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

Deltamethrin (2.5%) Formulation

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

1.1 Product identifier
   Trade name: Deltamethrin (2.5%) Formulation

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

1.3 Details of the supplier of the safety data sheet
   Company: MSD
   Shotton Lane
   NE23 3JU Cramlington NU - Great Britain
   Telephone: 44 1 670 59 30 00
   Telefax: 908-735-1496
   E-mail address of person responsible for the SDS: EHSDATASTEWARD@msd.com

1.4 Emergency telephone number
   1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification (REGULATION (EC) No 1272/2008)
   Flammable liquids, Category 3
   H226: Flammable liquid and vapour.
   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
   H361: Suspected of damaging fertility or 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.
Deltamethrin (2.5%) Formulation

Version: 2.3  
Revision Date: 23.03.2020  
SDS Number: 2656223-00006  
Date of last issue: 13.09.2019  
Date of first issue: 29.03.2018

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms:
- Flammable (H226)
- Health hazard (H304)
- Skin irritation (H315)
- Skin irritation (H317)
- Eye damage (H318)
- Drowsiness (H336)
- Genetic defects (H340)
- Cancer (H350)
- Genetic defects (H361)
- Damage to organs (H373)
- Toxic to aquatic life (H410)

Signal word: Danger

Hazard statements:
- Flammable liquid and vapour (H226)
- May be fatal if swallowed and enters airways (H304)
- Causes skin irritation (H315)
- May cause an allergic skin reaction (H317)
- Causes serious eye damage (H318)
- May cause drowsiness or dizziness (H336)
- May cause skin irritation (H317)
- May cause serious eye damage (H318)
- May cause skin irritation (H317)
- May cause skin irritation (H317)
- May cause damage to organs through prolonged or repeated exposure (H373)
- Very toxic to aquatic life (H410)

Precautionary statements:

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

Response:
- 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 (P305 + P351 + P338 + P310)
- Collect spillage (P391)

Hazardous components which must be listed on the label:
- Solvent naphtha (petroleum), light aromatic
- Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts
- 4-Nonylphenol, branched, ethoxylated
- Deltamethrin (ISO)

Additional Labelling:
- Restricted to professional users.

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

### 3.2 Mixtures

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6 265-199-0 649-356-00-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Flam. Liq. 3; H226 Skin Irrit. 2; H315 Muta. 1B; H340 Carc. 1B; H350 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411</td>
<td>&gt;= 50 - &lt; 70</td>
</tr>
<tr>
<td>Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts</td>
<td>Not Assigned 271-529-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412</td>
<td>&gt;= 3 - &lt; 10</td>
</tr>
<tr>
<td>4-Nonylphenol, branched, ethoxylated</td>
<td>127087-87-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Repr. 2; H361 Aquatic Chronic 2; H411</td>
<td>&gt;= 3 - &lt; 10</td>
</tr>
<tr>
<td>Deltamethrin (ISO)</td>
<td>52918-63-5 258-256-6 607-319-00-X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 3; H301 Acute Tox. 3; H331 Eye Irrit. 2; H319 Skin Sens. 1A; H317 Repr. 2; H361fd STOT SE 3; H335 STOT RE 1; H372 STOT RE 1; H372 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 2.5 - &lt; 3</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>128-37-0 204-881-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 1 - &lt; 2.5</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: 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 or the unborn child. May cause damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

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

5.1 Extinguishing media

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

Unsuitable extinguishing media:
- High volume water jet

5.2 Special hazards arising from the substance or mixture

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

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

5.3 Advice for firefighters

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

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

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

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

6.4 Reference to other sections
See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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

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

Advice on safe handling:
Do not eat, drink or smoke.
Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures:
If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.
The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures,
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Deltamethrin (2.5%) Formulation

**Version**: 2.3 **Revision Date**: 23.03.2020

**SDS Number**: 2656223-00006 **Date of last issue**: 13.09.2019

**Date of first issue**: 29.03.2018

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

**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>Deltamethrin (ISO)</td>
<td>52918-63-5</td>
<td>TWA</td>
<td>15 µg/m³ (OEL 3)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Further information: DSEN, Skin</td>
<td></td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>128-37-0</td>
<td>OELV - 8 hrs (TWA)</td>
<td>2 mg/m³</td>
<td>IE OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Further information: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit value should be used</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>3.5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Dermal</td>
<td>Long-term systemic effects</td>
<td>0.5 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>0.86 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Dermal</td>
<td>Long-term systemic effects</td>
<td>0.25 mg/kg bw/day</td>
</tr>
</tbody>
</table>
## Deltamethrin (2.5%) Formulation

