Safety Boots 400ml

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

1.1. Product identifier

Trade name/designation:

Safety Boots 400ml

Article No.:
T902010

UFI:
K62R-36AM-Q023-QRYC

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
Aerosols *(Aerosol 1)*	H222; H229: Extremely flammable aerosol. Pressurised container: May burst if heated.	
Serious eye damage/eye irritation *(Eye Irrit. 2)*	H319: Causes serious eye irritation.	
Respiratory or skin sensitisation *(Skin Sens. 1B)*	H317: May cause an allergic skin reaction.	
STOT-single exposure *(STOT SE 3)*	H336: May cause drowsiness or dizziness.	

2.2. Label elements

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

Hazard pictograms:

GHS02
Flame

GHS07
Exclamation mark

Signal word: Danger

Hazard components for labelling:
(R)-p-mentha-1,8-diene; 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, sweet, extract

Hazard statements for physical hazards	
H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.

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

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.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P280	Wear protective gloves and eye protection/face protection.

Precautionary statements Storage	
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

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

2.3. Other hazards

Adverse human health effects and symptoms:
The product does not contain any substances with endocrine-disrupting properties in concentrations of ≥ 0.1%.

Adverse environmental 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

Additional information:
The product is an aerosol containing propellants. With regard to the calculation of health hazards, the propellants are not taken into account (unless they constitute a health hazard). The percentages given include the propellants.

Percentage of blowing agents: 75,50%

Regulation (EC) No. 648/2004 [Detergents regulation]:
< 30% aliphatic hydrocarbons
Fragrances, citral, Limonene

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Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 74-98-6 EC No.: 200-827-9 Index No.: 601-003-00-5 REACH No.: 01-2119486944-21	**propane** Flam. Gas 1A (H220), Press. Gas (Liq.) (H280)  Danger	≥ 33 – ≤ 37 Vol-%
CAS No.: 106-97-8 EC No.: 203-448-7 Index No.: 601-004-00-0 REACH No.: 01-2119474691-32	**butane** Flam. Gas 1A (H220), Press. Gas (Liq.) (H280)  Danger	≥ 25 – ≤ 29 Vol-%
CAS No.: 67-63-0 EC No.: 200-661-7 Index No.: 603-117-00-0 REACH No.: 01-2119457558-25	**propan-2-ol** Eye Irrit. 2 (H319), Flam. Liq. 2 (H225), STOT SE 3 (H336)  Danger	≥ 20 – ≤ 22.5 Vol-%
CAS No.: 75-28-5 EC No.: 200-857-2 REACH No.: 01-2119485395-27	**isobutane** Flam. Gas 1A (H220), Press. Gas (Comp.) (H280)  Danger	≥ 12.5 – ≤ 14 Vol-%
CAS No.: 67-64-1 Index No.: 606-001-00-8 REACH No.: 01-2119471330-49	**Acetone** Eye Irrit. 2 (H319), Flam. Liq. 2 (H225), STOT SE 3 (H336)  Danger EUH066	≥ 2 – ≤ 2.5 Vol-%
CAS No.: 5989-27-5 EC No.: 227-813-5 Index No.: 601-096-00-2 REACH No.: 01-2119529223-47	**(R)-p-mentha-1,8-diene** Aquatic Acute 1 (H400), Aquatic Chronic 3 (H412), Asp. Tox. 1 (H304), Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1B (H317)  Danger M-factor (acute): 1	≥ 0.25 – ≤ 0.3 Vol-%
EC No.: 949-141-8 REACH No.: 01-2120789752-39	**Rectified Hydrocarbons by- products from synthetic process of Turpentine and acid, alcohols fraction** Asp. Tox. 1 (H304), Eye Irrit. 2 (H319), Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1 (H317)  Danger	≥ 0.2 Vol-%
CAS No.: 8028-48-6 EC No.: 232-433-8 REACH No.: 01-2119493353-35	**Orange, sweet, extract** Aquatic Chronic 1 (H410), Asp. Tox. 1 (H304), Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1 (H317)  Danger M-factor (chronic): 1	≥ 0.2 Vol-%
CAS No.: 7173-51-5 EC No.: 230-525-2 Index No.: 612-131-00-6 REACH No.: 01-2119945987-15	**didecyldimethylammonium chloride** Acute Tox. 3 (H301), Aquatic Acute 1 (H400), Aquatic Chronic 2 (H411), Eye Dam. 1 (H318), Skin Corr. 1B (H314)  Danger M-factor (acute): 10	≥ 0.1 – ≤ 0.15 Vol-%
CAS No.: 5989-54-8 EC No.: 227-815-6 Index No.: 601-029-00-7 REACH No.: 01-2119958629-18	**(S)-p-mentha-1,8-diene** Aquatic Chronic 1 (H410), Asp. Tox. 1 (H304), Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1 (H317)  Danger M-factor (chronic): 1	≥ 0.05 – ≤ 0.1 Vol-%
CAS No.: 68855-99-2 EC No.: 290-018-7 REACH No.: 01-2120118332-70	**Cubeb root (Litsea cubeba) fruit oil** Aquatic Chronic 2 (H411), Eye Irrit. 2 (H319), Skin Irrit. 2 (H315), Skin Sens. 1 (H317)  Warning	≥ 0.05 – ≤ 0.1 Vol-%

