SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Deltamethrin (5%) Formulation

Version 4.0  Revision Date: 23.03.2020  SDS Number: 2334777-00009  Date of last issue: 13.09.2019  Date of first issue: 12.12.2017

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

1.1 Product identifier
   Trade name : Deltamethrin (5%) Formulation

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Use of the Substance/Mixture : Veterinary product

1.3 Details of the supplier of the safety data sheet
   Company : MSD
   Walton Manor, Walton
   MK7 7AJ Milton Keynes - United Kingdom
   Telephone : 908-740-4000
   Telefax : 908-735-1496
   E-mail address of person responsible for the SDS : EHSDATASTEWARD@msd.com

1.4 Emergency telephone number
   1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

- Flammable liquids, Category 3
- Acute toxicity, Category 4
- Skin irritation, Category 2
- Serious eye damage, Category 1
- Skin sensitisation, Category 1
- Germ cell mutagenicity, Category 1B
- Carcinogenicity, Category 1B
- Reproductive toxicity, Category 2
- Specific target organ toxicity - single exposure, Category 3
- Specific target organ toxicity - repeated exposure, Category 2
- Aspiration hazard, Category 1
- Short-term (acute) aquatic hazard, Category 1
- Long-term (chronic) aquatic hazard, Category 1
- Flammable liquid and vapour. (H226)
- Harmful if swallowed. (H302)
- Causes skin irritation. (H315)
- Causes serious eye damage. (H318)
- May cause an allergic skin reaction. (H317)
- May cause genetic defects. (H340)
- May cause cancer. (H350)
- Suspected of damaging fertility. Suspected of damaging the unborn child. (H361fd)
- May cause drowsiness or dizziness. (H336)
- May cause damage to organs through prolonged or repeated exposure. (H373)
- May be fatal if swallowed and enters airways. (H304)
- Very toxic to aquatic life. (H400)
- Very toxic to aquatic life with long lasting effects. (H410)
Deltamethrin (5%) Formulation

2.2 Label elements

<table>
<thead>
<tr>
<th>Labelling (REGULATION (EC) No 1272/2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard pictograms</td>
</tr>
<tr>
<td>:</td>
</tr>
<tr>
<td><img src="image" alt="Pictograms" /></td>
</tr>
<tr>
<td>Signal word :</td>
</tr>
<tr>
<td>Danger</td>
</tr>
<tr>
<td>Hazard statements</td>
</tr>
<tr>
<td>:</td>
</tr>
<tr>
<td>H226 Flammable liquid and vapour.</td>
</tr>
<tr>
<td>H302 Harmful if swallowed.</td>
</tr>
<tr>
<td>H304 May be fatal if swallowed and enters airways.</td>
</tr>
<tr>
<td>H315 Causes skin irritation.</td>
</tr>
<tr>
<td>H317 May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H318 Causes serious eye damage.</td>
</tr>
<tr>
<td>H336 May cause drowsiness or dizziness.</td>
</tr>
<tr>
<td>H340 May cause genetic defects.</td>
</tr>
<tr>
<td>H350 May cause cancer.</td>
</tr>
<tr>
<td>H361fd Suspected of damaging fertility. Reported of damaging the unborn child.</td>
</tr>
<tr>
<td>H373 May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
<tr>
<td>H410 Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Precautionary statements :</td>
</tr>
<tr>
<td>Prevention:</td>
</tr>
<tr>
<td>P201 Obtain special instructions before use.</td>
</tr>
<tr>
<td>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</td>
</tr>
<tr>
<td>P273 Avoid release to the environment.</td>
</tr>
<tr>
<td>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</td>
</tr>
<tr>
<td>Response:</td>
</tr>
<tr>
<td>P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.</td>
</tr>
<tr>
<td>P391 Collect spillage.</td>
</tr>
</tbody>
</table>

Hazardous components which must be listed on the label:

Solvent naphtha (petroleum), light aromatic
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts
2-Methyl-1-propanol
Deltamethrin (ISO)

Additional Labelling

Restricted to professional users.

2.3 Other hazards

Vapours may form explosive mixture with air.
### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6</td>
<td>265-199-0</td>
<td>649-356-00-4</td>
<td></td>
<td></td>
<td>Flam. Liq.; H226 Skin Irrit.; H315 Muta.; H340 Carc.; H350 STOT SE 3; H336 Asp. Tox.; H304 Aquatic Chronic 2; H411</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
<tr>
<td>Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts</td>
<td>Not Assigned</td>
<td>271-529-4</td>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit.; H315 Eye Dam.; H318 Aquatic Chronic 3; H412</td>
<td>&gt;= 3 - &lt; 10</td>
</tr>
<tr>
<td>2-Methyl-1-propanol</td>
<td>78-83-1</td>
<td>201-148-0</td>
<td>603-108-00-1</td>
<td></td>
<td></td>
<td>Flam. Liq.; H226 Skin Irrit.; H315 Eye Dam.; H318 STOT SE 3; H336 STOT SE 3; H335</td>
<td>&gt;= 3 - &lt; 10</td>
</tr>
<tr>
<td>Deltamethrin (ISO)</td>
<td>52918-63-5</td>
<td>258-256-6</td>
<td>607-319-00-X</td>
<td></td>
<td></td>
<td>Acute Tox.; H301 Acute Tox.; H331 Eye Irrit.; H319 Skin Sens. 1A; H317 Repr. 2; H361f STOT SE 3; H335 STOT RE 1; H372 STOT RE 1; H372 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 3 - &lt; 10</td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.
SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.

