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

1.1 Product identifier
   Trade name: Deltamethrin (with Xylene) 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
   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)

- Acute toxicity, Category 4: H302: Harmful if swallowed.
- Acute toxicity, Category 4: H332: Harmful if inhaled.
- Skin irritation, Category 2: H315: Causes skin irritation.
- Eye irritation, Category 2: H319: Causes serious eye irritation.
- Skin sensitisation, Category 1: H317: May cause an allergic skin reaction.
- Germ cell mutagenicity, Category 1B: H340: May cause genetic defects.
- Carcinogenicity, Category 1B: H350: May cause cancer.
- 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.
Section 2: Hazard Communication

### 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008)**

**Hazard pictograms:**
- Flammable liquid/vapour
- Dust explosion
- Infection hazard
- Poisoning

**Signal word:** Danger

**Hazard statements:**
- H226 Flammable liquid and vapour.
- H302 + H332 Harmful if swallowed or if inhaled.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- 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:**
- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P391 Collect spillage.

Hazardous components which must be listed on the label:
- Ethylbenzene
- Xylene
- Deltamethrin (ISO)
- Solvent naphtha (petroleum), light aromatic

**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

**Components**
<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>Flam. Liq.; H225 Acute Tox.4; H332 STOT RE2; H373 Asp. Tox.1; H304 Aquatic Chronic3; H412</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
<tr>
<td></td>
<td>202-849-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>601-023-00-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>Flam. Liq.; H226 Acute Tox.4; H332 Acute Tox.4; H312 Skin Irrit.2; H315 Eye Irrit.2; H319 STOT SE3; H335 STOT RE2; H373 Asp. Tox.1; H304 Aquatic Chronic3; H412</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
<tr>
<td></td>
<td>215-535-7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>601-022-00-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-Nonylphenol, branched, ethoxylated</td>
<td>127087-87-0</td>
<td>Aquatic Chronic3; H412</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
<tr>
<td>Deltamethrin (ISO)</td>
<td>52918-63-5</td>
<td>Acute Tox.3; H301 Acute Tox.3; H331 Eye Irrit.2; H319 Skin Sens.1A; H317 Repr.2; H361fd STOT SE3; H335 STOT RE1; H372 STOT RE1; H372 Aquatic Acute1; H400 Aquatic Chronic1; H410</td>
<td>&gt;= 3 - &lt; 10</td>
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<tr>
<td></td>
<td>258-256-6</td>
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<td>607-319-00-X</td>
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<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>128-37-0</td>
<td>Aquatic Acute1; H400 Aquatic Chronic1; H410</td>
<td>&gt;= 2,5 - &lt; 10</td>
</tr>
<tr>
<td></td>
<td>204-881-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6</td>
<td>Flam. Liq.3; H226 Skin Irrit.2; H315 Muta.1B; H340 Carc.1B; H350</td>
<td>&gt;= 0,25 - &lt; 1</td>
</tr>
<tr>
<td></td>
<td>265-199-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>649-356-00-4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Deltamethrin (with Xylene) Formulation

Version 2.2  Revision Date: 09/13/2019  SDS Number: 2972466-00005  Date of last issue: 24.04.2019  Date of first issue: 02.07.2018

<table>
<thead>
<tr>
<th>STOT SE; H336 Asp. Tox.1; H304 Aquatic Chronic2; H411</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
</tr>
<tr>
<td>67-56-1 200-659-6 603-001-00-X 01-2119433307-44</td>
</tr>
<tr>
<td>Flam. Liq.2; H225 Acute Tox.3; H301 Acute Tox.3; H331 Acute Tox.3; H311 STOT SE1; H370</td>
</tr>
<tr>
<td>&gt;= 0,1 - &lt; 1</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. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. 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.

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 or if inhaled. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation. 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

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 cannot be contained.