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Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 5392-40-5 EC No.: 226-394-6 Index No.: 605-019-00-3 REACH No.: 01-2119462829-23	**citral** Eye Irrit. 2 (H319), Skin Irrit. 2 (H315), Skin Sens. 1 (H317) Warning	≥ 0.05 – ≤ 0.1 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

Unsuitable extinguishing media:
No further details.

5.2. Special hazards arising from the substance or mixture

If overheated, there is a risk that aerosol containers will deform, burst and be hurled a considerable distance. Before approaching the fire, one must put on a protective helmet. 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:

Any source of ignition (cigarettes, flames, sparks, etc.) or heat must be disposed of from the area where the product has been spilled. Remove persons without protective clothing from the site.

Protective equipment:

Wear protective gloves/protective clothing/eye protection/face protection.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Allow to be absorbed by absorbent material. Provide adequate ventilation.

Other information:

Contaminated material must be disposed of in accordance with the regulations under point 13.

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:

Accumulation of electrostatic charges must be avoided.

Fire prevent measures:

It must not be sprayed into flames or onto glowing bodies.

Measures to prevent aerosol and dust generation:

Vapours can ignite with an explosion, so prevent accumulation by keeping doors and windows open with a draught.

Advices on general occupational hygiene

Do not eat, drink or smoke when using the product. Do not inhale aerosol.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

It must be kept in a well-ventilated area, away from direct sunlight, at temperatures below 50°C / 122°F and away from any source of combustion.

Storage class (TRGS 510, Germany): 2B – Aerosol dispensers and lighters

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 ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
MAK (AT)	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	② 2,000 ppm (3,600 mg/m³) ⑤ (max. 3x60 min./Schicht, Momentanwert)
MAK (AT)	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m³)
MAK (AT)	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m³)
MAK (AT)	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	② 1,600 ppm (3,800 mg/m³) ⑤ (max. 3x60 min./Schicht, Momentanwert)
MAK (AT)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	② 800 ppm (2,000 mg/m³) ⑤ (max. 4x15 min./Schicht)
MAK (AT)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (500 mg/m³)
MAK (AT)	**isobutane** CAS No.: 75-28-5 EC No.: 200-857-2	② 1,600 ppm (3,800 mg/m³) ⑤ (max. 3x60 min./SchichtMomentanwert)
MAK (AT)	**isobutane** CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm (1,900 mg/m³)
MAK (AT)	**Acetone** CAS No.: 67-64-1	② 2,000 ppm (4,800 mg/m³) ⑤ (max. 4x15 min./Schicht)
IOELV (EU)	**Acetone** CAS No.: 67-64-1	① 500 ppm (1,210 mg/m³)
MAK (AT)	**Acetone** CAS No.: 67-64-1	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 ② Exposure route
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	500 mg/m³	① DNEL worker ② Long-term – inhalation, systemic effects
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	89 mg/m³	① DNEL Consumer ② Long-term – inhalation, systemic effects
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	888 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	319 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects

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Substance name	DNEL value	① DNEL type ② Exposure route
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	26 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects
Acetone CAS No.: 67-64-1	1,210 mg/m³	① DNEL worker ② Long-term – inhalation, systemic effects
Acetone CAS No.: 67-64-1	200 mg/m³	① DNEL Consumer ② Long-term – inhalation, systemic effects
Acetone CAS No.: 67-64-1	2,420 mg/m³	① DNEL worker ② Long-term – inhalation, local effects
Acetone CAS No.: 67-64-1	186 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
Acetone CAS No.: 67-64-1	62 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
Acetone CAS No.: 67-64-1	62 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	33.3 mg/m³	① DNEL worker ② Long-term – inhalation, systemic effects
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	8.3 mg/m³	① DNEL Consumer ② Long-term – inhalation, systemic effects
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	0.222 mg/kg	① DNEL worker ② Acute - dermal, local effects
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	0.111 mg/kg	① DNEL Consumer ② Acute - dermal, local effects
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	4.76 mg/kg	① DNEL Consumer ② Long-term - oral, systemic effects
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	31.1 mg/m³	① DNEL worker ② Long-term – inhalation, systemic effects
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	7.78 mg/m³	① DNEL worker ② Acute - inhalation, local effects
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	8.89 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	4.44 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	0.929 mg/cm²	① DNEL worker ② Acute - dermal, local effects

