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
Shotton Lane
NE23 3JU Cramlington NU - Great Britain
Telephone : 44 1 670 59 30 00
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

Harmful if swallowed. H302: Harmful if swallowed.
Causes skin irritation. H315: Causes skin irritation.
Causes serious eye damage. H318: Causes serious eye damage.
May cause an allergic skin reaction. H317: May cause an allergic skin reaction.
May cause genetic defects. H340: May cause genetic defects.
May cause cancer. H350: May cause cancer.
May cause drowsiness or dizziness. H336: May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure. H373: May cause damage to organs through prolonged or repeated exposure.
May be fatal if swallowed and enters airways. H304: May be fatal if swallowed and enters airways.
Very toxic to aquatic life. H400: Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects. H410: Very toxic to aquatic life with long lasting effects.
Deltamethrin (5%) Formulation

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms:

Signal word: Danger

Hazard statements:
- H226 Flammable liquid and vapour.
- H302 Harmful 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.
- 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.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention:
- P201 Obtain special instructions before use.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
- 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.
- P391 Collect spillage.

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>Concentration (%) w/w</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6</td>
<td>265-199-0</td>
<td>649-356-00-4</td>
<td>Flam. Liq.; H226 Skin Irrit.; H315 Mutagen.; H340 Carcin.; H350 STOT SE3; H336 Asp. Tox.; H304 Aquatic Chronic; H411</td>
<td>&gt;= 30 - &lt; 50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts</td>
<td>Not Assigned</td>
<td>271-529-4</td>
<td></td>
<td>Skin Irrit.; H315 Eye Dam.; H318 Aquatic Chronic; H412</td>
<td>&gt;= 3 - &lt; 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-Methyl-1-propanol</td>
<td>78-83-1</td>
<td>201-148-0</td>
<td>603-108-00-1</td>
<td>Flam. Liq.; H226 Skin Irrit.; H315 Eye Dam.; H318 STOT SE3; H336 STOT SE3; H335</td>
<td>&gt;= 3 - &lt; 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deltamethrin (ISO)</td>
<td>52918-63-5</td>
<td>258-256-6</td>
<td>607-319-00-X</td>
<td>Acute Tox.; H301 Acute Tox.; H331 Eye Irrit.; H319 Skin Sens.; H317 Repr.; H361f STOT SE3; H336 STOT RE1; H372 STOT RE1; H372 Aquatic Acute; H400 Aquatic Chronic;</td>
<td>&gt;= 3 - &lt; 10</td>
<td></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,
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Deltamethrin (5%) Formulation

Version 4.0 Revision Date: 23.03.2020 SDS Number: 2334772-00009 Date of last issue: 13.09.2019
Date of first issue: 12.12.2017

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:
Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.

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

Occupational Exposure Limits

<table>
<thead>
<tr>
<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>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6</td>
<td>TWA</td>
<td>25 ppm</td>
<td>FOR-2011-12-06-1358</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>120 mg/m³</td>
<td></td>
</tr>
<tr>
<td>2-Methoxy-1-methylethyl acetate</td>
<td>108-65-6</td>
<td>TWA</td>
<td>50 ppm</td>
<td>FOR-2011-12-06-1358</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>270 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: The EU has set an indicative limit value for this substance, Chemicals that can be absorbed through the skin.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>50 ppm</td>
<td>2000/39/EC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>275 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Identifies the possibility of significant uptake through the skin, Indicative</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>100 ppm</td>
<td>2000/39/EC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>550 mg/m³</td>
<td></td>
</tr>
<tr>
<td>2-Methyl-1-propanol</td>
<td>78-83-1</td>
<td>T</td>
<td>25 ppm</td>
<td>FOR-2011-12-06-1358</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>75 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Chemicals that can be absorbed through the skin., Ceiling value is an instantaneous value which indicates the maximum concentration of a chemical in the breathing zone that should not be exceeded.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deltamethrin (ISO)</td>
<td>52918-63-5</td>
<td>TWA</td>
<td>15 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
</tbody>
</table>

industrial hygiene monitoring, medical surveillance and the use of administrative controls.
Further information: DSEN, Skin
Wipe limit 150 µg/100 cm² Internal

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.,</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>calcium salts</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></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>796 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>33 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>320 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>36 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>550 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>33 mg/m³</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.,</td>
<td>Fresh water</td>
<td>0,023 mg/l</td>
</tr>
<tr>
<td>calcium salts</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</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 NS 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
**Deltamethrin (5%) Formulation**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<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**

- Flammability (liquids): Not applicable
- Molecular weight: No data available
- Particle size: Not applicable
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
Deltamethrin (5%) Formulation

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):

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>Moderate eye irritation</td>
</tr>
</tbody>
</table>

#### 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:**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Buehler Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Maximisation Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 406</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Magnusson-Kligman-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 406</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Maximisation Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**Deltamethrin (ISO):**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Maximisation Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Dermal</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>
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
  Test Type: In vitro mammalian cell gene mutation test
  Result: positive
- 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
  Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
  Result: negative
  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:
- Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
  Result: negative
  Remarks: Based on data from similar materials