Protection of first-aiders: First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

If inhaled: If inhaled, remove to fresh air. Get medical attention.

In case of skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

In case of eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention immediately.

If swallowed: If swallowed, DO NOT induce vomiting. If vomiting occurs have person lean forward. Call a physician or poison control centre immediately. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Risks: Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. Suspected of damaging fertility. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: Treat symptomatically and supportively.
SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media:
- Water spray
- Alcohol-resistant foam
- Carbon dioxide (CO2)
- Dry chemical

Unsuitable extinguishing media:
- High volume water jet

5.2 Special hazards arising from the substance or mixture
Specific hazards during firefighting:
- Do not use a solid water stream as it may scatter and spread fire.
- Flash back possible over considerable distance.
- Vapours may form explosive mixtures with air.
- Exposure to combustion products may be a hazard to health.

Hazardous combustion products:
- Carbon oxides
- Nitrogen oxides (NOx)
- Bromine compounds
- Sulphur oxides
- Metal oxides

5.3 Advice for firefighters
Special protective equipment for firefighters:
- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.

Specific extinguishing methods:
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Use water spray to cool unopened containers.
- Remove undamaged containers from fire area if it is safe to do so.
- Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Personal precautions:
- Remove all sources of ignition.
- Use personal protective equipment.
- Follow safe handling advice and personal protective equipment recommendations.

6.2 Environmental precautions
Environmental precautions:
- Discharge into the environment must be avoided.
- Prevent further leakage or spillage if safe to do so.
- Prevent spreading over a wide area (e.g. by containment or oil barriers).
- Retain and dispose of contaminated wash water.
- Local authorities should be advised if significant spillages
6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures: See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation: If sufficient ventilation is unavailable, use with local exhaust ventilation. If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

Advice on safe handling: Do not get on skin or clothing. Do not breathe vapours or spray mist. Do not swallow. Do not get in eyes. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment. Non-sparking tools should be used. Keep container tightly closed. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures: If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures,
7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:

Advice on common storage:
- Do not store with the following product types:
  - Strong oxidizing agents
  - Organic peroxides
  - Flammable solids
  - Pyrophoric liquids
  - Pyrophoric solids
  - Self-heating substances and mixtures
  - Substances and mixtures, which in contact with water, emit flammable gases
  - Explosives
  - Gases

7.3 Specific end use(s)
Specific use(s):
- No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Occupational Exposure Limits</th>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methoxy-1-methylethyl acetate</td>
<td>108-65-6</td>
<td>TWA</td>
<td>50 ppm</td>
<td>275 mg/m3</td>
<td>2000/39/EC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>100 ppm</td>
<td>550 mg/m3</td>
<td>2000/39/EC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>50 ppm</td>
<td>274 mg/m3</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>75 ppm</td>
<td>231 mg/m3</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Methyl-1-propanol</td>
<td>78-83-1</td>
<td>TWA</td>
<td>50 ppm</td>
<td>154 mg/m3</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>75 ppm</td>
<td>231 mg/m3</td>
<td>GB EH40</td>
</tr>
<tr>
<td>Deltamethrin (ISO)</td>
<td>52918-63-5</td>
<td>TWA</td>
<td>15 µg/m3</td>
<td>(OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>100 ppm</td>
<td>548 mg/m3</td>
<td>GB EH40</td>
</tr>
</tbody>
</table>

Further information:
- Identifies the possibility of significant uptake through the skin, Indicative
- Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.
# Deltamethrin (5%) Formulation

**SAFETY DATA SHEET**

according to Regulation (EC) No. 1907/2006

**Version 4.0 Revision Date: 23.03.2020 SDS Number: 2334777-00009 Date of last issue: 13.09.2019 Date of first issue: 12.12.2017**

### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-1-propanol</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>310 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>55 mg/m³</td>
</tr>
<tr>
<td>Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts</td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>1.7 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>85 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>89 mg/kg bw/day</td>
</tr>
<tr>
<td>2-Methoxy-1-methylethyl acetate</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>275 mg/m³</td>
</tr>
<tr>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>796 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>33 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>320 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>36 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>550 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>33 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-1-propanol</td>
<td>Fresh water</td>
<td>0.4 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.04 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>11 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>10 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>1.56 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.156 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.076 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts</td>
<td>Fresh water</td>
<td>0.023 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.002 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>3 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>0.174 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.017 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.62 mg/kg dry weight (d.w.)</td>
</tr>
</tbody>
</table>
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Revision Date: 23.03.2020  
SDS Number: 2334777-00009  
Date of last issue: 13.09.2019  
Date of first issue: 12.12.2017

<table>
<thead>
<tr>
<th>Substance/Environment</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methoxy-1-methylethyl acetate</td>
<td></td>
</tr>
<tr>
<td>Fresh water</td>
<td>0.635 mg/l</td>
</tr>
<tr>
<td>Marine water</td>
<td>0.0635 mg/l</td>
</tr>
<tr>
<td>Intermittent use/release</td>
<td>6.35 mg/l</td>
</tr>
<tr>
<td>Sewage treatment plant</td>
<td>100 mg/l</td>
</tr>
<tr>
<td>Fresh water sediment</td>
<td>3.29 mg/kg dry weight</td>
</tr>
<tr>
<td>Marine sediment</td>
<td>0.329 mg/kg dry weight</td>
</tr>
<tr>
<td>Soil</td>
<td>0.29 mg/kg dry weight</td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

**Engineering measures**

Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections).