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Substance name	DNEL value	① DNEL type ② Exposure route
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	4.44 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects

Substance name	PNEC Value	① PNEC type
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	140.9 mg/L	① PNEC aquatic, freshwater
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	140.9 mg/L	① PNEC aquatic, marine water
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	2,251 mg/L	① PNEC sewage treatment plant
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	552 mg/kg	① PNEC sediment, freshwater
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	552 mg/kg	① PNEC sediment, marine water
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	28 mg/kg	① PNEC soil
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	140.9 mg/L	① PNEC aquatic, intermittent release
Acetone CAS No.: 67-64-1	10.6 mg/L	① PNEC aquatic, freshwater
Acetone CAS No.: 67-64-1	1.06 mg/L	① PNEC aquatic, marine water
Acetone CAS No.: 67-64-1	100 mg/L	① PNEC sewage treatment plant
Acetone CAS No.: 67-64-1	30.4 mg/L	① PNEC sediment, freshwater
Acetone CAS No.: 67-64-1	3.04 mg/L	① PNEC sediment, marine water
Acetone CAS No.: 67-64-1	29.5 mg/kg	① PNEC soil
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	0.0054 mg/L	① PNEC aquatic, freshwater
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	0.00054 mg/L	① PNEC aquatic, marine water
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	1.8 mg/L	① PNEC sewage treatment plant
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	1.32 mg/kg	① PNEC sediment, freshwater
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	0.13 mg/kg	① PNEC sediment, marine water
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	0.262 mg/kg	① PNEC soil

Substance name	PNEC Value	① PNEC type
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5	3.33 mg/kg	① PNEC secondary poisoning
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	5.4 mg/kg	① PNEC aquatic, freshwater
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	0.54 mg/kg	① PNEC aquatic, marine water
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	2.1 mg/kg	① PNEC sewage treatment plant
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	1.3 mg/L	① PNEC sediment, freshwater
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	0.13 mg/L	① PNEC sediment, marine water
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	0.261 mg/kg	① PNEC soil
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8	5.77 mg/L	① PNEC aquatic, intermittent release
didecyldimethylammonium chloride CAS No.: 7173-51-5 EC No.: 230-525-2	0.0011 mg/L	① PNEC aquatic, freshwater
didecyldimethylammonium chloride CAS No.: 7173-51-5 EC No.: 230-525-2	0.00011 mg/L	① PNEC aquatic, marine water
didecyldimethylammonium chloride CAS No.: 7173-51-5 EC No.: 230-525-2	0.14 mg/L	① PNEC sewage treatment plant
didecyldimethylammonium chloride CAS No.: 7173-51-5 EC No.: 230-525-2	61.86 mg/kg	① PNEC sediment, freshwater
didecyldimethylammonium chloride CAS No.: 7173-51-5 EC No.: 230-525-2	6.186 mg/kg	① PNEC sediment, marine water
didecyldimethylammonium chloride CAS No.: 7173-51-5 EC No.: 230-525-2	1.4 mg/kg	① PNEC soil

8.2. Exposure controls

8.2.1. Appropriate engineering controls

No data available

8.2.2. Personal protection equipment

Eye/face protection:

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

Skin protection:

Work clothing with long sleeves and category III accident protection footwear 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.

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).

If the technical measures taken are not sufficient to reduce the exposure of the worker to the thresholds considered, the use of respiratory protective devices is necessary. The protection provided by the mask is limited in any case.

NACHPRÜFUNGEN DER UMWELTAUSSETZUNG. Emissions from manufacturing processes, including those from ventilation equipment, should be checked for compliance with environmental legislation.

Other protection measures:

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.

