SAFETY DATA SHEET

Deltamethrin (3%) Formulation

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

1.1 Product identifier

Trade name: Deltamethrin (3%) 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
20 Spartan Road
1619 Spartan, South Africa

Telephone: +27119239300

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)

Acute toxicity, Category 4: H302: Harmful if swallowed.
Acute toxicity, Category 4: H332: Harmful if inhaled.
Acute toxicity, Category 4: H312: Harmful in contact with skin.
Skin irritation, Category 2: H315: Causes skin irritation.
Serious eye damage, Category 1: H318: Causes serious eye damage.
Skin sensitisation, Category 1: H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 2: H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure, Category 3: H335: May cause respiratory irritation.
Specific target organ toxicity - repeated exposure, Category 2: H373: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard, Category 1: H304: May be fatal if swallowed and enters airways.

Short-term (acute) aquatic hazard, Category 1: H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1: H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)
Hazard pictograms:

Signal word: Danger

Hazard statements:
H226 Flammable liquid and vapour.
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
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.
H335 May cause respiratory irritation.
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:
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:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
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:
Xylene
Calcium dodecylbenzenesulphonate
Nonylphenol, ethoxylated
deltamethrin (ISO)

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components
# SAFETY DATA SHEET

**Deltamethrin (3%) Formulation**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylenes</td>
<td>1330-20-7, 215-535-7, 601-022-00-9</td>
<td>Flam. Liq. 3; H226 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 STOT RE 2; H373 (Auditory system) Asp. Tox. 1; H304 Aquatic Chronic 3; H412</td>
<td>&gt;= 70 - &lt; 90</td>
</tr>
<tr>
<td>Calcium dodecylbenzenesulphonate</td>
<td>26264-06-2, 247-557-8</td>
<td>Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412</td>
<td>&gt;= 3 - &lt; 10</td>
</tr>
<tr>
<td>Nonylphenol, ethoxylated</td>
<td>9016-45-9</td>
<td>Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Chronic 2; H411</td>
<td>&gt;= 3 - &lt; 10</td>
</tr>
<tr>
<td>Deltamethrin (ISO)</td>
<td>52918-63-5, 258-256-6, 607-319-00-X</td>
<td>Acute Tox. 3; H301 Acute Tox. 3; H331 Skin Sens. 1A; H317 Repr. 2; H361fd STOT SE 3; H335 STOT RE 1; H372 (Central nervous system, Immune system) STOT RE 1; H372 (Central nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 3 - &lt; 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M-Factor (Acute aquatic toxicity): 1.000.000 M-Factor (Chronic aquatic toxicity): 1.000.000</td>
<td></td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>128-37-0, 204-881-4</td>
<td>Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 1 - &lt; 2,5</td>
</tr>
</tbody>
</table>
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, in contact with skin or if inhaled. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. 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
Metal oxides
Sulphur compounds

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 (see section 7) and personal protective equipment recommendations (see section 8).

6.2 Environmental precautions
Environmental precautions: Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil
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. Use explosion-proof electrical, ventilating and lighting equipment.

Advice on safe handling: Do not get on skin or clothing. Do not breathe mist or vapours. Do not swallow. Do not get in eyes. Wash skin thoroughly after handling. 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. Already sensitised individuals should consult their physician regarding working with respiratory irritants or sensitisers. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Do not eat, drink or smoke when using this product. 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 barriers. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. 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, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

### 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

**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>Xylene</td>
<td>1330-20-7</td>
<td>TWA OEL-RL</td>
<td>100 ppm</td>
<td>ZA OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>435 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL OEL-RL</td>
<td>150 ppm</td>
<td>ZA OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>650 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Absorption through the skin, Recommended Limit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Absorption through the skin, Recommended Limit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>TWA</td>
<td>50 ppm</td>
<td>2000/39/EC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>221 mg/m³</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>442 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>TWA</td>
<td>15 µg/m³</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(OEB 3)</td>
<td></td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>STEL</td>
<td>150 µg/100 cm²</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(DSEN, Skin)</td>
<td></td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>Wipe limit</td>
<td>150 µg/100 cm²</td>
<td>Internal</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-</td>
<td>128-37-0</td>
<td>TWA OEL-RL</td>
<td>10 mg/m³</td>
<td>ZA OEL</td>
</tr>
</tbody>
</table>
cresol