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. Already sensitised individuals should consult their physician regarding working with respiratory irritants or sensitisers. 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...
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, 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: 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

<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>Ethylbenzene</td>
<td>100-41-4</td>
<td>TWA OEL-RL</td>
<td>100 ppm 435 mg/m³</td>
<td>ZA OEL</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>STEL OEL-RL</td>
<td>125 ppm 545 mg/m³</td>
<td>ZA OEL</td>
</tr>
</tbody>
</table>

Further information: Recommended Limit

<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>Ethylbenzene</td>
<td>100-41-4</td>
<td>TWA</td>
<td>100 ppm 442 mg/m³</td>
<td>2000/39/EC</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>STEL</td>
<td>200 ppm 884 mg/m³</td>
<td>2000/39/EC</td>
</tr>
</tbody>
</table>

Further information: Absorption through the skin, Recommended Limit
SAFETY DATA SHEET

Deltamethrin (with Xylene) Formulation

Version 2.2  Revision Date: 09/13/2019  SDS Number: 2972466-00005  Date of last issue: 24.04.2019

TWA OEL-RL 100 ppm 435 mg/m³  ZA OEL

Further information Absorption through the skin, Recommended Limit

TWA 50 ppm 221 mg/m³  2000/39/EC

STEL 100 ppm 442 mg/m³  2000/39/EC

Deltamethrin (ISO) 52918-63-5  TWA 15 µg/m³ (OEB 3)  Internal

Further information DSEN, Skin

Wipe limit 150 µg/100 cm²  Internal

2,6-Di-tert-butyl-p-cresol 128-37-0  TWA OEL-RL 10 mg/m³  ZA OEL

Further information Recommended Limit

Methanol 67-56-1  TWA OEL-RL 200 ppm 260 mg/m³  ZA OEL

Further information Absorption through the skin, Recommended Limit

STEL OEL-RL 250 ppm 310 mg/m³  ZA OEL

Further information Absorption through the skin, Recommended Limit

TWA 200 ppm 260 mg/m³  2006/15/EC

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>Ethylbenzene</td>
<td>100-41-4</td>
<td>Ethyl benzene: (end exhaled air)</td>
<td>End of shift at end of workweek</td>
<td>ZA BEI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mandelic acid: 1.5 g/g creatinine (Urine)</td>
<td>End of shift at end of workweek</td>
<td>ZA BEI</td>
</tr>
<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></td>
<td></td>
<td>Methylhippuric acid: 2 mg/l (Urine)</td>
<td>Last 4 hours of shift</td>
<td>ZA BEI</td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>Methanol: 15 mg/l (Urine)</td>
<td>End of shift</td>
<td>ZA BEI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Formic acid: 80 mg/g Creatinine (Urine)</td>
<td>Prior to last shift of workweek</td>
<td>ZA BEI</td>
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</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>Ethylbenzene</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>77 mg/m³</td>
</tr>
<tr>
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<td>Workers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>293 mg/m³</td>
</tr>
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<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>180 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>1,6 mg/kg bw/day</td>
</tr>
<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>---------</td>
<td>------------------</td>
<td>----------------------------</td>
<td>-----------</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>
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<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>
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<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>65,3 mg/m³</td>
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</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>260 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>65,3 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>260 mg/m³</td>
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</tr>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>125 mg/kg bw/day</td>
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<td>12,5 mg/kg bw/day</td>
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<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
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<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>3,5 mg/m³</td>
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<tr>
<td></td>
<td>Workers</td>
<td>Dermal</td>
<td>Long-term systemic effects</td>
<td>0,5 mg/kg bw/day</td>
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<tr>
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<td>Inhalation</td>
<td>Long-term systemic effects</td>
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<tr>
<td>Consumers</td>
<td>Dermal</td>
<td>Long-term systemic effects</td>
<td>0,25 mg/kg bw/day</td>
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<tr>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
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<tr>
<td>Methanol</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>260 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>260 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>260 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>260 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>40 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Acute systemic effects</td>
<td>40 mg/kg bw/day</td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>50 mg/m³</td>
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<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>50 mg/m³</td>
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</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>50 mg/m³</td>
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<tr>
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<td>Inhalation</td>
<td>Acute local effects</td>
<td>50 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>8 mg/kg bw/day</td>
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<td>Skin contact</td>
<td>Acute systemic effects</td>
<td>8 mg/kg bw/day</td>
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<tr>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>8 mg/kg bw/day</td>
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</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>Ethylbenzene</td>
<td>Fresh water</td>
<td>0.1 mg/l</td>
</tr>
<tr>
<td></td>
<td>Freshwater - intermittent</td>
<td>0.1 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.01 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>9.6 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>13.7 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>1.37 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>2.68 mg/kg dry weight (d.w.)</td>
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<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></td>
<td>Fresh water sediment</td>
<td>12.46 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>12.46 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</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 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>0.0996 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.00996 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.04769 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Methanol</td>
<td>Oral (Secondary Poisoning)</td>
<td>8.33 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.