8.2.3. Environmental exposure controls

Emissions from manufacturing processes, including those from ventilation equipment, should be checked for compliance with environmental legislation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Aerosol

Colour: colourless

Odour: characteristic

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	*not applicable*		② Reason for missing data: the substance/ mixture is non-polar/aprotic
Initial boiling point and boiling range	*not applicable*		
Flash point	*not applicable*		
Evaporation rate	*No data available*		
Upper/lower flammability or explosive limits	*No data available*		
Vapour pressure	*No data available*		
Density	0.605 kg/L	20 °C	① ASTM D 1298
Bulk density	*not applicable*		
Water solubility	miscible	20 °C	

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-MENTHADIEN-1,8
May react dangerously with: Strong oxidising agents, mineral acids

10.4. Conditions to avoid
Avoid heating.

Acetone
Avoid exposure to: Heat sources, open flames

(R)-P-MENTHADIEN-1,8
Avoid exposure to: Heat, open flames, electrostatic discharges

10.5. Incompatible materials
Strong reducing and oxidising agents, strong bases and acids, materials at high temperatures.

Acetone
Incompatible with: Acids, Oxidising substances

(R)-P-MENTHADIEN-1,8
Incompatible with: Strong acid,Oxidizing agent

10.6. Hazardous decomposition products
Acetone
Can develop: Ketene, irritants

(R)-P-MENTHADIEN-1,8
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
propane CAS No.: 74-98-6 EC No.: 200-827-9
LD_{50} oral: 5,840 mg/kg (Rat)
LD_{50} dermal: 13,900 mg/kg (Rabbit)
LC_{50} Acute inhalation toxicity (gas): >25 ppmV 4 h (Rat)
LC_{50} Acute inhalation toxicity (vapour): ≥50 mg/L 4 h (Rat)

butane CAS No.: 106-97-8 EC No.: 203-448-7
LD_{50} oral: ≥5,000 mg/kg (Rat)
LD_{50} dermal: ≥5,000 mg/kg (Rabbit)
LC_{50} Acute inhalation toxicity (gas): 658 ppmV 4 h (Rat)
LC_{50} Acute inhalation toxicity (vapour): ≥50 mg/L 4 h (Rat)
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)
isobutane CAS No.: 75-28-5 EC No.: 200-857-2
LC_{50} Acute inhalation toxicity (vapour): 52,000 mg/L 2 h (Rat)
Acetone CAS No.: 67-64-1
LD_{50} oral: ≥5,000 mg/kg (Rat)
LD_{50} dermal: >20 mg/kg (Rat)
LC_{50} Acute inhalation toxicity (gas): >20 ppmV 4 h (Rat)
LC_{50} Acute inhalation toxicity (vapour): >50 mg/L 4 h (Rat)
LC_{50} Acute inhalation toxicity (dust/mist): 76 mg/L 4 h (Rat)
(R)-p-mentha-1,8-diene 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 (Rabbit)
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, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8
LD_{50} oral: 200 mg/kg (Rat)
LD_{50} dermal: >5,000 mg/kg (Rat)
LC_{50} Acute inhalation toxicity (dust/mist): 500 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)
(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:
Repeated exposure may cause skin dryness or cracking.

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

propane CAS No.: 74-98-6 EC No.: 200-827-9
LC_{50}: 9,640 mg/L 4 d (fish, Pimephales promelas)
LC_{50}: 0.41 mg/L 4 d (fish, Oncorhynchus mykiss)
LC_{50}: 49.9 mg/L 4 d (fish)
EC_{50}: >100 mg/L (Algae/water plant, Bacteria)
EC_{50}: 0.17 mg/L 3 d (Algae/water plant, Selenastrum capricornutum)
EC_{50}: 69.43 mg/L 2 d (crustaceans, Daphnia)
NOEC: 0.017 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata)
ErC_{50}: 19.37 mg/L 4 d (Algae/water plant)
LOEC: 1,000 mg/L (Algae/water plant, Algae)
LOEC: 1,000 mg/L (Algae/water plant, Alge)
butane CAS No.: 106-97-8 EC No.: 203-448-7
LC_{50}: 49.9 mg/L 4 d (fish)
EC_{50}: 69.43 mg/L 2 d (crustaceans, Daphnia)
ErC_{50}: 19.37 mg/L 4 d (Algae/water plant)
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
LC_{50}: 8,300 mg/L 4 d
LC_{50}: 5,540 mg/L 4 d (fish, Oncorhynchus mykiss)
LC_{50}: 4,042 mg/L (fish)
EC_{50}: 8,800 mg/L 2 d (crustaceans, Daphnia magna)
EC_{50}: 8,300 mg/L (fish)
EC_{50}: 302 mg/L 4 d (Algae/water plant)
NOEC: 2,212 mg/L (crustaceans, Daphnia pulex)