Further information: Recommended Limit

### Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Sampling time</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>Methylhippuric acid: 1.5 g/g creatinine (Urine)</td>
<td>End of shift</td>
<td>ZA BEI</td>
</tr>
<tr>
<td>Methylhippuric acid: 2 mg/l (Urine)</td>
<td>Last 4 hours of shift</td>
<td>ZA BEI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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>Xylene</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>221 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>442 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>221 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>442 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>212 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>65,3 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>260 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>65,3 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>260 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>125 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>12,5 mg/kg bw/day</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>3,5 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Dermal</td>
<td>Long-term systemic effects</td>
<td>0,5 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>0,86 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Dermal</td>
<td>Long-term systemic effects</td>
<td>0,25 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>0,25 mg/kg bw/day</td>
</tr>
<tr>
<td>Calcium dodecylbenzenesulphonate</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>52 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>52 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>52 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>52 mg/m³</td>
</tr>
</tbody>
</table>
## SAFETY DATA SHEET

**Deltamethrin (3%) Formulation**

<table>
<thead>
<tr>
<th>Workers</th>
<th>Skin contact</th>
<th>Long-term systemic effects</th>
<th>57.2 mg/kg bw/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers</td>
<td>Skin contact</td>
<td>Acute systemic effects</td>
<td>80 mg/kg bw/day</td>
</tr>
<tr>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term local effects</td>
<td>1.57 mg/kg bw/day</td>
</tr>
<tr>
<td>Workers</td>
<td>Skin contact</td>
<td>Acute local effects</td>
<td>1.57 mg/kg bw/day</td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>26 mg/m³</td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>26 mg/m³</td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>26 mg/m³</td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>26 mg/m³</td>
</tr>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>28.6 mg/kg bw/day</td>
</tr>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td>Acute systemic effects</td>
<td>40 mg/kg bw/day</td>
</tr>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td>Acute local effects</td>
<td>0.787 mg/kg bw/day</td>
</tr>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term local effects</td>
<td>0.787 mg/kg bw/day</td>
</tr>
<tr>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>13 mg/kg bw/day</td>
</tr>
<tr>
<td>Consumers</td>
<td>Ingestion</td>
<td>Acute systemic effects</td>
<td>13 mg/kg bw/day</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>Xylene</td>
<td>Fresh water</td>
<td>0.327 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>0.327 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.327 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>6.58 mg/l</td>
</tr>
<tr>
<td>Fresh water sediment</td>
<td></td>
<td>12.46 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Marine sediment</td>
<td></td>
<td>12.46 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Soil</td>
<td></td>
<td>2.31 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>Fresh water</td>
<td>0.199 µg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>0.02 µg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.02 µg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>0.17 µg/l</td>
</tr>
<tr>
<td>Fresh water sediment</td>
<td></td>
<td>0.0996 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Marine sediment</td>
<td></td>
<td>0.00996 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Soil</td>
<td></td>
<td>0.04769 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Oral (Secondary Poisoning)</td>
<td>Calcium dodecylbenzenesulphonate</td>
<td>8.33 mg/kg food</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td>0.28 mg/l</td>
</tr>
<tr>
<td>Freshwater - intermittent</td>
<td></td>
<td>0.654 mg/l</td>
</tr>
</tbody>
</table>
**SAFETY DATA SHEET**

**Deltamethrin (3%) Formulation**

<table>
<thead>
<tr>
<th>Marine water</th>
<th>0.458 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewage treatment plant</td>
<td>50 mg/l</td>
</tr>
<tr>
<td>Fresh water sediment</td>
<td>27.5 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Marine sediment</td>
<td>2.75 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Air</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Soil</td>
<td>25 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Oral</td>
<td>20 mg/kg food</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.
Use explosion-proof electrical, ventilating and lighting equipment.