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

Test Type: In vitro mammalian cell gene mutation test
Result: negative

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

Deltamethrin (ISO):
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>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue</th>
<th>Date of first issue</th>
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<td>23.03.2020</td>
<td>2334772-00009</td>
<td>13.09.2019</td>
<td>12.12.2017</td>
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</table>

- **Method:** OECD Test Guideline 416
- **Result:** negative
- **Remarks:** Based on data from similar materials

**Effects on foetal development**

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

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

- **Effects on fertility**
  - **Test Type:** Two-generation reproduction toxicity study
  - **Species:** Rat
  - **Application Route:** inhalation (vapour)
  - **Method:** OPPTS 870.3800
  - **Result:** negative

- **Effects on foetal development**
  - **Test Type:** Embryo-foetal development
  - **Species:** Rat
  - **Application Route:** inhalation (vapour)
  - **Method:** OECD Test Guideline 414
  - **Result:** negative

**Deltamethrin (ISO):**

- **Effects on fertility**
  - **Test Type:** Three-generation reproduction toxicity study
  - **Species:** Rat
  - **Application Route:** oral (feed)
  - **Early Embryonic Development:** NOAEL: 50 mg/kg body weight
  - **Symptoms:** No effects on fertility, Embryo-foetal toxicity
  - **Remarks:** Significant toxicity observed in testing

  - **Test Type:** Two-generation reproduction toxicity study
  - **Species:** Rat
  - **Application Route:** Oral
  - **Early Embryonic Development:** LOAEL: 84 - 149 mg/kg body weight
  - **Symptoms:** No effects on fertility, Embryo-foetal toxicity

  - **Test Type:** Fertility
  - **Species:** Rat, male
  - **Application Route:** Oral
  - **Fertility:** LOAEL: 1 mg/kg body weight
  - **Symptoms:** Effects on fertility
  - **Target Organs:** Testes

- **Effects on foetal development**
  - **Test Type:** Development
  - **Species:** Mouse
  - **Application Route:** oral (gavage)
  - **Developmental Toxicity:** LOAEL: 1 mg/kg body weight
  - **Result:** Skeletal malformations
  - **Remarks:** Maternal toxicity observed.

- **Test Type:** Development
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
- **LOAEL:** 500 mg/kg
- **Application Route:** Ingestion
- **Exposure time:** 28 Days

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

- **Species:** Rat
- **NOAEL:** > 1.000 mg/kg
- **Application Route:** Ingestion
- **Exposure time:** 41 - 45 Days
- **Method:** OECD Test Guideline 422

- **Species:** Mouse
- **NOAEL:** 1,62 mg/l
- **Application Route:** Inhalation (vapour)
- **Exposure time:** 2 yr
- **Remarks:** Based on data from similar materials

- **Species:** Rabbit
- **NOAEL:** > 1.838 mg/kg
- **Application Route:** Skin contact
- **Exposure time:** 90 Days
- **Remarks:** Based on data from similar materials

### 2-Methyl-1-propanol:

- **Species:** Rat
- **NOAEL:** > 1.450 mg/kg
- **Application Route:** Ingestion
- **Exposure time:** 90 Days
- **Method:** OECD Test Guideline 408

### Deltamethrin (ISO):

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

- **Species:** Rat
- **LOAEL:** 3 mg/m3
- **Application Route:** Inhalation (dust/mist/fume)
- **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, pruritus, 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:**

**Solvent naphtha (petroleum), light aromatic:**
- **Toxicity to fish:** LC50 (Pimephales promelas (fathead minnow)): 8.2 mg/l
  Exposure time: 96 h
  Test substance: Water Accommodated Fraction

- **Toxicity to daphnia and other aquatic invertebrates:** EL50 (Daphnia magna (Water flea)): 4.5 mg/l
  Exposure time: 48 h
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 202

- **Toxicity to algae/aquatic plants:** EL50 (Pseudokirchneriella subcapitata (microalgae)): 3.1 mg/l
  Exposure time: 96 h
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 201

  NOELR (Pseudokirchneriella subcapitata (microalgae)): 0.5 mg/l
  Exposure time: 96 h
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 201

- **Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):** NOELR: 2.6 mg/l
  Exposure time: 21 d
  Species: Daphnia magna (Water flea)
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 211

**2-Methoxy-1-methylethyl acetate:**
- **Toxicity to fish:** LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 - 180 mg/l
  Exposure time: 96 h
  Method: OECD Test Guideline 203

- **Toxicity to daphnia and other aquatic invertebrates:** EC50 (Daphnia magna (Water flea)): > 500 mg/l
  Exposure time: 48 h

- **Toxicity to algae/aquatic plants:** ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.000 mg/l
  Exposure time: 96 h
  Method: OECD Test Guideline 201

  NOEC (Pseudokirchneriella subcapitata (algae)): > 1.000 mg/l
  Exposure time: 96 h
  Method: OECD Test Guideline 201

- **Toxicity to microorganisms:** EC10: > 1.000 mg/l
  Exposure time: 0.5 h
### Toxicity to Daphnia and Other Aquatic Invertebrates (Chronic Toxicity)