**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.
- **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**: clear yellow
- **Odour**: No data available
- **Odour Threshold**: No data available
- **pH**: No data available
- **Melting point/freezing point**: No data available
- **Initial boiling point and boiling range**: No data available
- **Flash point**: 38 °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
SAFETY DATA SHEET

Deltamethrin (with Xylene) Formulation

Version 2.2 Revision Date: 09/13/2019 SDS Number: 2972466-00005 Date of last issue: 24.04.2019

Date of first issue: 02.07.2018

Vapour pressure: No data available
Relative vapour density: No data available
Relative density: No data available
Density: No data available
Solubility(ies)
  Water solubility: No data available
  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): 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 or if inhaled.

**Product:**

- **Acute oral toxicity**
  - Acute toxicity estimate: 1.314 mg/kg
  - Method: Calculation method

- **Acute inhalation toxicity**
  - Acute toxicity estimate: 13.69 mg/l
  - Exposure time: 4 h
  - Test atmosphere: vapour
  - Method: Calculation method

- **Acute dermal toxicity**
  - Acute toxicity estimate: > 2.000 mg/kg
  - Method: Calculation method

**Components:**

**Ethylbenzene:**

- **Acute oral toxicity**
  - LD50 (Rat): 3.500 mg/kg

- **Acute inhalation toxicity**
  - LC50 (Rat): 17.8 mg/l
  - Exposure time: 4 h
  - Test atmosphere: vapour

- **Acute dermal toxicity**
  - LD50 (Rabbit): > 5.000 mg/kg

**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

**4-Nonylphenol, branched, ethoxylated:**

- **Acute oral toxicity**
  - LD50 (Mouse): 4.290 mg/kg
Deltamethrin (with Xylene) Formulation

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

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

Methanol:
Acute oral toxicity : Acute toxicity estimate (Humans): 300 mg/kg
Method: Expert judgement

Acute inhalation toxicity : Acute toxicity estimate: 3 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 (Humans): 300 mg/kg
**SAFETY DATA SHEET**

**Deltamethrin (with Xylene) Formulation**

Method: Expert judgement

### Skin corrosion/irritation

Causes skin irritation.

**Components:**

**Xylene:**
- Species: Rabbit
- Result: Skin irritation

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

**2,6-Di-tert-butyl-p-cresol:**
- Species: Rabbit
- Method: OECD Test Guideline 404
- Result: No skin irritation
- Remarks: Based on data from similar materials

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

**Methanol:**
- Species: Rabbit
- Result: No skin irritation

### Serious eye damage/eye irritation

Causes serious eye irritation.

**Components:**

**Xylene:**
- Species: Rabbit
- Result: Irritation to eyes, reversing within 21 days

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

Methanol:
Species : Rabbit
Result : No eye irritation

Respiratory or skin sensitisation

Skin sensitisation
May cause an allergic skin reaction.