**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**
  - **Material**: 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**
  - **Material**: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
  - **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
- **Odour Threshold**: No data available
pH : 4 - 5

Melting point/freezing point : No data available

Initial boiling point and boiling range : No data available

Flash point : 45 - 51 °C

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available

Density : No data available

Solubility(ies)
  Water solubility : soluble

Partition coefficient: n-octanol/water : Not applicable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity
  Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

9.2 Other information

  Flammability (liquids) : No data available

  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, in contact with skin or if inhaled.

Product:
Acute oral toxicity: Acute toxicity estimate: 1.291 mg/kg
Method: Calculation method

Acute inhalation toxicity: Acute toxicity estimate: 11.73 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity: Acute toxicity estimate: 1.347 mg/kg
Method: Calculation method

Components:
Xylene:
Acute oral toxicity: LD50 (Rat): 3.523 mg/kg

Acute inhalation toxicity: Acute toxicity estimate: 11 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Expert judgement
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI
### Acute dermal toxicity
- **Acute toxicity estimate**: 1.100 mg/kg
- **Method**: Expert judgement
- **Remarks**: Based on harmonised classification in EU regulation 1272/2008, Annex VI

### Calcium dodecylbenzenesulphonate:
- **Acute oral toxicity**: LD50 (Rat): > 500 - 2,000 mg/kg
  - **Method**: OECD Test Guideline 401
  - **Remarks**: Based on data from similar materials
- **Acute dermal toxicity**: LD50 (Rabbit): > 2,000 mg/kg
  - **Method**: OECD Test Guideline 402
  - **Remarks**: Based on data from similar materials

### Nonylphenol, ethoxylated:
- **Acute oral toxicity**: LD50 (Rat): 500 - 2,000 mg/kg

### 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

### 2,6-Di-tert-butyl-p-cresol:
- **Acute oral toxicity**: LD50 (Rat): > 6,000 mg/kg
  - **Method**: OECD Test Guideline 401
- **Acute dermal toxicity**: LD50 (Rat): > 2,000 mg/kg
  - **Method**: OECD Test Guideline 402
  - **Assessment**: The substance or mixture has no acute dermal toxicity
<table>
<thead>
<tr>
<th><strong>Skin corrosion/irritation</strong></th>
<th>Causes skin irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Components:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Xylene:</strong></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Result</td>
<td>Skin irritation</td>
</tr>
<tr>
<td><strong>Calcium dodecylbenzenesulphonate:</strong></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 404</td>
</tr>
<tr>
<td>Result</td>
<td>Skin irritation</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
<tr>
<td><strong>Nonylphenol, ethoxylated:</strong></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 404</td>
</tr>
<tr>
<td>Result</td>
<td>No skin irritation</td>
</tr>
<tr>
<td><strong>deltamethrin (ISO):</strong></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Result</td>
<td>No skin irritation</td>
</tr>
<tr>
<td><strong>2,6-Di-tert-butyl-p-cresol:</strong></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 404</td>
</tr>
<tr>
<td>Result</td>
<td>No skin irritation</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
<tr>
<td><strong>Serious eye damage/eye irritation</strong></td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td><strong>Components:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Xylene:</strong></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Result</td>
<td>Irritation to eyes, reversing within 21 days</td>
</tr>
<tr>
<td><strong>Calcium dodecylbenzenesulphonate:</strong></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 405</td>
</tr>
<tr>
<td>Result</td>
<td>Irreversible effects on the eye</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
<tr>
<td><strong>Nonylphenol, ethoxylated:</strong></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 405</td>
</tr>
<tr>
<td>Result</td>
<td>Irreversible effects on the eye</td>
</tr>
</tbody>
</table>
deltamethrin (ISO):
Species: Rabbit
Result: Moderate eye irritation

2,6-Di-tert-butyl-p-cresol:
Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation
Remarks: Based on data from similar materials

Respiratory or skin sensitisation

Skin sensitisation
May cause an allergic skin reaction.

Respiratory sensitisation
Not classified based on available information.