### 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>2,6-Di-tert-butyl-p-cresol</td>
<td>Fresh water</td>
<td>0.199 µg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>0.02 µg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.02 µg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>0.17 µg/l</td>
</tr>
<tr>
<td></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></td>
<td>Oral (Secondary Poisoning)</td>
<td>8.33 mg/kg food</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>Polyethylene glycol castor oil</td>
<td>Fresh water</td>
<td>0.000 µg/l</td>
</tr>
<tr>
<td></td>
<td>Freshwater - intermittent</td>
<td>66.1 µg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.000 µg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water - intermittent</td>
<td>6.61 µg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>0.0129 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.00129 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.00258 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.
- Equipment should conform to I.S. EN 14387

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance: liquid
- Colour: yellow
- Odour: No data available
- Odour Threshold: No data available
- pH: 4 - 5
- Melting point/freezing point: < -5 °C
- Initial boiling point and boiling range: No data available
- Flash point: 40 °C
- Evaporation rate: No data available
**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**
Deltamethrin (2.5%) Formulation

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
Not classified based on available information.

Product:
Acute oral toxicity : Acute toxicity estimate: > 2,000 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

4-Nonylphenol, branched, ethoxylated:
Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Deltamethrin (ISO):

Conditions to avoid : Heat, flames and sparks.
Deltamethrin (2.5%) Formulation

**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

**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

**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

**4-Nonylphenol, branched, ethoxylated:**
- Species: Rabbit
- Method: OECD Test Guideline 404
- Result: No skin irritation
- Remarks: Based on data from similar materials

**Deltamethrin (ISO):**
Deltamethrin (2.5%) Formulation

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

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

4-Nonylphenol, branched, ethoxylated:
Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation
Remarks: Based on data from similar materials

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

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

Respiratory or skin sensitisation

Skin sensitisation
May cause an allergic skin reaction.

Respiratory sensitisation
Not classified based on available information.
Components:

Solvent naphtha (petroleum), light aromatic:
Test Type: Buehler Test
Exposure routes: Skin contact
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

4-Nonylphenol, branched, ethoxylated:
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

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

Germ cell mutagenicity
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
Deltamethrin (2.5%) Formulation

Genotoxicity in vivo:
- Test Type: Sister chromatid exchange analysis in spermatagonia
- 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

4-Nonylphenol, branched, ethoxylated:
- Genotoxicity in vitro:
  - Test Type: Bacterial reverse mutation assay (AMES)
    - Method: OECD Test Guideline 471
    - Result: negative
    - Remarks: Based on data from similar materials
  - Test Type: Chromosome aberration test in vitro
    - Method: OECD Test Guideline 473
    - Result: negative
    - Remarks: Based on data from similar materials
  - Test Type: In vitro mammalian cell gene mutation test
    - Method: OECD Test Guideline 476
    - Result: negative
    - Remarks: Based on data from similar materials

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
Deltamethrin (2.5%) Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue</th>
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<tbody>
<tr>
<td>2.3</td>
<td>23.03.2020</td>
<td>2656223-00006</td>
<td>13.09.2019</td>
<td>29.03.2018</td>
</tr>
</tbody>
</table>

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

Carcinogenicity  
May cause cancer.

Components:

Solvent naphtha (petroleum), light aromatic:

<table>
<thead>
<tr>
<th>Species</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>Result</th>
<th>Carcinogenicity - Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouse</td>
<td>Skin contact</td>
<td>2 Years</td>
<td></td>
<td>Sufficient evidence of carcinogenicity in animal experiments</td>
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</table>

Deltamethrin (ISO):