Respiratory sensitisation
Not classified based on available information.

Components:

Xylene:
Test Type : Local lymph node assay (LLNA)
Exposure routes : Skin contact
Species : Mouse
Result : negative

Deltamethrin (ISO):
Test Type : Maximisation Test
Exposure routes : Dermal
Species : Guinea pig
Result : negative

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

2,6-Di-tert-butyl-p-cresol:
Test Type : Human repeat insult patch test (HRIPT)
Exposure routes : Skin contact
Species : Humans
Result : negative

Solvent naphtha (petroleum), light aromatic:
Test Type : Buehler Test
Exposure routes : Skin contact
Species : Guinea pig
Result : negative

Methanol:
Test Type : Maximisation Test
Exposure routes : Skin contact
Germ cell mutagenicity
May cause genetic defects.

Components:

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

Genotoxicity in vivo :
  Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo
  Species: Mouse
  Application Route: Inhalation
  Method: OECD Test Guideline 486
  Result: negative

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

Genotoxicity in vivo :
  Test Type: Rodent dominant lethal test (germ cell) (in vivo)
  Species: Mouse
  Application Route: Skin contact
  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

2,6-Di-tert-butyl-p-cresol:  
Genotoxicity in vitro  
: Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

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

Test Type: Chromosome aberration test in vitro  
Result: negative

Genotoxicity in vivo  
: Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Rat  
Application Route: Ingestion  
Result: negative

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

**Methanol:**
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

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: Intraperitoneal injection
Result: negative

**Carcinogenicity**
May cause cancer.

**Components:**

**Ethylbenzene:**
Species: Rat
Application Route: Inhalation (vapour)
Exposure time: 104 weeks
Result: positive
Remarks: The mechanism or mode of action may not be relevant in humans.

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

Species: Dog, male and female
Application Route: Oral (feed)
### 2,6-Di-tert-butyl-p-cresol:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
</tr>
<tr>
<td>Exposure time</td>
<td>22 Months</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Species</th>
<th>Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Exposure time</td>
<td>2 Years</td>
</tr>
<tr>
<td>Result</td>
<td>positive</td>
</tr>
</tbody>
</table>

Carcinogenicity - Assessment: Sufficient evidence of carcinogenicity in animal experiments

### Methanol:

<table>
<thead>
<tr>
<th>Species</th>
<th>Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>inhalation (vapour)</td>
</tr>
<tr>
<td>Exposure time</td>
<td>18 Months</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

### Reproductive toxicity

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

### Components:

**Ethylbenzene:**

- **Effects on fertility:** Test Type: Two-generation reproduction toxicity study  
  Species: Rat  
  Application Route: inhalation (vapour)  
  Method: OECD Test Guideline 416  
  Result: negative

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

**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
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

**Solvent naphtha (petroleum), light aromatic:**
Results on fertility:
- Test Type: Reproduction/Developmental toxicity screening test
- Species: Rat
- Application Route: inhalation (vapour)
- Result: negative

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

**Methanol:**
Results on fertility:
- Test Type: Fertility/early embryonic development
- Species: Mouse
- Application Route: Ingestion
- Result: negative

Results on foetal development:
- Test Type: Embryo-foetal development
- Species: Mouse
- Application Route: Ingestion
- Result: positive
- Remarks: The effects were seen only at maternally toxic doses.

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

**Components:**

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

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

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

**Methanol:**
Target Organs: Eye, Central nervous system
Assessment: Causes damage to organs.

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

Ethylbenzene:
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.

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.

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.