Components:

<table>
<thead>
<tr>
<th>Xylene:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type: Local lymph node assay (LLNA)</td>
</tr>
<tr>
<td>Exposure routes: Skin contact</td>
</tr>
<tr>
<td>Species: Mouse</td>
</tr>
<tr>
<td>Result: negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Calcium dodecylbenzenesulphonate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type: Maximisation Test</td>
</tr>
<tr>
<td>Exposure routes: Skin contact</td>
</tr>
<tr>
<td>Species: Guinea pig</td>
</tr>
<tr>
<td>Method: OECD Test Guideline 406</td>
</tr>
<tr>
<td>Result: negative</td>
</tr>
<tr>
<td>Remarks: Based on data from similar materials</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>deltamethrin (ISO):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type: Maximisation Test</td>
</tr>
<tr>
<td>Exposure routes: Dermal</td>
</tr>
<tr>
<td>Species: Guinea pig</td>
</tr>
<tr>
<td>Result: negative</td>
</tr>
<tr>
<td>Test Type: Human repeat insult patch test (HRIPT)</td>
</tr>
<tr>
<td>Exposure routes: Dermal</td>
</tr>
<tr>
<td>Species: Humans</td>
</tr>
<tr>
<td>Result: positive</td>
</tr>
</tbody>
</table>
2,6-Di-tert-butyl-p-cresol:
Test Type : Human repeat insult patch test (HRIPT)
Exposure routes : Skin contact
Species : Humans
Result : negative

Germ cell mutagenicity
Not classified based on available information.

Components:

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

Test Type: Chromosome aberration test in vitro
Result: negative

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

Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: negative

Calcium dodecylbenzenesulphonate:
Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test
Result: negative
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Nonylphenol, ethoxylated:
<table>
<thead>
<tr>
<th></th>
<th>Test Type</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotoxicity in vitro</td>
<td>Bacterial reverse mutation assay (AMES)</td>
<td>negative</td>
<td>Based on data from similar materials</td>
</tr>
<tr>
<td><strong>deltamethrin (ISO):</strong></td>
<td>DNA Repair</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Test Type: DNA Repair</td>
<td>Test system: Escherichia coli</td>
<td>Result: negative</td>
<td></td>
</tr>
<tr>
<td>Test Type: Chromosomal aberration</td>
<td>Test system: Chinese hamster ovary cells</td>
<td>Result: negative</td>
<td></td>
</tr>
<tr>
<td>Test Type: In vitro mammalian cell gene mutation test</td>
<td>Test system: Chinese hamster lung cells</td>
<td>Concentration: LOAEL: 20 mg/kg</td>
<td>Result: positive</td>
</tr>
<tr>
<td>Genotoxicity in vivo</td>
<td>Micronucleus test</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Species: Mouse</td>
<td>Application Route: Oral</td>
<td>Result: negative</td>
<td></td>
</tr>
<tr>
<td>Test Type: dominant lethal test</td>
<td>Species: Mouse</td>
<td>Application Route: Oral</td>
<td>Result: negative</td>
</tr>
<tr>
<td>Test Type: sister chromatid exchange assay</td>
<td>Species: Mouse</td>
<td>Cell type: Bone marrow</td>
<td>Application Route: Oral</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol:</td>
<td>Bacterial reverse mutation assay (AMES)</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Genotoxicity in vitro</td>
<td></td>
<td>Result: negative</td>
<td></td>
</tr>
<tr>
<td>Test Type: In vitro mammalian cell gene mutation test</td>
<td></td>
<td>Result: negative</td>
<td></td>
</tr>
<tr>
<td>Test Type: Chromosome aberration test in vitro</td>
<td></td>
<td>Result: negative</td>
<td></td>
</tr>
<tr>
<td>Genotoxicity in vivo</td>
<td>Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
<td>Application Route: Ingestion</td>
<td>Result: negative</td>
<td></td>
</tr>
</tbody>
</table>
Carcinogenicity
Not classified based on available information.