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).

Minimize open handling.

**Personal protective equipment**

**Eye protection**

Wear safety glasses with side shields or goggles.

If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.

Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

**Hand protection**

Material: Chemical-resistant gloves

Remarks: Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection.

**Skin and body protection**

Work uniform or laboratory coat.

Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.

Use appropriate degowning techniques to remove potentially contaminated clothing.

**Respiratory protection**

If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Equipment should conform to BS EN 14387

Filter type: Combined particulates and organic vapour type (A-P)

### SECTION 9: Physical and chemical properties

**9.1 Information on basic physical and chemical properties**

**Appearance**: liquid

**Colour**: yellow

**Odour**: No data available
Deltamethrin (5%) Formulation

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>3 - 5</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>45 - 51 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>0.963 - 0.967 g/cm³</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>completely miscible</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>The substance or mixture is not classified as oxidizing.</td>
</tr>
</tbody>
</table>

9.2 Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability (liquids)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
</tr>
<tr>
<td>Particle size</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
SECTION 10: Stability and reactivity

10.1 Reactivity
Not classified as a reactivity hazard.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions: Flammable liquid and vapour. Vapours may form explosive mixture with air. Can react with strong oxidizing agents.

10.4 Conditions to avoid
Conditions to avoid: Heat, flames and sparks.

10.5 Incompatible materials
Materials to avoid: Oxidizing agents

10.6 Hazardous decomposition products
No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Information on likely routes of exposure:
- Inhalation
- Skin contact
- Ingestion
- Eye contact

Acute toxicity
Harmful if swallowed.

Product:
Acute oral toxicity: Acute toxicity estimate: 1,334 mg/kg Method: Calculation method

Acute inhalation toxicity: Acute toxicity estimate: > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method

Components:

Solvent naphtha (petroleum), light aromatic:
Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity: LC50 (Rat): > 5.61 mg/l Exposure time: 4 h Test atmosphere: vapour
### Acute dermal toxicity:
- **LD50 (Rabbit):** > 2,000 mg/kg

### 2-Methoxy-1-methylethyl acetate:
- **Acute oral toxicity:** LD50 (Rat): > 5,000 mg/kg
- **Acute inhalation toxicity:** LC0 (Rat): 9.48 mg/l
  - Exposure time: 4 h
  - Test atmosphere: vapour
- **Acute dermal toxicity:** LD50 (Rat): > 5,000 mg/kg

### Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:
- **Acute oral toxicity:** LD50 (Rat): 4,445 mg/kg
- **Acute dermal toxicity:** LD50 (Rat): > 2,000 mg/kg
  - Method: OECD Test Guideline 402
  - Remarks: Based on data from similar materials

### 2-Methyl-1-propanol:
- **Acute oral toxicity:** LD50 (Rat): 3,350 mg/kg
  - Method: OECD Test Guideline 401
- **Acute inhalation toxicity:** LC50 (Rat): > 24.6 mg/l
  - Exposure time: 4 h
  - Test atmosphere: vapour
- **Acute dermal toxicity:** LD50 (Rabbit): 2,460 mg/kg
  - Method: OECD Test Guideline 402

### Deltamethrin (ISO):
- **Acute oral toxicity:**
  - LD50 (Rat): 66.7 mg/kg
  - LD50 (Rat): 9 - 139 mg/kg
  - LD50 (Mouse): 19 - 34 mg/kg
- **Acute inhalation toxicity:**
  - LC50 (Rat): 0.8 mg/l
  - Exposure time: 2 h
  - Test atmosphere: dust/mist
- **Acute dermal toxicity:** LD50 (Rabbit): 2,000 mg/kg
  - LD50 (Rat): > 800 mg/kg
- **Acute toxicity (other routes of administration):**
  - LD50 (Rat): 2.5 mg/kg
    - Application Route: Intravenous
  - LD50 (Mouse): 10 mg/kg
    - Application Route: Intraperitoneal
Skin corrosion/irritation
Causes skin irritation.

**Components:**

**Solvent naphtha (petroleum), light aromatic:**
- **Species**: Rabbit
- **Method**: OECD Test Guideline 404
- **Result**: Skin irritation

**2-Methoxy-1-methylethyl acetate:**
- **Species**: Rabbit
- **Result**: No skin irritation

**Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:**
- **Species**: Rabbit
- **Method**: OECD Test Guideline 404
- **Result**: Skin irritation

**2-Methyl-1-propanol:**
- **Species**: Rabbit
- **Method**: OECD Test Guideline 404
- **Result**: Skin irritation

**Deltamethrin (ISO):**
- **Species**: Rabbit
- **Result**: No skin irritation

Serious eye damage/eye irritation
Causes serious eye damage.