<table>
<thead>
<tr>
<th>Species</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>NOAEL</th>
<th>LOAEL</th>
<th>Result</th>
<th>Target Organs</th>
<th>Species</th>
<th>Application Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouse, male and female</td>
<td>oral (feed)</td>
<td>104 weeks</td>
<td>8 mg/kg body weight</td>
<td>4 mg/kg body weight</td>
<td>positive</td>
<td>Lymph nodes</td>
<td>Rat, male and female</td>
<td>oral (feed)</td>
</tr>
</tbody>
</table>
Exposure time: 2 Years  
Result: negative  
Species: Dog, male and female  
Application Route: oral (feed)  
Exposure time: 2 Years  
NOAEL: 1 mg/kg body weight  
Result: negative  

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

Reproductive toxicity  
Suspected of damaging fertility or 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  

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

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

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

Effects on foetal development

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

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

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

Reproductive toxicity - Assessment

Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

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

Effects on fertility

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

Effects on foetal development

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

STOT - single exposure

May cause drowsiness or dizziness.

Components:

Solvent naphtha (petroleum), light aromatic:

Assessment: May cause drowsiness or dizziness.

Deltamethrin (ISO):

Assessment: May cause respiratory irritation.
STOT - repeated exposure
May cause damage to organs through prolonged or repeated exposure.

Components:

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

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

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:

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

4-Nonylphenol, branched, ethoxylated:
- Species: Rat
- LOAEL: 150 mg/kg
- Application Route: Ingestion
- Exposure time: 90 Days
- Method: OPPTS 870.3100
- Remarks: Based on data from similar materials

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
Deltamethrin (2.5%) Formulation

Symptoms: Local irritation, respiratory tract irritation

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

Species: Rat
NOAEL: 14 mg/kg
LOAEL: 54 mg/kg
Application Route: Oral
Exposure time: 91 d
Target Organs: Nervous system
Symptoms: Dilatation of the pupil, Vomiting, Tremors, Diarrhoea, Salivation

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

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

Aspiration toxicity
May be fatal if swallowed and enters airways.

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.

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
Deltamethrin (2.5%) Formulation

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
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)):
- **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**: Oncorhyncus 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

### 4-Nonylphenol, branched, ethoxylated:
- **Toxicity to fish**
  - **LC50** (Oryzias latipes (Orange-red killfish)): 8.2 mg/l
  - **Exposure time**: 96 h

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

- **Toxicity to Daphnia and Other Aquatic Invertebrates**
  - **EC50** (Mysidopsis bahia (oossum 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)
- **Value**: 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)
Deltamethrin (2.5%) Formulation

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

- NOEC: 0.0041 µg/l
  - Exposure time: 21 d
  - Species: Daphnia magna (Water flea)
- EC50: 0.48 mg/l
  - Exposure time: 48 h
  - Method: OECD Test Guideline 202

M-Factor (Chronic aquatic toxicity): 1,000,000

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

- LC50 (Danio rerio (zebra fish)): > 0.57 mg/l
  - Exposure time: 96 h

Toxicity to algae/aquatic plants:

- ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0.24 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201
  - NOEC (Pseudokirchneriella subcapitata (green algae)): 0.24 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity): 1

Toxicity to microorganisms:

- EC50: > 10,000 mg/l
  - Exposure time: 3 h
  - Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity):

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

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

- NOEC: 0.316 mg/l
  - Exposure time: 21 d
  - Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity): 1

12.2 Persistence and degradability

Components:

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

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

12.3 Bioaccumulative potential

Components:
苯甲酸苯磺酸酯酸，C10-13-alkyl derivs., calcium salts:
Partition coefficient: n-octanol/water: log Pow: 2.89

4-Nonylphenol, branched, ethoxylated:
Bioaccumulation: Species: Fish
   Bioconcentration factor (BCF): < 100
   Remarks: Based on data from similar materials

Deltamethrin (ISO):
Bioaccumulation: Species: Lepomis macrochirus (Bluegill sunfish)
   Bioconcentration factor (BCF): 1,800

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

2,6-Di-tert-butyl-p-cresol:
Bioaccumulation: Species: Cyprinus carpio (Carp)
   Bioconcentration factor (BCF): 330 - 1,800

Partition coefficient: n-octanol/water: log Pow: 5.1

12.4 Mobility in soil

Components:
Deltamethrin (ISO):
Distribution among environmental compartments: log 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

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<table>
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<tr>
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<td>UN 3295</td>
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<td>IATA</td>
<td>UN 3295</td>
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14.2 UN proper shipping name

