ oral:** >2,000 mg/kg |
| **$LD_{50}$ dermal:** >2,000 mg/kg |
| **citral** CAS No.: 5392-40-5 EC No.: 226-394-6 |
| **$LD_{50}$ oral:** 4,960 mg/kg (Rat) |
| **$LD_{50}$ dermal:** 2,250 mg/kg (Rabbit) |

**Acute dermal toxicity:**
Not classified (No relevant ingredient)

**Acute inhalation toxicity:**
Not classified (No relevant ingredient)

**Skin corrosion/irritation:**
Causes skin irritation.

**Serious eye damage/irritation:**
Causes serious eye irritation.

**Respiratory or skin sensitisation:**
Sensitising to the skin.

**Germ cell mutagenicity:**
Does not fall under the classification criteria of this hazard class

**Carcinogenicity:**
Does not fall under the classification criteria of this hazard class

**Reproductive toxicity:**
Does not fall under the classification criteria of this hazard class

**STOT-single exposure:**
May cause drowsiness or dizziness.

**STOT-repeated exposure:**
Does not fall under the classification criteria of this hazard class

**Aspiration hazard:**
Does not fall under the classification criteria of this hazard class

### 11.2. Information on other hazards

**Endocrine disrupting properties:**
According to the available data, the product does not contain any substances included in the main European lists of potential or suspected endocrine disruptors with effects on human health to be assessed.

## SECTION 12: Ecological information

### 12.1. Toxicity

| |
|---|
| **propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7 |
| **$LC_{50}$:** 9,640 mg/L 4 d (fish, Pimephales promelas) |
| **$LC_{50}$:** >1,000 mg/L 4 d (fish) |
| **$EC_{50}$:** >100 mg/L (Algae/water plant) |
| **$EC_{50}$:** >100 mg/L 2 d (crustaceans, Daphnia magna) |
| **$EC_{50}$:** >1,000 mg/L 2 d (crustaceans) |
| **$ErC_{50}$:** >100 mg/L 3 d (Algae/water plant, Desmodesmus subspicatus) |
| **LOEC:** 1,000 mg/L (Algae/water plant, Algae) |
| **$LC_{50}$:** 8,970 mg/L 2 d (fish, Leuciscus idus (golden orfe)) |
| **acetone** CAS No.: 67-64-1 EC No.: 200-662-2 |
| **$LC_{50}$:** 8,300 mg/L 4 d (fish) |
| **$LC_{50}$:** 8,450 mg/L 2 d (crustaceans) |
| **$EC_{50}$:** 7,200 mg/L 4 d (Algae/water plant) |
| **didecyldimethylammonium chloride** CAS No.: 7173-51-5 EC No.: 230-525-2 |
| **$LC_{50}$:** 0.19 mg/L 4 d (fish, Pimephales promelas) |
| **$EC_{50}$:** 0.062 mg/L 2 d (crustaceans, Daphnia) |
| **NOEC:** 0.01 mg/L (crustaceans, Daphnia magna) |
| **NOEC:** 0.032 mg/L (fish, Danio rerio) |
| **(R)-P-menthadiene-1,8** CAS No.: 5989-27-5 EC No.: 227-813-5 |
| **$LC_{50}$:** 0.702 mg/L 4 d (fish, Pimephales promelas) |
| **$EC_{50}$:** 0.577 mg/L 2 d (crustaceans, Daphnia magna) |
| **citral** CAS No.: 5392-40-5 EC No.: 226-394-6 |
| **$LC_{50}$:** 6.78 mg/L 4 d (fish, Leuciscus idus) |
| **$EC_{50}$:** 6.8 mg/L 2 d (crustaceans, Daphnia magna) |
| **$EC_{50}$:** 103.8 mg/L 3 d (Algae/water plant, Desmodesmus subspicatus) |

**Assessment/classification:**
No further relevant information available.

**Additional ecotoxicological information:**
Use in accordance with good working practices and ensure that the product does not enter the environment. Notify the relevant authorities if the product has entered water courses or if the product has contaminated the soil or vegetation.

### 12.2. Persistence and degradability

| |
|---|
| **propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7 |
| **Biodegradation:** Yes, rapidly |
| **Remark:** Readily biodegradable (according to OECD criteria). |
| **acetone** CAS No.: 67-64-1 EC No.: 200-662-2 |
| **Biodegradation:** Yes, rapidly |
| **didecyldimethylammonium chloride** CAS No.: 7173-51-5 EC No.: 230-525-2 |
| **Biodegradation:** Yes, rapidly |
| **(R)-P-menthadiene-1,8** CAS No.: 5989-27-5 EC No.: 227-813-5 |
| **Biodegradation:** Yes, rapidly |
| **citral** CAS No.: 5392-40-5 EC No.: 226-394-6 |
| **Biodegradation:** Yes, rapidly |