**Components:**

**Solvent naphtha (petroleum), light aromatic:**
- **Species**: Rabbit
- **Method**: OECD Test Guideline 405
- **Result**: No eye irritation

**2-Methoxy-1-methylethyl acetate:**
- **Species**: Rabbit
- **Result**: No eye irritation

**Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:**
- **Species**: Rabbit
- **Method**: OECD Test Guideline 405
- **Result**: Irreversible effects on the eye

**2-Methyl-1-propanol:**
- **Species**: Rabbit
**Deltamethrin (5%) Formulation**

<table>
<thead>
<tr>
<th>Method</th>
<th>OECD Test Guideline 405</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>Irreversible effects on the eye</td>
</tr>
</tbody>
</table>

### Deltamethrin (ISO):

- **Species**: Rabbit
- **Result**: Moderate eye irritation

#### Respiratory or skin sensitisation

- **Skin sensitisation**
  - May cause an allergic skin reaction.
- **Respiratory sensitisation**
  - Not classified based on available information.

### Components:

#### Solvent naphtha (petroleum), light aromatic:

- **Test Type**: Buehler Test
- **Exposure routes**: Skin contact
- **Species**: Guinea pig
- **Result**: negative

#### 2-Methoxy-1-methylethyl acetate:

- **Test Type**: Maximisation Test
- **Exposure routes**: Skin contact
- **Species**: Guinea pig
- **Method**: OECD Test Guideline 406
- **Result**: negative

#### Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

- **Test Type**: Magnusson-Kligman-Test
- **Exposure routes**: Skin contact
- **Species**: Guinea pig
- **Method**: OECD Test Guideline 406
- **Remarks**: Based on data from similar materials

#### 2-Methyl-1-propanol:

- **Test Type**: Maximisation Test
- **Exposure routes**: Skin contact
- **Species**: Guinea pig
- **Result**: negative
- **Remarks**: Based on data from similar materials

#### Deltamethrin (ISO):

- **Test Type**: Maximisation Test
- **Exposure routes**: Dermal
- **Species**: Guinea pig
- **Result**: negative
Deltamethrin (5%) Formulation

Test Type: Human repeat insult patch test (HRIPT)
Exposure routes: Dermal
Species: Humans
Result: positive

Germ cell mutagenicity
May cause genetic defects.

Components:

Solvent naphtha (petroleum), light aromatic:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo: Test Type: Sister chromatid exchange analysis in spermatogonia Species: Mouse Application Route: Intraperitoneal injection Result: positive
Germ cell mutagenicity- Assessment: Positive result(s) from in vivo heritable germ cell mutagenicity tests in mammals

2-Methoxy-1-methylethyl acetate:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo: Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro) Result: negative
Genotoxicity in vivo: Test Type: In vitro mammalian cell gene mutation test Result: negative Remarks: Based on data from similar materials

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

2-Methyl-1-propanol:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vitro: Test Type: Chromosome aberration test in vitro Result: negative
Deltamethrin (5%) Formulation

Genotoxicity in vivo:
- Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
  - Species: Mouse
  - Application Route: Ingestion
  - Method: OECD Test Guideline 474
  - Result: negative

Genotoxicity in vitro:
- Test Type: Bacterial reverse mutation assay (AMES)
  - Result: negative

- Test Type: DNA Repair
  - Test system: Escherichia coli
  - Result: negative

- Test Type: Chromosomal aberration
  - Test system: Chinese hamster ovary cells
  - Result: negative

- Test Type: In vitro mammalian cell gene mutation test
  - Test system: Chinese hamster lung cells
  - Concentration: LOAEL: 20 mg/kg
  - Result: positive

Genotoxicity in vivo:
- Test Type: Micronucleus test
  - Species: Mouse
  - Application Route: Oral
  - Result: negative

- Test Type: dominant lethal test
  - Species: Mouse
  - Application Route: Oral
  - Result: negative

- Test Type: sister chromatid exchange assay
  - Species: Mouse
  - Cell type: Bone marrow
  - Application Route: Oral
  - Result: negative

Carcinogenicity:
May cause cancer.

Components:

- Solvent naphtha (petroleum), light aromatic:
  - Species: Mouse
  - Application Route: Skin contact
  - Exposure time: 2 Years
  - Result: positive
Carcinogenicity - Assessment: Sufficient evidence of carcinogenicity in animal experiments

### 2-Methoxy-1-methylethyl acetate:

- **Species**: Rat
- **Application Route**: inhalation (vapour)
- **Exposure time**: 2 Years
- **Result**: negative
- **Remarks**: Based on data from similar materials

### Deltamethrin (ISO):

- **Species**: Mouse, male and female
- **Application Route**: oral (feed)
- **Exposure time**: 104 weeks
- **NOAEL**: 8 mg/kg body weight
- **LOAEL**: 4 mg/kg body weight
- **Result**: positive
- **Target Organs**: Lymph nodes

- **Species**: Rat, male and female
- **Application Route**: oral (feed)
- **Exposure time**: 2 Years
- **Result**: negative

- **Species**: Dog, male and female
- **Application Route**: oral (feed)
- **Exposure time**: 2 Years
- **NOAEL**: 1 mg/kg body weight
- **Result**: negative

**Reproductive toxicity**

Suspected of damaging fertility. Suspected of damaging the unborn child.