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:

Ethylbenzene:
Species : Rat
LOAEL : 0.868 mg/l
Application Route : inhalation (vapour)
Exposure time : 13 Weeks

Species : Rat
NOAEL : 75 mg/kg
LOAEL : 250 mg/kg
Application Route : Ingestion
Method : OECD Test Guideline 408

Xylene:
Species : Rat
LOAEL : > 0.2 - 1 mg/l
Application Route : inhalation (vapour)
Exposure time : 13 Weeks
Remarks : Based on data from similar materials
### SAFETY DATA SHEET

**Deltamethrin (with Xylene) 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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<tr>
<td>2.2</td>
<td>09/13/2019</td>
<td>2972466-00005</td>
<td>24.04.2019</td>
<td>02.07.2018</td>
</tr>
</tbody>
</table>

- **Species**: Rat
- **LOAEL**: 150 mg/kg
- **Application Route**: Ingestion
- **Exposure time**: 90 Days

#### 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

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

- **Species**: Rat
- **NOAEL**: 25 mg/kg
- **Application Route**: Ingestion
- **Exposure time**: 22 Months

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

- **Species**: Rat
- **LOAEL**: 500 mg/kg
Application Route: Ingestion
Exposure time: 28 Days

**Methanol:**
Species: Rat
NOAEL: 1.06 mg/l
Application Route: Inhalation (vapour)
Exposure time: 90 Days

**Aspiration toxicity**
May be fatal if swallowed and enters airways.

**Components:**
**Ethylbenzene:**
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.

**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.

**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.

**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:**

**Ethylbenzene:**
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 1.8 - 2.4 mg/l
Exposure time: 48 h
Toxicity to algae/aquatic plants: EC50 (Pseudokirchneriella subcapitata (green algae)): 3.6 mg/l
Exposure time: 96 h

NOEC (Pseudokirchneriella subcapitata (green algae)): 3.4 mg/l
Exposure time: 96 h

Toxicity to microorganisms: EC50 (Nitrosomonas sp.): 96 mg/l
Exposure time: 24 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC: 0.96 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia (water flea)

Xylene:
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 13.5 mg/l
Exposure time: 96 h

Toxicity 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

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

Toxicity to microorganisms: NOEC: > 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: 35 d
Species: Danio rerio (zebra fish)
Method: OECD Test Guideline 210
Remarks: Based on data from similar materials

Toxicity 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

4-Nonylphenol, branched, ethoxylated:
Toxicity to fish: LC50: 44 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50: 68 mg/l
Exposure time: 48 h

Deltamethrin (ISO):
<table>
<thead>
<tr>
<th>Toxicity category</th>
<th>Description</th>
<th>Concentration/Time Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Toxicity to fish</strong></td>
<td>LC50 (Cyprinodon variegatus (sheepshead minnow)): 0,00048 mg/l; Exposure time: 96 h</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50 (Oncorhynchus mykiss (rainbow trout)): 0,00039 mg/l; Exposure time: 96 h</td>
<td></td>
</tr>
<tr>
<td><strong>Toxicity to daphnia and other aquatic invertebrates</strong></td>
<td>EC50 (Mysisopsis bahia (opossum shrimp)): 0,0037 µg/l; Exposure time: 48 h</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EC50 (Daphnia magna (Water flea)): 0,0035 mg/l; Exposure time: 48 h</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50 (Gammarus fasciatus (freshwater shrimp)): 0,0003 µg/l; Exposure time: 96 h</td>
<td></td>
</tr>
<tr>
<td><strong>Toxicity to algae/aquatic plants</strong></td>
<td>EC50 (Pseudokirchneriella subcapitata (green algae)): &gt; 9,1 mg/l; Exposure time: 72 h; Method: OECD Test Guideline 201; Remarks: No toxicity at the limit of solubility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOEC (Pimephales promelas (fathead minnow)): 0,000022 mg/l; Exposure time: 36 d</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOEC (Pimephales promelas (fathead minnow)): 0,000017 mg/l; Exposure time: 260 d</td>
<td></td>
</tr>
<tr>
<td><strong>2,6-Di-tert-butyl-p-cresol:</strong></td>
<td>NOEC: 0,0041 µg/l; Exposure time: 21 d; Species: Daphnia magna (Water flea)</td>
<td></td>
</tr>
<tr>
<td><strong>M-Factor (Acute aquatic toxicity)</strong></td>
<td>1.000.000</td>
<td></td>
</tr>
<tr>
<td><strong>M-Factor (Chronic aquatic toxicity)</strong></td>
<td>1.000.000</td>
<td></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
Deltamethrin (with Xylene) Formulation