### 12.3. Bioaccumulative potential

| |
|---|
| **propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7 |
| **Log $K_{OW}$:** 0.05 |
| **acetone** CAS No.: 67-64-1 EC No.: 200-662-2 |
| **Log $K_{OW}$:** -0.24 |
| **didecyldimethylammonium chloride** CAS No.: 7173-51-5 EC No.: 230-525-2 |
| **Bioconcentration factor (BCF):** 81 |
| **(R)-P-menthadiene-1,8** CAS No.: 5989-27-5 EC No.: 227-813-5 |
| **Log $K_{OW}$:** 4.83 |
| **Bioconcentration factor (BCF):** 660 |
| **citral** CAS No.: 5392-40-5 EC No.: 226-394-6 |
| **Bioconcentration factor (BCF):** 89.72 |

### 12.4. Mobility in soil
Classification factor: soil / water 17

### 12.5. Results of PBT and vPvB assessment

| |
|---|
| **propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7 |
| **Results of PBT and vPvB assessment:** — |
| **acetone** CAS No.: 67-64-1 EC No.: 200-662-2 |
| **Results of PBT and vPvB assessment:** — |
| **didecyldimethylammonium chloride** CAS No.: 7173-51-5 EC No.: 230-525-2 |
| **Results of PBT and vPvB assessment:** — |
| **(R)-P-menthadiene-1,8** CAS No.: 5989-27-5 EC No.: 227-813-5 |
| **Results of PBT and vPvB assessment:** — |
| **Rectified Hydrocarbons by- products from synthetic process of Turpentine and acid, alcohols fraction** EC No.: 949-141-8 |
| **Results of PBT and vPvB assessment:** — |
| **Orange, süß, Extrakt** CAS No.: 8028-48-6 EC No.: 232-433-8 |
| **Results of PBT and vPvB assessment:** — |
| **(S)-p-mentha-1,8-diene** CAS No.: 5989-54-8 EC No.: 227-815-6 |
| **Results of PBT and vPvB assessment:** — |
| **Cubeb root (Litsea cubeba) fruit oil** CAS No.: 68855-99-2 EC No.: 290-018-7 |
| **Results of PBT and vPvB assessment:** — |

| **citral** CAS No.: 5392-40-5 EC No.: 226-394-6 |
|---|
| **Results of PBT and vPvB assessment:** — |

Based on the available information, the product does not contain any PBT or vPvB substances in content percentages ≥ 0.1%.

### 12.6. Endocrine disrupting properties
According to the available data, the product does not contain any substances included in the main European lists of potential or suspected endocrine disruptors with effects on human health to be assessed.

### 12.7. Other adverse effects
Data not available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods
Reuse if possible. Product residues are to be considered as hazardous waste. The hazardousness of the waste partially containing this product must be evaluated on the basis of the legal provisions in force. Disposal must be entrusted to a company authorised for waste management, taking into account national and, where applicable, local regulations.
The transport of the waste may be subject to ADR.

### Waste treatment options
**Appropriate disposal / Package:**
Contaminated packaging material must be sent for recycling or disposal in accordance with the country's waste management regulations.

## SECTION 14: Transport information

| Land transport (ADR/RID) | Inland waterway craft (ADN) | Sea transport (IMDG) | Air transport (ICAO-TI / IATA-DGR) |
|---|---|---|---|
| **14.1. UN number or ID number** | | | |
| UN 1993 | UN 1993 | UN 1993 | UN 1993 |
| **14.2. UN proper shipping name** | | | |
| FLAMMABLE LIQUID, N.O.S. (propan-2-ol, Acetone) | FLAMMABLE LIQUID, N.O.S. (propan-2-ol, Acetone) | FLAMMABLE LIQUID, N.O.S. (propan-2-ol, Acetone) | FLAMMABLE LIQUID, N.O.S. (propan-2-ol, Acetone) |
| **14.3. Transport hazard class(es)** | | | |
|  3 |  3 |  3 |  3 |
| **14.4. Packing group** | | | |
| II | II | II | II |
| **14.5. Environmental hazards** | | | |
|  |  |  MARINE POLLUTANT | No |
| **14.6. Special precautions for user** | | | |
| **Special Provisions:** 274 \| 601 \| 640D<br>**Limited quantity (LQ):** 1 L<br>**Excepted Quantities (EQ):** E2<br>**Hazard identification number (Kemler No.):** 33 | **Special Provisions:** 274 \| 601 \| 640D<br>**Limited quantity (LQ):** 1 L<br>**Excepted Quantities (EQ):** E2<br>**Classification code:** F1 | **Special Provisions:** 274<br>**Limited quantity (LQ):** 1 L<br>**Excepted Quantities (EQ):** E2<br>**EmS-No.:** F-E, S-E | **Special Provisions:** A3<br>**Limited quantity (LQ):** Y341<br>**Excepted Quantities (EQ):** E2<br>**Remark:** IATA-Verpackungsanweisung - Cargo: 364 |

| Land transport (ADR/RID) | Inland waterway craft (ADN) | Sea transport (IMDG) | Air transport (ICAO-TI / IATA-DGR) |
|---|---|---|---|
| **Classification code:** F1<br>**Tunnel restriction code:** (D/E) | | | IATA Maximum Quantity - Cargo: 5L<br>IATA Packing Instructions - Passenger: 353<br>IATA Maximum Quantity - Passenger: A3 |