Components:

Xylene:
Species: Rat
Application Route: Ingestion
Exposure time: 103 weeks
Result: negative

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

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

2,6-Di-tert-butyl-p-cresol:
Species: Rat
Application Route: Ingestion
Exposure time: 22 Months
Result: negative

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

Components:

Xylene:
Effects on fertility:
Test Type: One-generation reproduction toxicity study
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
Calcium dodecylbenzenesulphonate:
Effects on fertility: Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development: Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials

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.

**2,6-Di-tert-butyl-p-cresol:**

Effects on fertility: Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

Effects on foetal development: Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

**STOT - single exposure**
May cause respiratory irritation.

**Components:**

**Xylene:**
Assessment: May cause respiratory irritation.

**deltamethrin (ISO):**
Assessment: May cause respiratory irritation.

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

**Components:**

**Xylene:**
Exposure routes: inhalation (vapour)
Target Organs: Auditory system
Assessment: Shown to produce significant health effects in animals at concentrations of >0.2 to 1 mg/l/6h/d.

**Calcium dodecylbenzenesulphonate:**
Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

**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

**Assessment:** Causes damage to organs through prolonged or repeated exposure.

### 2,6-Di-tert-butyl-p-cresol:

**Assessment:** No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

### Repeated dose toxicity

#### Components:

**Xylene:**

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOAEL</td>
<td>&gt; 0.2 - 1 mg/l</td>
</tr>
<tr>
<td>Application Route</td>
<td>Inhalation (vapour)</td>
</tr>
<tr>
<td>Exposure time</td>
<td>13 Weeks</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**Calcium dodecylbenzenesulphonate:**

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOAEL</td>
<td>&gt; 200 mg/kg</td>
</tr>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
</tr>
<tr>
<td>Exposure time</td>
<td>6 - 7 Weeks</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 422</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**deltamethrin (ISO):**

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat, male and female</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>1 mg/kg</td>
</tr>
<tr>
<td>LOAEL</td>
<td>2.5 mg/kg</td>
</tr>
<tr>
<td>Application Route</td>
<td>Oral</td>
</tr>
<tr>
<td>Exposure time</td>
<td>13 Weeks</td>
</tr>
<tr>
<td>Target Organs</td>
<td>Nervous system</td>
</tr>
<tr>
<td>Symptoms</td>
<td>Hyperexcitability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOAEL</td>
<td>3 mg/m3</td>
</tr>
<tr>
<td>Application Route</td>
<td>Inhalation (dust/mist/fume)</td>
</tr>
<tr>
<td>Exposure time</td>
<td>2 wk / 5 d/wk / 6 h/d</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Deltamethrin (3%) Formulation

Version 1.1  Revision Date: 12.10.2021  SDS Number: 7730554-00002  Date of last issue: 13.01.2021  Date of first issue: 13.01.2021

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

Symptoms: Dilation of the pupil, Vomiting, Tremors, Diarrhoea, Salivation
Species: Mouse
LOAEL: 6 mg/kg
Application Route: Oral
Exposure time: 12 Weeks
Target Organs: Immune system
Symptoms: Immune system effects

2,6-Di-tert-butyl-p-cresol:
Species: Rat
NOAEL: 25 mg/kg
Application Route: Ingestion
Exposure time: 22 Months

Aspiration toxicity
May be fatal if swallowed and enters airways.

Components:

Xylene:
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.

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:**

**Xylene:**
- Toxity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 13,5 mg/l
  - Exposure time: 96 h

- Toxity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l
  - Exposure time: 24 h
  - Method: OECD Test Guideline 202
  - Remarks: Based on data from similar materials

- Toxity to algae/aquatic plants: EC50 (Skeletonema costatum (marine diatom)): 10 mg/l
  - Exposure time: 72 h

- Toxity to microorganisms: NOEC: > 100 mg/l
  - Exposure time: 3 h
  - Method: OECD Test Guideline 209
  - Remarks: Based on data from similar materials

- Toxity to fish (Chronic toxicity): NOEC: > 0,1 - < 1 mg/l
  - Exposure time: 35 d
  - Species: Danio rerio (zebra fish)
  - Method: OECD Test Guideline 210
  - Remarks: Based on data from similar materials