### Components:

### Solvent naphtha (petroleum), light aromatic:

- **Effects on fertility**: Test Type: Reproduction/Developmental toxicity screening test
  - **Species**: Rat
  - **Application Route**: inhalation (vapour)
  - **Result**: negative

- **Effects on foetal development**: Test Type: Embryo-foetal development
  - **Species**: Rat
  - **Application Route**: inhalation (vapour)
  - **Result**: negative

### 2-Methoxy-1-methylethyl acetate:

- **Effects on fertility**: Test Type: Two-generation reproduction toxicity study
  - **Species**: Rat
  - **Application Route**: inhalation (vapour)
# Deltamethrin (5%) Formulation

<table>
<thead>
<tr>
<th>Method</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 416</td>
<td>negative</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

## Effects on foetal development

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Application Route</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embryo-foetal development</td>
<td>Rat</td>
<td>Inhalation (vapour)</td>
<td>negative</td>
</tr>
</tbody>
</table>

## 2-Methyl-1-propanol:

### Effects on fertility

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Application Route</th>
<th>Method</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-generation reproduction toxicity study</td>
<td>Rat</td>
<td>Inhalation (vapour)</td>
<td>OPPTS 870.3800</td>
<td>negative</td>
</tr>
</tbody>
</table>

### Effects on foetal development

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Application Route</th>
<th>Method</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embryo-foetal development</td>
<td>Rat</td>
<td>Inhalation (vapour)</td>
<td>OECD Test Guideline 414</td>
<td>negative</td>
</tr>
</tbody>
</table>

## Deltamethrin (ISO):

### Effects on fertility

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Application Route</th>
<th>NOAEL</th>
<th>Symptoms</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three-generation reproduction toxicity study</td>
<td>Rat</td>
<td>Oral (feed)</td>
<td>50 mg/kg body weight</td>
<td>No effects on fertility, Embryo-foetal toxicity</td>
<td>Significant toxicity observed in testing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Application Route</th>
<th>LOAEL</th>
<th>Symptoms</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-generation reproduction toxicity study</td>
<td>Rat</td>
<td>Oral</td>
<td>84 - 149 mg/kg body weight</td>
<td>No effects on fertility, Embryo-foetal toxicity</td>
<td></td>
</tr>
</tbody>
</table>

### Effects on foetal development

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Application Route</th>
<th>LOAEL</th>
<th>Symptoms</th>
<th>Target Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>Mouse</td>
<td>Oral (gavage)</td>
<td>1 mg/kg body weight</td>
<td>Skeletal malformations</td>
<td>Testes</td>
</tr>
</tbody>
</table>

Test Type: Fertility
Species: Rat, male
Application Route: Oral
Fertility: LOAEL: 1 mg/kg body weight
Symptoms: Effects on fertility
Target Organs: Testes
Species: Rat, female  
Developmental Toxicity: NOAEL: 10 mg/kg body weight  
Symptoms: No effects on foetal development  

Test Type: Development  
Species: Rabbit, female  
Application Route: oral (gavage)  
Developmental Toxicity: NOAEL: 16 mg/kg body weight  
Symptoms: No effects on foetal development  

Reproductive toxicity - Assessment: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.  

STOT - single exposure  
May cause drowsiness or dizziness.  

Components:  
Solvent naphtha (petroleum), light aromatic:  
Assessment: May cause drowsiness or dizziness.  

2-Methoxy-1-methylethyl acetate:  
Assessment: May cause drowsiness or dizziness.  

2-Methyl-1-propanol:  
Assessment: May cause respiratory irritation., May cause drowsiness or dizziness.  

Deltamethrin (ISO):  
Assessment: May cause respiratory irritation.  

STOT - repeated exposure  
May cause damage to organs through prolonged or repeated exposure.  

Components:  
Deltamethrin (ISO):  
Exposure routes: Ingestion  
Target Organs: Central nervous system, Immune system  
Assessment: Causes damage to organs through prolonged or repeated exposure.  

Exposure routes: inhalation (dust/mist/fume)  
Target Organs: Central nervous system  
Assessment: Causes damage to organs through prolonged or repeated exposure.
Repeated dose toxicity

Components:

**Solvent naphtha (petroleum), light aromatic:**

| Species | Rat |
| Application Route | Ingestion |
| LOAEL | 500 mg/kg |
| Exposure time | 28 Days |

**2-Methoxy-1-methylethyl acetate:**

| Species | Rat |
| Application Route | Ingestion |
| NOAEL | > 1,000 mg/kg |
| Exposure time | 41 - 45 Days |

**Method:** OECD Test Guideline 422

| Species | Mouse |
| Application Route | Inhalation (vapour) |
| NOAEL | 1.62 mg/l |
| Exposure time | 2 yr |

**Remarks:** Based on data from similar materials

| Species | Rabbit |
| Application Route | Skin contact |
| NOAEL | > 1,838 mg/kg |
| Exposure time | 90 Days |