(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5
LC_{50}: 0.72 mg/L 4 d (fish, Pimephales promelas)
EC_{50}: 0.307 mg/L 2 d (crustaceans, Daphnia magna)
EC_{50}: 0.32 mg/L (Algae/water plant, Pseudokirchneriella subcapitata)
ErC_{50}: 150 mg/L 3 d (Algae/water plant, Desmodesmus subspicatus)
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8
LC_{50}: 0.7 mg/L 4 d (fish, Pimephales promelas) OECD 203
EC_{50}: 0.67 mg/L 2 d (crustaceans, Daphnia magna) OECD 202
NOEC: 72 – 83.4 mg/L 28 d OECD 301 B
ErC_{50}: 150 mg/L 3 d (Algae/water plant, Desmodesmus subspicatus) OECD 201
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)
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)

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

propane CAS No.: 74-98-6 EC No.: 200-827-9
Biodegradation: Yes, rapidly
butane CAS No.: 106-97-8 EC No.: 203-448-7
Biodegradation: Yes, rapidly
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
Biodegradation: Yes, rapidly
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5
Biodegradation: Yes, rapidly
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8
Biodegradation: Yes, rapidly
didecyldimethylammonium chloride CAS No.: 7173-51-5 EC No.: 230-525-2
Biodegradation: Yes, rapidly
citral CAS No.: 5392-40-5 EC No.: 226-394-6
Biodegradation: Yes, rapidly

12.3. Bioaccumulative potential

propane CAS No.: 74-98-6 EC No.: 200-827-9
Log K_{OW}: 1.09
butane CAS No.: 106-97-8 EC No.: 203-448-7
Log K_{OW}: 1.09
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7
Log K_{OW}: 0.05

Acetone CAS No.: 67-64-1
Log K_{OW}: -0.23
Bioconcentration factor (BCF): 3
(R)-p-mentha-1,8-diene CAS No.: 5989-27-5 EC No.: 227-813-5
Log K_{OW}: 4.83
Bioconcentration factor (BCF): 660
Orange, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8
Log K_{OW}: > 4
didecyldimethylammonium chloride CAS No.: 7173-51-5 EC No.: 230-525-2
Bioconcentration factor (BCF): 81
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

propane CAS No.: 74-98-6 EC No.: 200-827-9
Results of PBT and vPvB assessment: —
butane CAS No.: 106-97-8 EC No.: 203-448-7
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: —
isobutane CAS No.: 75-28-5 EC No.: 200-857-2
Results of PBT and vPvB assessment: —
Acetone CAS No.: 67-64-1
Results of PBT and vPvB assessment: —
(R)-p-mentha-1,8-diene 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, sweet, extract CAS No.: 8028-48-6 EC No.: 232-433-8
Results of PBT and vPvB assessment: —
didecyldimethylammonium chloride CAS No.: 7173-51-5 EC No.: 230-525-2
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 1950	No dangerous good in sense of these transport regulations.	UN 1950	UN 1950
14.2. UN proper shipping name			
AEROSOLS	No dangerous good in sense of these transport regulations.	AEROSOLS	AEROSOLS, FLAMMABLE
14.3. Transport hazard class(es)			
 2.1	not relevant	 2.1	 2.1
14.4. Packing group			
	not relevant	-	
14.5. Environmental hazards			
No data available	not relevant	No data available	No data available
14.6. Special precautions for user			
Limited quantity (LQ): 1 L **Classification code:** - **Tunnel restriction code:** (D)	not relevant	**Limited quantity (LQ):** 1 L **EmS-No.:** F-D, S-U	**Special Provisions:** Cargo: Höchstmenge 150 Kg, Packaging details 203; Pass.: Höchstmenge75 Kg, Packaging details 203; Special provision: A145, A167, A802;

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 40
Substances contained - point 75

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.

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.
PROPANE
BUTANE
ISOBUTANE
ACETONE
(R)-P-MENTHADIEN-1,8
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
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
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
Aerosols *(Aerosol 1)*	H222; H229: Extremely flammable aerosol. Pressurised container: May burst if heated.	
Serious eye damage/eye irritation *(Eye Irrit. 2)*	H319: Causes serious eye irritation.	
Respiratory or skin sensitisation *(Skin Sens. 1B)*	H317: May cause an allergic skin reaction.	
STOT-single exposure *(STOT SE 3)*	H336: May cause drowsiness or dizziness.	

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

Hazard statements	
H220	Extremely flammable gas.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H280	Contains gas under pressure; may explode if heated.
H301	Toxic if swallowed.
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.
H412	Harmful to aquatic life with long lasting effects.

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

16.6. Training advice
No data available

16.7. Additional information
No data available