- Toxity to daphnia and other aquatic invertebrates (Chronic toxicity): EL10: > 1 - 10 mg/l
  - Exposure time: 21 d
  - Species: Daphnia magna (Water flea)
  - Method: OECD Test Guideline 211
  - Remarks: Based on data from similar materials

**Calcium dodecyldibenzenesulphonate:**
- Toxity to fish: LC50 (Leuciscus idus (Golden orfe)): > 1 - 10 mg/l
  - Exposure time: 96 h
  - Remarks: Based on data from similar materials

- Toxity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l
  - Exposure time: 48 h
  - Remarks: Based on data from similar materials

- Toxity to algae/aquatic plants: ErC50 (Pseudokirchneriella subcapitata (green algae)): > 10 - 100 mg/l
  - Exposure time: 72 h
  - Remarks: Based on data from similar materials

  NOEC (Pseudokirchneriella subcapitata (green algae)): > 0,1 - 1 mg/l
  - Exposure time: 72 h
  - Remarks: Based on data from similar materials
### Toxicity to microorganisms

- **EC50** (activated sludge): > 100 mg/l
- Exposure time: 3 h
- Method: OECD Test Guideline 209
- Remarks: Based on data from similar materials

### Toxicity to fish (Chronic toxicity)

- **NOEC**: > 0,1 - 1 mg/l
- Exposure time: 28 d
- Species: Pimephales promelas (fathead minnow)
- Remarks: Based on data from similar materials

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

- **NOEC**: > 1 mg/l
- Exposure time: 21 d
- Species: Daphnia magna (Water flea)
- Remarks: Based on data from similar materials

### Nonylphenol, ethoxylated:

- **EC50** (Daphnia sp. (water flea)): 1,82 mg/l
- Exposure time: 48 h

### 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** (Mysisidopsis bahia (oyster 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

2,6-Di-tert-butyl-p-cresol:
- LC50 (Danio rerio (zebra fish)): > 0.57 mg/l
  - Exposure time: 96 h
- EC50 (Daphnia magna (Water flea)): 0.48 mg/l
  - Exposure time: 48 h
  - Method: OECD Test Guideline 202
- ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0.24 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201
- NOEC (Pseudokirchneriella subcapitata (green algae)): 0.24 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity): 1

Toxicity to microorganisms:
- EC50: > 10.000 mg/l
  - Exposure time: 3 h
  - Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity):
- NOEC: 0.053 mg/l
  - Exposure time: 30 d
  - Species: Oryzias latipes (Japanese medaka)
  - Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
- NOEC: 0.316 mg/l
  - Exposure time: 21 d
  - Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity): 1

12.2 Persistence and degradability

Components:

Xylene:
- Biodegradability: Result: Readily biodegradable.
  - Biodegradation: > 70 %
  - Exposure time: 28 d
  - Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

**Calcium dodecylbenzenesulphonate:**
Biodegradability : Result: Readily biodegradable.  
Remarks: Based on data from similar materials

**Nonylphenol, ethoxylated:**
Biodegradability : Result: Readily biodegradable.  
Biodegradation: 97 %  
Exposure time: 30 d

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

**2,6-Di-tert-butyl-p-cresol:**
Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 4,5 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301C

### 12.3 Bioaccumulative potential

#### Components:

**Xylene:**
Partition coefficient: n-octanol/water : log Pow: 3.16  
Remarks: Calculation

**Calcium dodecylbenzenesulphonate:**
Bioaccumulation : Bioconcentration factor (BCF): < 500  
Remarks: Based on data from similar materials

Partition coefficient: n-octanol/water : log Pow: 4.77  
Remarks: Calculation

**Nonylphenol, ethoxylated:**
Partition coefficient: n-octanol/water : log Pow: 4.48

**deltamethrin (ISO):**
Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Bioconcentration factor (BCF): 1.800

Partition coefficient: n-octanol/water : log Pow: 4.6

**2,6-Di-tert-butyl-p-cresol:**
Bioaccumulation : Species: Cyprinus carpio (Carp)  
Bioconcentration factor (BCF): 330 - 1.800

