SAFETY DATA SHEET

Deltamethrin (5%) Formulation

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

1.1 Product identifier

Trade name : Deltamethrin (5%) Formulation

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Veterinary product

1.3 Details of the supplier of the safety data sheet

Company : MSD
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.
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.
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 : H336: May cause drowsiness or dizziness.
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:

- Flammable liquid and vapour
- Inflammable
- Health hazard
- Exclamation mark
- Environmental hazard

Signal word: Danger

Hazard statements:

- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H336 May cause drowsiness or dizziness.
- H340 May cause genetic defects.
- H350 May cause cancer.
- H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention:

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

Response:

- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
- P391 Collect spillage.

Hazardous components which must be listed on the label:

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

Additional Labelling:

Restricted to professional users.

2.3 Other hazards

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

3.2 Mixtures

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No. EC-No. Index-No. Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6 265-199-0 649-356-00-4</td>
<td>Flam. Liq.3; H226 Skin Irrit.2; H315 Muta.1B; H340 Carc.1B; H350 STOT SE3; H336 Asp. Tox.1; H304 Aquatic Chronic2; H411</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
<tr>
<td>Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts</td>
<td>Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts</td>
<td>Not Assigned 271-529-4</td>
<td>Skin Irrit.2; H315 Eye Dam.1; H318 Aquatic Chronic3; H412</td>
<td>&gt;= 3 - &lt; 10</td>
</tr>
<tr>
<td>2-Methyl-1-propanol</td>
<td>2-Methyl-1-propanol</td>
<td>78-83-1 201-148-0 603-108-00-1</td>
<td>Flam. Liq.3; H226 Skin Irrit.2; H315 Eye Dam.1; H318 Aquatic Chronic3; STOT SE3; H336 STOT SE3; H335</td>
<td>&gt;= 3 - &lt; 10</td>
</tr>
<tr>
<td>Deltamethrin (ISO)</td>
<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 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>
</tr>
</tbody>
</table>

Substances with a workplace exposure limit:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No. EC-No. Index-No. Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methoxy-1-methylethyl acetate</td>
<td>108-65-6 203-603-9 607-195-00-7</td>
<td>Flam. Liq.3; H226 STOT SE3; H336</td>
<td>&gt;= 20 - &lt; 30</td>
</tr>
</tbody>
</table>

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

4.1 Description of first aid measures

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

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

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

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

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

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

4.2 Most important symptoms and effects, both acute and delayed

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

4.3 Indication of any immediate medical attention and special treatment needed

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

5.1 Extinguishing media

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

Unsuitable extinguishing media:
- High volume water jet

5.2 Special hazards arising from the substance or mixture

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

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

5.3 Advice for firefighters

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

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

Environmental precautions:
- Discharge into the environment must be avoided.
- Prevent further leakage or spillage if safe to do so.
- Prevent spreading over a wide area (e.g. by containment or oil barriers).
- Retain and dispose of contaminated wash water.
- Local authorities should be advised if significant spillages 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. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures: If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.
SAFETY DATA SHEET

Deltamethrin (5%) Formulation

Version: 3.2  Revision Date: 09/13/2019  SDS Number: 2333307-00008  Date of last issue: 24.04.2019  Date of first issue: 12.12.2017

7.2 Conditions for safe storage, including any incompatibilities
Requirements for storage areas and containers: Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.
Advice on common storage: Do not store with the following product types:
Strong oxidizing agents
Organic peroxides
Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures, which in contact with water, emit flammable gases
Explosives
Gases

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methoxy-1-methylethyl acetate</td>
<td>108-65-6</td>
<td>TWA</td>
<td>50 ppm 275 mg/m3</td>
<td>2000/39/EC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>100 ppm 550 mg/m3</td>
<td>2000/39/EC</td>
</tr>
<tr>
<td>2-Methyl-1-propanol</td>
<td>78-83-1</td>
<td>TWA OEL-RL</td>
<td>50 ppm 150 mg/m3</td>
<td>ZA OEL</td>
</tr>
</tbody>
</table>