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

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

Methanol:

Toxicity to fish: LC50 (Lepomis macrochirus (Bluegill sunfish)): 15.400 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): > 10.000 mg/l
aquatic invertebrates: Exposure time: 48 h

Toxicity to algae/aquatic plants:
EC50 (Pseudokirchneriella subcapitata (green algae)): 22.000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

Toxicity to microorganisms:
IC50: > 1.000 mg/l
Exposure time: 3 h

Toxicity to fish (Chronic toxicity):
NOEC: 15.800 mg/l
Exposure time: 200 h
Species: Oryzias latipes (Orange-red killifish)

### 12.2 Persistence and degradability

**Components:**

**Ethylbenzene:**

Biodegradability: Result: Readily biodegradable.
Biodegradation: 70 - 80 %
Exposure time: 28 d

**Xylene:**

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

**4-Nonylphenol, branched, ethoxylated:**

Biodegradability: Result: Not readily biodegradable.

**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

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

Biodegradability: Result: Inherently biodegradable.
Biodegradation: 94 %
Exposure time: 25 d

**Methanol:**

Biodegradability: Result: Readily biodegradable.
Biodegradation: 95 %
12.3 Bioaccumulative potential

Components:

Ethylbenzene:
Partition coefficient: n-octanol/water : log Pow: 3,6

Xylene:
Partition coefficient: n-octanol/water : log Pow: 3,16
Remarks: Calculation

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

Methanol:
Bioaccumulation : Species: Leuciscus idus (Golden orfe)
Bioconcentration factor (BCF): < 10
Partition coefficient: n-octanol/water : log Pow: -0,77

12.4 Mobility in soil

Components:

Deltamethrin (ISO):
Distribution among environmental compartments : log Koc: 7,2

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.
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

| ADN | : UN 1992 |
| ADR | : UN 1992 |
| RID | : UN 1992 |
| IMDG| : UN 1992 |
| IATA| : UN 1992 |

14.2 UN proper shipping name

| ADN  | : FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethylbenzene, Xylene) |
| ADR  | : FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethylbenzene, Xylene) |
| RID  | : FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethylbenzene, Xylene) |
| IMDG | : FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethylbenzene, Xylene, Deltamethrin (ISO)) |
| IATA | : Flammable liquid, toxic, n.o.s. (Ethylbenzene, 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** | : FT1 |
| **Hazard Identification Number** | : 36 |
| **Labels** | : 3 (6.1) |

| ADR  |
|      |
| **Packing group** | : III |
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**Deltamethrin (with Xylene) Formulation**

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue</th>
<th>Date of first issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2</td>
<td>09/13/2019</td>
<td>2972466-00005</td>
<td>24.04.2019</td>
<td>02.07.2018</td>
</tr>
</tbody>
</table>

- **Classification Code**: FT1
- **Hazard Identification Number**: 36
- **Labels**: 3 (6.1)
- **Tunnel restriction code**: (D/E)

**RID**
- **Packing group**: III
- **Classification Code**: FT1
- **Hazard Identification Number**: 36
- **Labels**: 3 (6.1)

**IMDG**
- **Packing group**: III
- **Labels**: 3 (6.1)
- **EmS Code**: F-E, S-D

**IATA (Cargo)**
- **Packing instruction (cargo aircraft)**: 366
- **Packing instruction (LQ)**: Y343
- **Packing group**: III
- **Labels**: Flammable Liquids, Toxic

**IATA (Passenger)**
- **Packing instruction (passenger aircraft)**: 355
- **Packing instruction (LQ)**: Y343
- **Packing group**: III
- **Labels**: Flammable Liquids, Toxic