Partition coefficient: n-octanol/water : log Pow: 5.1
12.4 Mobility in soil

**Components:**

deltamethrin (ISO):
Distribution among environmental compartments: \( \log K_{oc} = 7.2 \)

12.5 Results of PBT and vPvB assessment

**Product:**
Assessment: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**Components:**

Nonylphenol, ethoxylated:
Assessment: This substance is considered to be persistent, bioaccumulating and toxic (PBT). This substance is considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

**Product:**
Endocrine disrupting potential: This substance/mixture contains components considered to have endocrine disrupting properties for environment, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

**Components:**

Nonylphenol, ethoxylated:
Endocrine disrupting potential: The substance is considered to have endocrine disrupting properties according to REACH Article 57(f) for the environment.

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 ex-
pose 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

| ADN | : UN 1993 |
| ADR | : UN 1993 |
| RID | : UN 1993 |
| IMDG | : UN 1993 |
| IATA | : UN 1993 |

14.2 UN proper shipping name

| ADN | : FLAMMABLE LIQUID, N.O.S. (Xylene) |
| ADR | : FLAMMABLE LIQUID, N.O.S. (Xylene) |
| RID | : FLAMMABLE LIQUID, N.O.S. (Xylene) |
| IMDG | : FLAMMABLE LIQUID, N.O.S. (Xylene, deltamethrin (ISO), 2,6-Di-tert-butyl-p-cresol) |
| IATA | : Flammable liquid, n.o.s. (Xylene) |

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 |
SAFETY DATA SHEET

Deltamethrin (3%) Formulation

Version 1.1  Revision Date: 12.10.2021  SDS Number: 7730554-00002  Date of last issue: 13.01.2021

Date of first issue: 13.01.2021

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

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

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.
H302 : Harmful if swallowed.
H304 : May be fatal if swallowed and enters airways.
H312 : Harmful in contact with skin.
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.
H332 : Harmful if inhaled.
H335 : May cause respiratory irritation.
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.
H373 : May cause damage to organs through prolonged or repeated exposure.
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
Acute Tox. : Acute toxicity
Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Asp. Tox. : Aspiration hazard
Eye Dam. : Serious eye damage
Eye Irrit. : Eye irritation
Flam. Liq. : Flammable liquids
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
ZA BEI : South Africa. Hazardous Chemical Substances Regulations, Biological Exposure Indices.
ZA OEL : South Africa. Hazardous Chemical Substances Regulations, Occupational Exposure Limits
**SAFETY DATA SHEET**

**Deltamethrin (3%) Formulation**

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<th>Date of first issue:</th>
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<td>13.01.2021</td>
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<th>Code</th>
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<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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<td>ZA OEL / TWA OEL-RL</td>
<td>Long term occupational exposure limits - recommended limit</td>
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<tr>
<td>ZA OEL / STEL OEL-RL</td>
<td>Short term occupational exposure limits - recommended limit</td>
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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; AIIC - Australian Inventory of Industrial Chemicals; 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; IC50 - 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; TECI - Thailand Existing Chemicals 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

**Further information**


**Classification of the mixture:**

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<tr>
<th>Flam. Liq.</th>
<th>Acute Tox. 4</th>
<th>Acute Tox. 4</th>
<th>Acute Tox. 4</th>
<th>Skin Irrit. 2</th>
<th>Eye Dam. 1</th>
<th>Skin Sens. 1</th>
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<td>H302</td>
<td>H332</td>
<td>H315</td>
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**Classification procedure:**

- Based on product data or assessment
- Calculation method
- Calculation method
- Calculation method
- Calculation method
- Calculation method
- Calculation method

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<table>
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<tr>
<td>STOT RE 2</td>
<td>H373</td>
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<td>Asp. Tox. 1</td>
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<td>Aquatic Acute 1</td>
<td>H400</td>
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</tr>
<tr>
<td>Aquatic Chronic 1</td>
<td>H410</td>
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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.

ZA / EN