Further information
Recommended Limit
STEL OEL-RL | 75 ppm 225 mg/m3 | ZA OEL |

Further information
Recommended Limit
Deltamethrin (ISO) | 52918-63-5 | TWA | 15 µg/m3 (OEB 3) | Internal |

Further information
DSEN, Skin
Wipe limit | 150 µg/100 cm² | Internal |

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

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-1-propanol</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>310 mg/m3</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>55 mg/m3</td>
</tr>
<tr>
<td>Benzenesulfonic acid,</td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic</td>
<td>1.7 mg/kg</td>
</tr>
</tbody>
</table>
### C10-13-alkyl derivs., calcium salts

<table>
<thead>
<tr>
<th></th>
<th>Effects</th>
<th>bw/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td>2-Methoxy-1-methylethyl acetate</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-1-propanol</td>
<td>Fresh water</td>
<td>0.4 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.04 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>11 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>10 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>1.56 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.156 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.076 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts</td>
<td>Fresh water</td>
<td>0.023 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.002 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>3 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>0.174 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.017 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.62 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>2-Methoxy-1-methylethyl acetate</td>
<td>Fresh water</td>
<td>0.635 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.0635 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>6.35 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>100 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>3.29 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.329 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.29 mg/kg dry weight (d.w.)</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**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>3 - 5</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>45 - 51 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
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: 0.963 - 0.967 g/cm³
Solubility(ies)
Water solubility: completely miscible
Partition coefficient: n-octanol/water: No data available
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.

Product:
- Acute oral toxicity: Acute toxicity estimate: 1.334 mg/kg
  Method: Calculation method

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

Components:

Solvent naphtha (petroleum), light aromatic:
- Acute oral toxicity: LD50 (Rat): > 5.000 mg/kg
- Acute inhalation toxicity: LC50 (Rat): > 5.61 mg/l
  Exposure time: 4 h
  Test atmosphere: vapour

- Acute dermal toxicity: LD50 (Rabbit): > 2.000 mg/kg

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:
- Acute oral toxicity: LD50 (Rat): 4.445 mg/kg

- Acute dermal toxicity: LD50 (Rat): > 2.000 mg/kg
  Method: OECD Test Guideline 402
  Remarks: Based on data from similar materials

2-Methyl-1-propanol:
- Acute oral toxicity: LD50 (Rat): 3.350 mg/kg
  Method: OECD Test Guideline 401

- Acute inhalation toxicity: LC50 (Rat): > 24.6 mg/l
  Exposure time: 4 h
  Test atmosphere: vapour
Acute dermal toxicity: LD50 (Rabbit): 2.460 mg/kg  
Method: OECD Test Guideline 402

### Deltamethrin (ISO):

**Acute oral toxicity**: LD50 (Rat): 66.7 mg/kg
LD50 (Rat): 9 - 139 mg/kg
LD50 (Mouse): 19 - 34 mg/kg

**Acute inhalation toxicity**: LC50 (Rat): 0.8 mg/l
Exposure time: 2 h
Test atmosphere: dust/mist

**Acute dermal toxicity**: LD50 (Rabbit): 2.000 mg/kg
LD50 (Rat): > 800 mg/kg

**Acute toxicity (other routes of administration)**: LD50 (Rat): 2.5 mg/kg
Application Route: Intravenous
LD50 (Mouse): 10 mg/kg
Application Route: Intraperitoneal

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

**Acute oral toxicity**: LD50 (Rat): > 5.000 mg/kg

**Acute inhalation toxicity**: LC0 (Rat): 9.48 mg/l
Exposure time: 4 h
Test atmosphere: vapour

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

### Skin corrosion/irritation
Causes skin irritation.

### Components:

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

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

**2-Methyl-1-propanol:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: Skin irritation
**Deltamethrin (ISO):**
Species: Rabbit
Result: No skin irritation