**Remarks:** Based on data from similar materials

**2-Methyl-1-propanol:**

| Species | Rat |
| Application Route | Ingestion |
| NOAEL | > 1,450 mg/kg |
| Exposure time | 90 Days |

**Method:** OECD Test Guideline 408

**Deltamethrin (ISO):**

| Species | Rat, male and female |
| Application Route | Oral |
| NOAEL | 1 mg/kg |
| LOAEL | 2.5 mg/kg |
| Exposure time | 13 Weeks |
| Target Organs | Nervous system |
| Symptoms | Hyperexcitability |

| Species | Rat |
| Application Route | Inhalation (dust/mist/fume) |
| LOAEL | 3 mg/m3 |
| Test atmosphere | Dust/mist |
| Exposure time | 2 wk / 5 d/wk / 6 h/d |
| Symptoms | Local irritation, respiratory tract irritation |
Species: Dog
NOAEL: 0.1 mg/kg
LOAEL: 1 mg/kg
Application Route: Oral
Exposure time: 13 Weeks
Target Organs: Nervous system
Symptoms: Dilatation of the pupil, Vomiting, Tremors, Diarrhoea, Salivation

Species: Rat
NOAEL: 14 mg/kg
LOAEL: 54 mg/kg
Application Route: Oral
Exposure time: 91 d
Target Organs: Nervous system

Species: Mouse
LOAEL: 6 mg/kg
Application Route: Oral
Exposure time: 12 Weeks
Target Organs: Immune system
Symptoms: immune system effects

Aspiration toxicity
May be fatal if swallowed and enters airways.

Product:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Components:
Solvent naphtha (petroleum), light aromatic:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

2-Methyl-1-propanol:
The substance or mixture causes concern owing to the assumption that it causes a human aspiration toxicity hazard.

Experience with human exposure

Components:
Deltamethrin (ISO):
Inhalation:
Symptoms: respiratory tract irritation, Dizziness, Sweating, Headache, Nausea, Vomiting, anorexia, Fatigue, tingling, Palpitation, Blurred vision, muscle twitching

Skin contact:
Symptoms: Skin irritation, Erythema, pruritis, Headache, Nausea, Vomiting, Dizziness, tingling, Sweating, muscle twitching, Blurred vision, Fatigue, anorexia, Allergic reactions

Ingestion:
Symptoms: muscle pain, Small pupils
## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

<table>
<thead>
<tr>
<th>Components</th>
<th>Toxicity to fish</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
<th>Toxicity to algae/aquatic plants</th>
<th>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</th>
<th>2-Methoxy-1-methylethyl acetate:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Solvent naphtha (petroleum), light aromatic:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50 (Pimephales promelas (fathead minnow)): 8.2 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction</td>
<td>EL50 (Daphnia magna (Water flea)): 4.5 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202</td>
<td>EL50 (Pseudokirchneriella subcapitata (microalgae)): 3.1 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201</td>
<td>NOELR (Pseudokirchneriella subcapitata (microalgae)): 0.5 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201</td>
<td>LC50 (Oncorhynchus mykiss (rainbow trout)): &gt; 100 - 180 mg/l Exposure time: 96 h Method: OECD Test Guideline 203</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EC50 (Daphnia magna (Water flea)): &gt; 500 mg/l Exposure time: 48 h</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ErC50 (Pseudokirchneriella subcapitata (green algae)): &gt; 1,000 mg/l Exposure time: 96 h Method: OECD Test Guideline 201</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NOEC (Pseudokirchneriella subcapitata (algae)): &gt; 1,000 mg/l Exposure time: 96 h Method: OECD Test Guideline 201</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EC10 : &gt; 1,000 mg/l Exposure time: 0.5 h</td>
</tr>
</tbody>
</table>
### Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

- **NOEC:** \( \geq 100 \, \text{mg/l} \)
- **Exposure time:** 21 d
- **Species:** *Daphnia magna* (Water flea)
- **Method:** OECD Test Guideline 211

### Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

#### Toxicity to fish

- **LC50:** \( > 1 - < 10 \, \text{mg/l} \)
- **Exposure time:** 96 h
- **Method:** OECD Test Guideline 203

#### Toxicity to daphnia and other aquatic invertebrates

- **EC50** (*Daphnia magna* (Water flea)): 2.9 mg/l
- **Exposure time:** 48 h
- **Method:** OECD Test Guideline 202
- **Remarks:** Based on data from similar materials

#### Toxicity to algae/aquatic plants

- **ErC50** (*Pseudokirchneriella subcapitata* (green algae)): 29 mg/l
- **Exposure time:** 96 h
- **Remarks:** Based on data from similar materials
- **NOEC** (*Pseudokirchneriella subcapitata* (green algae)): 0.5 mg/l
- **Exposure time:** 96 h
- **Remarks:** Based on data from similar materials

#### Toxicity to fish (Chronic toxicity)

- **NOEC:** 0.23 mg/l
- **Exposure time:** 72 d
- **Species:** *Oncorhynchus mykiss* (rainbow trout)
- **Remarks:** Based on data from similar materials

#### Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

- **NOEC:** 1.18 mg/l
- **Exposure time:** 21 d
- **Species:** *Daphnia magna* (Water flea)
- **Remarks:** Based on data from similar materials