## 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.
SAFETY DATA SHEET
Deltamethrin (with Xylene) Formulation

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:

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AICS</td>
<td>not determined</td>
</tr>
<tr>
<td>DSL</td>
<td>not determined</td>
</tr>
<tr>
<td>IECSC</td>
<td>not determined</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>H-Statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapour.</td>
</tr>
<tr>
<td>H226</td>
<td>Flammable liquid and vapour.</td>
</tr>
<tr>
<td>H301</td>
<td>Toxic if swallowed.</td>
</tr>
<tr>
<td>H304</td>
<td>May be fatal if swallowed and enters airways.</td>
</tr>
<tr>
<td>H311</td>
<td>Toxic in contact with skin.</td>
</tr>
<tr>
<td>H312</td>
<td>Harmful in contact with skin.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>H331</td>
<td>Toxic if inhaled.</td>
</tr>
<tr>
<td>H332</td>
<td>Harmful if inhaled.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>H336</td>
<td>May cause drowsiness or dizziness.</td>
</tr>
<tr>
<td>H340</td>
<td>May cause genetic defects.</td>
</tr>
<tr>
<td>H350</td>
<td>May cause cancer.</td>
</tr>
<tr>
<td>H361fd</td>
<td>Suspected of damaging fertility. Suspected of damaging the unborn child.</td>
</tr>
<tr>
<td>H370</td>
<td>Causes damage to organs.</td>
</tr>
<tr>
<td>H372</td>
<td>Causes damage to organs through prolonged or repeated exposure if swallowed.</td>
</tr>
<tr>
<td>H372</td>
<td>Causes damage to organs through prolonged or repeated exposure if inhaled.</td>
</tr>
<tr>
<td>H373</td>
<td>May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>H412</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

Full text of other abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox.</td>
<td>Acute toxicity</td>
</tr>
</tbody>
</table>
Deltamethrin (with Xylene) Formulation

<table>
<thead>
<tr>
<th>Version</th>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<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 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>
</tr>
<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>2006/15/EC</td>
<td>Europe. Indicative occupational exposure limit values</td>
</tr>
<tr>
<td>ZA OEL</td>
<td>South Africa. Hazardous Chemical Substances Regulations, Biological Exposure Indices.</td>
</tr>
<tr>
<td>ZA OEL / TWA</td>
<td>South Africa. Hazardous Chemical Substances Regulations, Occupational Exposure Limits</td>
</tr>
<tr>
<td>2000/39/EC / TWA</td>
<td>Limit Value - eight hours</td>
</tr>
<tr>
<td>2000/39/EC / STEL</td>
<td>Short term exposure limit</td>
</tr>
<tr>
<td>2006/15/EC / TWA</td>
<td>Limit Value - eight hours</td>
</tr>
<tr>
<td>ZA OEL / TWA OEL-RL</td>
<td>Long term occupational exposure limits - recommended limit</td>
</tr>
<tr>
<td>ZA OEL / STEL OEL-RL</td>
<td>Short term occupational exposure limits - recommended limit</td>
</tr>
</tbody>
</table>

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Road; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; 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 Organization 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; 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
Sources of key data used to compile the Safety Data Sheet:

Classification of the mixture:

<table>
<thead>
<tr>
<th>Property</th>
<th>Code</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 3</td>
<td>H226</td>
<td>Based on product data or assessment</td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td>H302</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td>H332</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>H315</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Eye Irrit. 2</td>
<td>H319</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
<td>H317</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Muta. 1B</td>
<td>H340</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Carc. 1B</td>
<td>H350</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Repr. 2</td>
<td>H361fd</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>H335</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT RE 2</td>
<td>H373</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Asp. Tox. 1</td>
<td>H304</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Acute 1</td>
<td>H400</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 1</td>
<td>H410</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

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