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

**Serious eye damage/eye irritation**
Causes serious eye damage.

**Components:**

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

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

**2-Methyl-1-propanol:**
Species: Rabbit
Method: OECD Test Guideline 405
Result: Irreversible effects on the eye

**Deltamethrin (ISO):**
Species: Rabbit
Result: Moderate eye irritation

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

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

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:
Test Type: Magnusson-Kligman-Test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Remarks: Based on data from similar materials

2-Methyl-1-propanol:
Test Type: Maximisation Test
Exposure routes: Skin contact
Species: Guinea pig
Result: negative
Remarks: Based on data from similar materials

Deltamethrin (ISO):
Test Type: Maximisation Test
Exposure routes: Dermal
Species: Guinea pig
Result: negative
Test Type: Human repeat insult patch test (HRIPT)
Exposure routes: Dermal
Species: Humans
Result: positive

2-Methoxy-1-methylethyl acetate:
Test Type: Maximisation Test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Germ cell mutagenicity
May cause genetic defects.

Components:

Solvent naphtha (petroleum), light aromatic:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Test Type: In vitro mammalian cell gene mutation test Result: positive
Genotoxicity in vivo: Test Type: Sister chromatid exchange analysis in spermatogonia Species: Mouse Application Route: Intraperitoneal injection Result: positive
Germ cell mutagenicity: Assessment

Positive result(s) from in vivo heritable germ cell mutagenicity tests in mammals

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

Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on data from similar materials

2-Methyl-1-propanol:

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

Test Type: Chromosome aberration test in vitro
Result: negative

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

Genotoxicity in vivo:

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

**Deltamethrin (ISO):**

Genotoxicity in vitro:

Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

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

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

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

Genotoxicity in vivo:

Test Type: Micronucleus test
Species: Mouse
Application Route: Oral
Result: negative

Test Type: dominant lethal test
Species: Mouse
Application Route: Oral
Result: negative
**SAFETY DATA SHEET**

**Deltamethrin (5%) Formulation**

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

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

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

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

**Carcinogenicity**

May cause cancer.

**Components:**

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

| Species  | Mouse  
| Application Route  | Skin contact  
| Exposure time  | 2 Years  
| Result  | positive  
| Carcinogenicity - Assessment  | Sufficient evidence of carcinogenicity in animal experiments

**Deltamethrin (ISO):**

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

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

| Species  | Dog, male and female  
| Application Route  | oral (feed)  
| Exposure time  | 2 Years  
| LOAEL  | 1 mg/kg body weight  
| Result  | negative
2-Methoxy-1-methylethyl acetate:
Species: Rat
Application Route: inhalation (vapour)
Exposure time: 2 Years
Result: negative
Remarks: Based on data from similar materials

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

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

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

2-Methyl-1-propanol:
Effects on fertility:
- Test Type: Two-generation reproduction toxicity study
  - Species: Rat
  - Application Route: inhalation (vapour)
  - Method: OPPTS 870.3800
  - Result: negative

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

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

Test Type: Two-generation reproduction toxicity study
- Species: Rat
- Application Route: Oral
- Early Embryonic Development: LOAEL: 84 - 149 mg/kg body weight
- Symptoms: No effects on fertility, Embryo-foetal toxicity
Test Type: Fertility  
Species: Rat, male  
Application Route: Oral  
Fertility: LOAEL: 1 mg/kg body weight  
Symptoms: Effects on fertility  
Target Organs: Testes

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

Test Type: Development  
Species: Rat, female  
Developmental Toxicity: NOAEL: 10 mg/kg body weight  
Symptoms: No effects on foetal development

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

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

2-Methoxy-1-methylethyl acetate:  
Effects on fertility:  
Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapour)  
Method: OECD Test Guideline 416  
Result: negative  
Remarks: Based on data from similar materials

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

STOT - single exposure  
May cause drowsiness or dizziness.