### 14.7. Maritime transport in bulk according to IMO instruments
Information not applicable.

## SECTION 15: Regulatory information

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

#### 15.1.1. EU legislation
**Other regulations (EU):**
Hazard categories:
• P3a 'Flammable' aerosols Category 1 or 2, containing flammable gases Category 1 or 2 or flammable liquids

Named dangerous substances:
• Liquefied flammable gases, Category 1 or 2 (including liquefied petroleum gas) and natural gas
Restrictions on the product or substances according to Annex XVII Regulation (EC) 1907/2006
Product:
point 30 - 40
Substances contained:
point 75 (didecyldimethylammonium chloride)
point 75 ((R)-p-mentha-1,8-diene)
point 75 ((S)-p-mentha-1,8-diene)
point 75 (citral)

Regulation (EU) No 2019/1148 (marketing and use of explosives precursors)
Regulated explosives precursor The acquisition, transfer, possession or use of the regulated explosives precursor in question by members of the general public is subject to reporting requirements under Article 9. All suspicious transactions and significant disappearances and thefts must be reported to the relevant national contact point.

Preventive medical check-ups
No precautionary examinations are required when working with this product. This is only on condition that the results of the risk assessment prove that there is only a moderate risk to the safety and health of workers and that the measures provided for by Directive 98/24/EC are sufficient to limit the risk.

**Directive 2004/42/EC on the limitation of emissions of volatile organic compounds:**
Volatile organic compounds (VOC) content in percent by weight: 94.72 Vol-%

#### 15.1.2. National regulations
No data available

### 15.2. Chemical Safety Assessment
A safety-relevant chemical assessment was carried out on the substances listed below and contained therein.
Acetone, (R)-p-mentha-1,8-diene. didecyldimethylammonium chloride

## SECTION 16: Other information

### 16.1. Indication of changes
No data available

### 16.2. Abbreviations and acronyms
ACGIH American Conference of Governmental Industrial Hygienists

| | |
|---|---|
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ASTM | American Society for Testing and Materials |
| BCF | Bioconcentration Factor |
| CAS | Chemical Abstracts Service |
| CLP | Classification, Labelling and Packaging |
| DNEL | derived no-effect level |
| $EC_{50}$ | Effective Concentration 50% |
| EN | European Standard |
| ES | Exposure scenario |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |
| ISO | International Standards Organisation |
| KG | body weight |
| $LC_{50}$ | Lethal (fatal) Concentration 50% |
| $LD_{50}$ | Lethal (fatal) Dose 50% |
| MAK | Maximum concentration in the workplace air (CH) |
| NFPA | National Fire Protection Association |
| NIOSH | National Institute for Occupational Safety & Health |
| NOEC | No Observed Effect Concentration |
| OECD | Organisation for Economic Cooperation and Development |
| OEL | Threshold Limit Value |
| OSHA | Occupational Safety & Health Administration |
| PBT | persistent and bioaccumulative and toxic |
| PNEC | Predicted No Effect Concentration |
| REACH | Registration, Evaluation and Authorization of Chemicals |
| RID | Dangerous goods regulations for transport by rail |
| TRGS | Technische Regeln für Gefahrstoffe |
| UN | United Nations |
| VOC | Volatile organic compounds |
| ZNS | central nervous system |

### 16.3. Key literature references and sources for data

No data available

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

| Hazard classes and hazard categories | Hazard statements | Classification procedure |
|---|---|---|
| flammable liquids *(Flam. Liq. 2)* | H225: Highly flammable liquid and vapour. | |
| Skin corrosion/irritation *(Skin Irrit. 2)* | H315: Causes skin irritation. | |
| Respiratory or skin sensitisation *(Skin Sens. 1)* | H317: May cause an allergic skin reaction. | |
| Serious eye damage/eye irritation *(Eye Irrit. 2)* | H319: Causes serious eye irritation. | |
| STOT-single exposure *(STOT SE 3)* | H336: May cause drowsiness or dizziness. | |
| Hazardous to the aquatic environment *(Aquatic Chronic 2)* | H411: Toxic to aquatic life with long lasting effects. | |

### 16.5. List of relevant hazard statements and/or precautionary statements from sections 2 to 15

| Hazard statements | |
|---|---|
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H301 | Toxic if swallowed. |

| Hazard statements | |
|---|---|
| H304 | May be fatal if swallowed and enters airways. |
| 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. |
| 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. |

### 16.6. Training advice
No data available

### 16.7. Additional information
To the best of our knowledge, the information contained herein is accurate. However, neither the above-mentioned supplier nor its subsidiaries assume any liability with regard to the correctness or completeness of the information provided. A final determination of the suitability of individual materials is the sole responsibility of the user. All materials may involve unknown risks and should be used with caution. While certain risks are described herein, we cannot guarantee that these are the only possible risks.