### 2-Methyl-1-propanol:

#### Toxicity to fish

- **LC50** (*Pimephales promelas* (fathead minnow)): 1,430 mg/l
- **Exposure time:** 96 h

#### Toxicity to daphnia and other aquatic invertebrates

- **EC50** (*Daphnia pulex* (Water flea)): 1,100 mg/l
- **Exposure time:** 48 h

#### Toxicity to algae/aquatic plants

- **ErC50** (*Pseudokirchneriella subcapitata* (green algae)): 1,799 mg/l
- **Exposure time:** 72 h
- **Method:** OECD Test Guideline 201
- **NOEC** (*Pseudokirchneriella subcapitata* (green algae)): 117 mg/l
- **Exposure time:** 72 h
- **Method:** OECD Test Guideline 201
Deltamethrin (5%) Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date:</th>
<th>SDS Number:</th>
<th>Date of last issue:</th>
<th>Date of first issue:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>23.03.2020</td>
<td>2334777-00009</td>
<td>13.09.2019</td>
<td>12.12.2017</td>
</tr>
</tbody>
</table>

### Toxicity to Daphnia and other Aquatic Invertebrates (Chronic toxicity)

- **NOEC**: 20 mg/l
- **Exposure time**: 21 d
- **Species**: Daphnia magna (Water flea)

### Deltamethrin (ISO):

#### Toxicity to Fish

- **LC50**: (Cyprinodon variegatus (sheephead minnow)): 0.00048 mg/l  
  - **Exposure time**: 96 h

- **LC50**: (Oncorhynchus mykiss (rainbow trout)): 0.00039 mg/l  
  - **Exposure time**: 96 h

#### Toxicity to Daphnia and other Aquatic Invertebrates

- **EC50**: (Mysidopsis bahia (opossum shrimp)): 0.0037 µg/l  
  - **Exposure time**: 48 h

- **EC50**: (Daphnia magna (Water flea)): 0.0035 mg/l  
  - **Exposure time**: 48 h

- **LC50**: (Gammarus fasciatus (freshwater shrimp)): 0.0003 µg/l  
  - **Exposure time**: 96 h

#### Toxicity to Algae/Aquatic Plants

- **EC50**: (Pseudokirchneriella subcapitata (green algae)): > 9.1 mg/l  
  - **Exposure time**: 72 h
  - **Method**: OECD Test Guideline 201
  - **Remarks**: No toxicity at the limit of solubility

#### M-Factor (Acute Aquatic Toxicity)

- **M-Factor**: 1,000,000

#### Toxicity to Fish (Chronic Toxicity)

- **NOEC**: 0.000022 mg/l  
  - **Exposure time**: 36 d
  - **Species**: Pimephales promelas (fathead minnow)

- **NOEC**: 0.000017 mg/l  
  - **Exposure time**: 260 d
  - **Species**: Pimephales promelas (fathead minnow)

#### Toxicity to Daphnia and other Aquatic Invertebrates (Chronic Toxicity)

- **NOEC**: 0.0041 µg/l  
  - **Exposure time**: 21 d
  - **Species**: Daphnia magna (Water flea)

#### M-Factor (Chronic Aquatic Toxicity)

- **M-Factor**: 1,000,000

### 12.2 Persistence and Degradability

#### Components:

- **Solvent naphtha (petroleum), light aromatic:**
  - **Biodegradability**: Result: Inherently biodegradable.
    - **Biodegradation**: 94 %
    - **Exposure time**: 25 d
Deltamethrin (5%) Formulation

2-Methoxy-1-methylethyl acetate:
Biodegradability: Result: Readily biodegradable.
Biodegradation: 90 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:
Biodegradability: Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

2-Methyl-1-propanol:
Biodegradability: Result: Readily biodegradable.
Biodegradation: 70 - 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Deltamethrin (ISO):
Stability in water: Hydrolysis: 0 % (30 d)

12.3 Bioaccumulative potential

Components:

2-Methoxy-1-methylethyl acetate:
Partition coefficient: n-octanol/water: log Pow: 1.2

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:
Partition coefficient: n-octanol/water: log Pow: 2.89

2-Methyl-1-propanol:
Partition coefficient: n-octanol/water: log Pow: 1

Deltamethrin (ISO):
Bioaccumulation: Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 1,800
Partition coefficient: n-octanol/water: log Pow: 4.6

12.4 Mobility in soil

Components:

Deltamethrin (ISO):
Distribution among environmental compartments: log Koc: 7.2
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

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12.5 Results of PBT and vPvB assessment
Not relevant

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product: Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

<table>
<thead>
<tr>
<th>ADN</th>
<th>: UN 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>: UN 1993</td>
</tr>
<tr>
<td>RID</td>
<td>: UN 1993</td>
</tr>
<tr>
<td>IMDG</td>
<td>: UN 1993</td>
</tr>
<tr>
<td>IATA</td>
<td>: UN 1993</td>
</tr>
</tbody>
</table>