Components:

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

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

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

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

Components:

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

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

Repeated dose toxicity

Components:

Solvent naphtha (petroleum), light aromatic:
Species : Rat
LOAEL : 500 mg/kg
Application Route : Ingestion
Exposure time : 28 Days

2-Methyl-1-propanol:
Species : Rat
NOAEL : > 1.450 mg/kg
Application Route : Ingestion
Exposure time : 90 Days
Method : OECD Test Guideline 408

Deltamethrin (ISO):
Species : Rat, male and female
NOAEL : 1 mg/kg
LOAEL : 2,5 mg/kg
Application Route : Oral
Exposure time : 13 Weeks
Target Organs : Nervous system
Symptoms : hyperexcitability

Species : Rat
LOAEL : 3 mg/m3
Application Route : inhalation (dust/mist/fume)
Test atmosphere : dust/mist
Exposure time: 2 wk / 5 d/wk / 6 h/d
Symptoms: Local irritation, respiratory tract irritation

Species: Dog
NOAEL: 0.1 mg/kg
LOAEL: 1 mg/kg
Application Route: Oral
Exposure time: 13 Weeks
Target Organs: Nervous system
Symptoms: Dilatation of the pupil, Vomiting, Tremors, Diarrhoea, Salivation

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

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

2-Methoxy-1-methylethyl acetate:
Species: Rat
NOAEL: > 1.000 mg/kg
Application Route: Ingestion
Exposure time: 41 - 45 Days
Method: OECD Test Guideline 422

Species: Mouse
NOAEL: 1.62 mg/l
Application Route: inhalation (vapour)
Exposure time: 2 yr
Remarks: Based on data from similar materials

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

Aspiration toxicity
May be fatal if swallowed and enters airways.

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

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

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

Experience with human exposure

Components:

Deltamethrin (ISO):
Inhalation: Symptoms: respiratory tract irritation, Dizziness, Sweating, Headache, Nausea, Vomiting, anorexia, Fatigue, tingling, Palpitation, Blurred vision, muscle twitching
Skin contact: Symptoms: Skin irritation, Erythema, pruritis, Headache, Nausea, Vomiting, Dizziness, tingling, Sweating, muscle twitching, Blurred vision, Fatigue, anorexia, Allergic reactions
Ingestion: Symptoms: muscle pain, Small pupils

SECTION 12: Ecological information

12.1 Toxicity

Components:

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
SAFETY DATA SHEET

Deltamethrin (5%) Formulation

Method: OECD Test Guideline 211

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

**Toxicity to fish**
- LC50: > 1 - < 10 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 203

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

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

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

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**
- NOEC: 1.18 mg/l
- Exposure time: 21 d
- Species: Daphnia magna (Water flea)
- Remarks: Based on data from similar materials

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

**Toxicity to fish**
- LC50 (Pimephales promelas (fathead minnow)): 1.430 mg/l
- Exposure time: 96 h

**Toxicity to daphnia and other aquatic invertebrates**
- EC50 (Daphnia pulex (Water flea)): 1.100 mg/l
- Exposure time: 48 h

**Toxicity to algae/aquatic plants**
- ErC50 (Pseudokirchneriella subcapitata (green algae)): 1.799 mg/l
- Exposure time: 72 h
- Method: OECD Test Guideline 201
- NOEC (Pseudokirchneriella subcapitata (green algae)): 117 mg/l
- Exposure time: 72 h
- Method: OECD Test Guideline 201

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**
- NOEC: 20 mg/l
- Exposure time: 21 d
- Species: Daphnia magna (Water flea)
Deltamethrin (ISO):

Toxicity to fish:
- LC50 (Cyprinodon variegatus (sheepshead minnow)): 0.00048 mg/l
  Exposure time: 96 h
- LC50 (Oncorhynchus mykiss (rainbow trout)): 0.00039 mg/l
  Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:
- EC50 (Mysisopsis bahia (opossum shrimp)): 0.0037 µg/l
  Exposure time: 48 h
- EC50 (Daphnia magna (Water flea)): 0.0035 mg/l
  Exposure time: 48 h
- LC50 (Gammarus fasciatus (freshwater shrimp)): 0.0003 µg/l
  Exposure time: 96 h