- **Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:**
  - **Toxicity to Fish:**
    - LC50: > 1 - < 10 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

### Toxicity to Algae/Aquatic Plants

- **Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:**
  - 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
  - NOEC (Pseudokirchneriella subcapitata (green algae)): 117 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201

### Toxicity to Fish (Chronic Toxicity)

- **2-Methyl-1-propanol:**
  - LC50 (Pimephales promelas (fathead minnow)): 1.430 mg/l
  - Exposure time: 96 h
  - EC50 (Daphnia pulex (Water flea)): 1.100 mg/l
  - Exposure time: 48 h
  - ErC50 (Pseudokirchneriella subcapitata (green algae)): 1.799 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201
Deltamethrin (5%) Formulation

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 (sheepshead 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):

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):

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
Deltamethrin (5%) Formulation

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

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<td>UN 1993</td>
</tr>
<tr>
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<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>
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</table>

14.2 UN proper shipping name

<p>| | |</p>
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<tbody>
<tr>
<td>ADN</td>
<td>FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, 2-Methoxy-1-methylethyl acetate)</td>
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<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>
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<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>
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
Deltamethrin (5%) Formulation

Environmentally hazardous : yes
IMDG
Marine pollutant : yes

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) : Not applicable
REACH - List of substances subject to authorisation (Annex XIV) : Not applicable
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></td>
<td></td>
<td>100 t</td>
<td>200 t</td>
</tr>
</tbody>
</table>

| P5c | FLAMMABLE LIQUIDS | 5.000 t | 50.000 t |


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

| 34 | 2.500 t | 25.000 t |
properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

Other regulations:
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.
Young people under the age of 18 are not allowed to use or be exposed to the product professionally. Young people above the age of 15 are, however, except from this rule if the product is a necessary part of their education.

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
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>
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<td>4.0</td>
<td>23.03.2020</td>
<td>2334772-00009</td>
<td>13.09.2019</td>
<td>12.12.2017</td>
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<table>
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<tr>
<th>Parameter</th>
<th>Value</th>
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<tr>
<td>Acute Tox.</td>
<td>Acute toxicity</td>
</tr>
<tr>
<td>Aquatic Acute</td>
<td>Short-term (acute) aquatic hazard</td>
</tr>
<tr>
<td>Aquatic Chronic</td>
<td>Long-term (chronic) aquatic hazard</td>
</tr>
<tr>
<td>Asp. Tox.</td>
<td>Aspiration hazard</td>
</tr>
<tr>
<td>Carc.</td>
<td>Carcinogenicity</td>
</tr>
<tr>
<td>Eye Dam.</td>
<td>Serious eye damage</td>
</tr>
<tr>
<td>Eye Irrit.</td>
<td>Eye irritation</td>
</tr>
<tr>
<td>Flam. Liq.</td>
<td>Flammable liquids</td>
</tr>
<tr>
<td>Muta.</td>
<td>Germ cell mutagenicity</td>
</tr>
<tr>
<td>Repr.</td>
<td>Reproductive toxicity</td>
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<tr>
<td>Skin Irrit.</td>
<td>Skin irritation</td>
</tr>
<tr>
<td>Skin Sens.</td>
<td>Skin sensitisation</td>
</tr>
<tr>
<td>STOT RE</td>
<td>Specific target organ toxicity - repeated exposure</td>
</tr>
<tr>
<td>STOT SE</td>
<td>Specific target organ toxicity - single exposure</td>
</tr>
<tr>
<td>FOR-2011-12-06-1358</td>
<td>Norway. Occupational Exposure limits</td>
</tr>
<tr>
<td>2000/39/EC / TWA</td>
<td>Limit Value - eight hours</td>
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<tr>
<td>2000/39/EC / STEL</td>
<td>Short term exposure limit</td>
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<tr>
<td>FOR-2011-12-06-1358 / TWA</td>
<td>Long term exposure limit</td>
</tr>
<tr>
<td>TWA FOR-2011-12-06-1358 / T</td>
<td>Ceiling</td>
</tr>
</tbody>
</table>

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; 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; 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 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; 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; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative
Deltamethrin (5%) Formulation

Version 4.0  Revision Date: 23.03.2020  SDS Number: 2334772-00009  Date of last issue: 13.09.2019  Date of first issue: 12.12.2017

Further information
Sources of key data used to compile the Safety Data Sheet:
- Internal technical data
- Data from raw material SDSs
- OECD eChem Portal search results

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

Classification procedure:
- Flam. Liq. 3: Based on product data or assessment
- Acute Tox. 4: Calculation method
- Skin Irrit. 2: Calculation method
- Eye Dam. 1: Calculation method
- Skin Sens. 1: Calculation method
- Muta. 1B: Calculation method
- Carc. 1B: Calculation method
- Repr. 2: Calculation method
- STOT SE 3: Calculation method
- STOT RE 2: Calculation method
- Asp. Tox. 1: Based on product data or assessment
- Aquatic Acute 1: Calculation method
- Aquatic Chronic 1: Calculation method

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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.

NO / EN