14.2 UN proper shipping name

<table>
<thead>
<tr>
<th>ADN</th>
<th>: FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, 2-Methoxy-1-methylethyl acetate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>: FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, 2-Methoxy-1-methylethyl acetate)</td>
</tr>
<tr>
<td>RID</td>
<td>: FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, 2-Methoxy-1-methylethyl acetate)</td>
</tr>
<tr>
<td>IMDG</td>
<td>: FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, 2-Methoxy-1-methylethyl acetate, Deltamethrin (ISO))</td>
</tr>
<tr>
<td>IATA</td>
<td>: Flammable liquid, n.o.s. (Solvent naphtha (petroleum), light aromatic, 2-Methoxy-1-methylethyl acetate)</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date:</th>
<th>SDS Number:</th>
<th>Date of last issue:</th>
<th>Date of first issue:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>23.03.2020</td>
<td>2334777-00009</td>
<td>13.09.2019</td>
<td>12.12.2017</td>
</tr>
</tbody>
</table>

14.3 Transport hazard class(es)

- **ADN**: 3
- **ADR**: 3
- **RID**: 3
- **IMDG**: 3
- **IATA**: 3

14.4 Packing group

**ADN**
- Packing group: III
- Classification Code: F1
- Hazard Identification Number: 30
- Labels: 3

**ADR**
- Packing group: III
- Classification Code: F1
- Hazard Identification Number: 30
- Labels: 3
- Tunnel restriction code: (D/E)

**RID**
- Packing group: III
- Classification Code: F1
- Hazard Identification Number: 30
- Labels: 3

**IMDG**
- Packing group: III
- Labels: 3
- EmS Code: F-E, S-E

**IATA (Cargo)**
- Packing instruction (cargo aircraft): 366
- Packing instruction (LQ): Y344
- Packing group: III
- Labels: Flammable Liquids

**IATA (Passenger)**
- Packing instruction (passenger aircraft): 355
- Packing instruction (LQ): Y344
- Packing group: III
- Labels: Flammable Liquids

14.5 Environmental hazards

- **ADN**: Environmentally hazardous: yes
- **ADR**: Environmentally hazardous: yes
- **RID**: Environmentally hazardous: yes
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14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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

Remarks: Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Conditions of restriction for the following entries should be considered: Number on list 3 Solvent naphtha (petroleum), light aromatic (Number on list 29, 28)

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).

REACH - List of substances subject to authorisation (Annex XIV).

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast): Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Not applicable


<table>
<thead>
<tr>
<th>E1</th>
<th>ENVIRONMENTAL HAZARDS</th>
<th>Quantity 1</th>
<th>Quantity 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>P5c</td>
<td>FLAMMABLE LIQUIDS</td>
<td>100 t</td>
<td>200 t</td>
</tr>
<tr>
<td>34</td>
<td>Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams), (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties</td>
<td>2,500 t</td>
<td>25,000 t</td>
</tr>
</tbody>
</table>

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Other regulations:
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.
Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

The components of this product are reported in the following inventories:
AICS : not determined
DSL  : not determined
IECSC: not determined

15.2 Chemical safety assessment
A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information : Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of H-Statements
H226 : Flammable liquid and vapour.
H301 : Toxic if swallowed.
H304 : May be fatal if swallowed and enters airways.
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.
H331 : Toxic if inhaled.
H335 : May cause respiratory irritation.
H336 : May cause drowsiness or dizziness.
H340 : May cause genetic defects.
H350 : May cause cancer.
H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
H372 : Causes damage to organs through prolonged or repeated exposure if inhaled.
H372 : Causes damage to organs through prolonged or repeated exposure if swallowed.
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.

Full text of other abbreviations
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Date of last issue: 13.09.2019

Acute Tox.: Acute toxicity
Aquatic Acute: Short-term (acute) aquatic hazard
Aquatic Chronic: Long-term (chronic) aquatic hazard
Asp. Tox.: Aspiration hazard
Carc.: Carcinogenicity
Eye Dam.: Serious eye damage
Eye Irrit.: Eye irritation
Flam. Liq.: Flammable liquids
Muta.: Germ cell mutagenicity
Repr.: Reproductive toxicity
Skin Irrit.: Skin irritation
Skin Sens.: Skin sensitisation
STOT RE: Specific target organ toxicity - repeated exposure
STOT SE: Specific target organ toxicity - single exposure
GB EH40: UK. EH40 WEL - Workplace Exposure Limits
2000/39/EC / TWA: Limit Value - eight hours
2000/39/EC / STEL: Short term exposure limit
GB EH40 / TWA: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL: Short-term exposure limit (15-minute reference period)

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; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; ICD0 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

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Further information
Sources of key data used to compile the Safety Data Sheet:

Classification of the mixture:
- Flam. Liq. 3 H226 Based on product data or assessment
- Acute Tox. 4 H302 Calculation method
- Skin Irrit. 2 H315 Calculation method
- Eye Dam. 1 H318 Calculation method
- Skin Sens. 1 H317 Calculation method
- Muta. 1B H340 Calculation method
- Carc. 1B H350 Calculation method
- Repr. 2 H361fd Calculation method
- STOT SE 3 H336 Calculation method
- STOT RE 2 H373 Calculation method
- Asp. Tox. 1 H304 Based on product data or assessment
- Aquatic Acute 1 H400 Calculation method
- Aquatic Chronic 1 H410 Calculation method

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.

GB / EN