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

M-Factor (Acute aquatic toxicity):
- 1.000.000

Toxicity to fish (Chronic toxicity):
- NOEC: 0.000022 mg/l
  Exposure time: 36 d
  Species: Pimephales promelas (fathead minnow)
- NOEC: 0.000017 mg/l
  Exposure time: 260 d
  Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
- NOEC: 0.0041 µg/l
  Exposure time: 21 d
  Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity):
- 1.000.000

2-Methoxy-1-methylethyl acetate:

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

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

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

Components:

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

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

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

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

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

12.3 Bioaccumulative potential

Components:

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

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

**Deltamethrin (ISO):**

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

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

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

### 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.
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

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

### SECTION 14: Transport information

#### 14.1 UN number

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

#### 14.2 UN proper shipping name
Deltamethrin (5%) Formulation

ADN: FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, 2-Methoxy-1-methylethyl acetate)

ADR: FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, 2-Methoxy-1-methylethyl acetate)

RID: FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, 2-Methoxy-1-methylethyl acetate)

IMDG: FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, 2-Methoxy-1-methylethyl acetate, Deltamethrin (ISO))

IATA: Flammable liquid, n.o.s. (Solvent naphtha (petroleum), light aromatic, 2-Methoxy-1-methylethyl acetate)

14.3 Transport hazard class(es)

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<th>RID</th>
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14.4 Packing group

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<td>Classification Code: F1</td>
<td>Classification Code: F1</td>
<td>Classification Code: F-E, S-E</td>
<td>Packing instruction (LQ): Y344</td>
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<td>Tunnel restriction code: (D/E)</td>
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Deltamethrin (5%) Formulation

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.
SAFETY DATA SHEET
Deltamethrin (5%) Formulation

Version 3.2
Revision Date: 09/13/2019
SDS Number: 2333307-00008
Date of last issue: 24.04.2019
Date of first issue: 12.12.2017

H301: Toxic if swallowed.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H321: Toxic if inhaled.
H331: Toxic if inhaled.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H340: May cause genetic defects.
H350: May cause cancer.
H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
H372: Causes damage to organs through prolonged or repeated exposure if inhaled.
H373: Causes damage to organs through prolonged or repeated exposure if swallowed.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.
H411: Toxic to aquatic life with long lasting effects.
H412: Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.: Acute toxicity
Aquatic Acute: Short-term (acute) aquatic hazard
Aquatic Chronic: Long-term (chronic) aquatic hazard
Asp. Tox.: Aspiration hazard
Carc.: Carcinogenicity
Eye Dam.: Serious eye damage
Eye Irrit.: Eye irritation
Flam. Liq.: Flammable liquids
Muta.: Germ cell mutagenicity
Repr.: Reproductive toxicity
Skin Irrit.: Skin irritation
Skin Sens.: Skin sensitisation
STOT RE: Specific target organ toxicity - repeated exposure
STOT SE: Specific target organ toxicity - single exposure
ZA OEL: South Africa. Hazardous Chemical Substances Regulations, Occupational Exposure Limits
2000/39/EC / TWA: Limit Value - eight hours
2000/39/EC / STEL: Short term exposure limit
ZA OEL / TWA OEL-RL: Long term occupational exposure limits - recommended limit
ZA OEL / STEL OEL-RL: Short term occupational exposure limits - recommended limit

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

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<td>STOT SE 3</td>
<td>H336</td>
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<td>STOT RE 2</td>
<td>H373</td>
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<td>Asp. Tox. 1</td>
<td>H304</td>
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<td>H400</td>
</tr>
<tr>
<td>Aquatic Chronic 1</td>
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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.

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