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<tr>
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<tr>
<td>ADN</td>
<td>HYDROCARBONS, LIQUID, N.O.S.</td>
</tr>
<tr>
<td>ADR</td>
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<td>RID</td>
<td>HYDROCARBONS, LIQUID, N.O.S.</td>
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<tr>
<td>IMDG</td>
<td>HYDROCARBONS, LIQUID, N.O.S. (Deltamethrin (ISO), 2,6-Di-tert-butyl-p-cresol)</td>
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<tr>
<td>IATA</td>
<td>Hydrocarbons, liquid, n.o.s.</td>
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14.3 Transport hazard class(es)

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<tbody>
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<td>IMDG</td>
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<td>IATA</td>
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Deltamethrin (2.5%) Formulation

Version: 2.3  Revision Date: 23.03.2020  SDS Number: 2656223-00006  Date of last issue: 13.09.2019  Date of first issue: 29.03.2018

14.4 Packing group

<table>
<thead>
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<th>Packing group</th>
<th>Classification Code</th>
<th>Hazard Identification Number</th>
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<td>ADR</td>
<td>III</td>
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<td>(D/E)</td>
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<td>III</td>
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14.5 Environmental hazards

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<td>IMDG</td>
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</tbody>
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14.6 Special precautions for user

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

Remarks: Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)

Conditions of restriction for the following entries should be considered:
Number on list 3
4-Nonylphenol, branched, ethoxylated (Number on list 46b, 46a.)
Solvent naphtha (petroleum), light aromatic (Number on list 29, 28)

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

: 4-Nonylphenol, branched, ethoxylated

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

: 4-Nonylphenol, branched, ethoxylated

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer

: Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast)

: Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

: 4-Nonylphenol, branched, ethoxylated


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<th>Quantity 1</th>
<th>Quantity 2</th>
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<td>100 t</td>
<td>200 t</td>
</tr>
<tr>
<td>P5c</td>
<td>FLAMMABLE LIQUIDS</td>
<td>5,000 t</td>
<td>50,000 t</td>
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<td>34</td>
<td>Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams), (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)</td>
<td>2,500 t</td>
<td>25,000 t</td>
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Other regulations:
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations,
where applicable.
Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

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

SECTION 16: Other information

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

Full text of H-statements
H226: Flammable liquid and vapour.
H301: Toxic if swallowed.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H331: Toxic if inhaled.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H340: May cause genetic defects.
H350: May cause cancer.
H361: Suspected of damaging fertility or the unborn child.
H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
H372: Causes damage to organs through prolonged or repeated exposure if inhaled.
H372: Causes damage to organs through prolonged or repeated exposure if swallowed.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.
H411: Toxic to aquatic life with long lasting effects.
H412: Harmful to aquatic life with long lasting effects.

Full text of other abbreviations
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
Deltamethrin (2.5%) Formulation

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**SAFETY DATA SHEET**

according to Regulation (EC) No. 1907/2006

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### Version

<table>
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<th>SDS Number:</th>
<th>Date of first issue:</th>
<th>Date of last issue:</th>
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<td>2656223-00006</td>
<td>29.03.2018</td>
<td>13.09.2019</td>
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<td>Germ cell mutagenicity</td>
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<td>Reproductive toxicity</td>
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<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>IE OEL</td>
<td>Ireland. List of Chemical Agents and Occupational Exposure Limit Values - Schedule 1</td>
</tr>
<tr>
<td>IE OEL / OELV - 8 hrs (TWA)</td>
<td>Occupational exposure limit value (8-hour reference period)</td>
</tr>
</tbody>
</table>

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ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; 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; DSD - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with % response; ELx - Loading rate associated with % response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with % 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

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**Further information**


**Classification of the mixture:**

| Flam. Liq. 3 | H226 |
| Skin Irrit. 2 | H315 |

**Classification procedure:**

Based on product data or assessment

Calculation method

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### Deltamethrin (2.5%) Formulation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Code</th>
<th>Calculation Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Dam. 1</td>
<td>H318</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>
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<td>Carc. 1B</td>
<td>H350</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Repr. 2</td>
<td>H361</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>H336</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT RE 2</td>
<td>H373</td>
<td>Calculation method</td>
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<tr>
<td>Asp. Tox. 1</td>
<td>H304</td>
<td>Based on product data or assessment</td>
</tr>
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<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.

IE / EN