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

1.1 Product identifier
   Trade name: Deltamethrin Pour-On 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
   Walton Manor, Walton
   MK7 7AJ Milton Keynes - United Kingdom
   Telephone: 908-740-4000
   Telefax: 908-735-1496
   E-mail address of person responsible for the SDS: EHSDATAWIELD@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)
   Skin sensitisation, Category 1: H317: May cause an allergic skin reaction.
   Short-term (acute) aquatic hazard, Category 1: H400: Very toxic to aquatic life.
   Long-term (chronic) aquatic hazard, Category 1: H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements
   Labelling (REGULATION (EC) No 1272/2008)
   Hazard pictograms:
   Signal word: Warning
   Hazard statements:
   H317: May cause an allergic skin reaction.
   H410: Very toxic to aquatic life with long lasting effects.
   Precautionary statements:
   Prevention:
P272  Contaminated work clothing should not be allowed out of the workplace.  
P273  Avoid release to the environment.  
P280  Wear protective gloves.  

**Response:**  
P333 + P313  If skin irritation or rash occurs: Get medical advice/attention.  
P362 + P364  Take off contaminated clothing and wash it before reuse.  
P391  Collect spillage.  

Hazardous components which must be listed on the label:  
Deltamethrin (ISO)  
Formaldehyde

### 2.3 Other hazards
None known.

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

**Components**

<table>
<thead>
<tr>
<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>Deltamethrin (ISO)</td>
<td>52918-63-5</td>
<td>258-256-6</td>
<td>607-319-00-X</td>
<td></td>
<td>Acute Tox. 3; H301</td>
<td>&gt;= 0.25 - &lt; 1</td>
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<tr>
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<td>Acute Tox. 3; H331</td>
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<td>Eye Irrit. 2; H319</td>
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<td></td>
<td>Skin Sens. 1A; H317</td>
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<td>Repr. 2; H361fd</td>
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<td>STOT SE 3; H335</td>
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<td>STOT RE 1; H372</td>
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<td>Aquatic Acute 1; H400</td>
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<td>Aquatic Chronic 1; H410</td>
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<td></td>
<td>M-Factor (Acute aquatic toxicity): 1,000,000</td>
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<td>M-Factor (Chronic aquatic toxicity): 1,000,000</td>
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<td>50-00-0</td>
<td>200-001-8</td>
<td>605-001-00-5</td>
<td>01-2119488953-20</td>
<td>Flam. Gas 1; H220</td>
<td>&lt; 0.1</td>
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<td>Acute Tox. 2; H330</td>
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<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1; H318</td>
<td></td>
</tr>
</tbody>
</table>
 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 soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

In case of eye contact: Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.

If swallowed: If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

Risks: May cause an allergic skin reaction.

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: None known.

5.2 Special hazards arising from the substance or mixture
Specific hazards during firefighting: Exposure to combustion products may be a hazard to health.
Hazardous combustion products: Carbon 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: 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: Soak up with inert absorbent material. 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.
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: Use only with adequate ventilation. Avoid inhalation of vapour or mist.

Advice on safe handling:
- Do not get on skin or clothing.
- Avoid inhalation of vapour or mist.
- Do not swallow.
- Avoid contact with eyes.
- Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.
- 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.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:
- Keep in properly labelled containers. Store in accordance with the particular national regulations.

Advice on common storage:
- Do not store with the following product types:
  - Strong oxidizing agents

7.3 Specific end use(s)

Specific use(s):
- No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
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<tbody>
<tr>
<td>Propylene glycol</td>
<td>57-55-6</td>
<td>TWA (particles)</td>
<td>10 mg/m3</td>
<td>GB EH40</td>
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<tr>
<td>Further information</td>
<td></td>
<td>TWA (Total va-)</td>
<td>150 ppm</td>
<td>GB EH40</td>
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</table>
Deltamethrin Pour-On Formulation

<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>Propylene glycol</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>168 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>50 mg/m³</td>
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<tr>
<td>Formaldehyde</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>9 mg/m³</td>
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<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>240 mg/kg bw/day</td>
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<tr>
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<td>Workers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
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<td>Inhalation</td>
<td>Long-term systemic effects</td>
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<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>102 mg/kg bw/day</td>
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<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>4.1 mg/kg bw/day</td>
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<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term local effects</td>
<td>0.037 mg/cm²</td>
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<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>0.1 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term local effects</td>
<td>0.012 mg/cm²</td>
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</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>Propylene glycol</td>
<td>Fresh water</td>
<td>260 mg/l</td>
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<tr>
<td></td>
<td>Marine water</td>
<td>26 mg/l</td>
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<tr>
<td></td>
<td>Intermittent use/release</td>
<td>183 mg/l</td>
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<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>20000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>572 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>57.2 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>50 mg/kg</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.

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: Particulates type (P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: Aqueous solution, suspension
Colour: white
Odour: No data available
Odour Threshold: No data available
pH: No data available
Melting point/freezing point: No data available
Deltamethrin Pour-On Formulation

Initial boiling point and boiling range: No data available
Flash point: No data available
Evaporation rate: No data available
Flammability (solid, gas): Not applicable
Upper explosion limit / Upper flammability limit: No data available
Lower explosion limit / Lower flammability limit: No data available
Vapour pressure: No data available
Relative vapour density: No data available
Relative density: No data available
Density: No data available
Solubility(ies)
  Water solubility: 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): No data available
  Molecular weight: Not applicable
  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: Can react with strong oxidizing agents.

10.4 Conditions to avoid
Conditions to avoid: None known.

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:

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

Formaldehyde:
Acute oral toxicity: Acute toxicity estimate: 100 mg/kg
   Method: Expert judgement
Acute inhalation toxicity: Acute toxicity estimate: 100 ppm
   Exposure time: 4 h
   Test atmosphere: gas
   Method: Expert judgement
Acute dermal toxicity: LD50 (Rabbit): 270 mg/kg

Skin corrosion/irritation
Not classified based on available information.

Components:
Deltamethrin (ISO):
Species: Rabbit
Result: No skin irritation

Formaldehyde:
Species: Rabbit
Method: OECD Test Guideline 404
Result: Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation
Not classified based on available information.

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

Formaldehyde:
Species: Rabbit
Result: Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation
May cause an allergic skin reaction.

Respiratory sensitisation
Not classified based on available information.
# SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

## Deltamethrin Pour-On Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue</th>
<th>Date of first issue</th>
</tr>
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<tbody>
<tr>
<td>3.2</td>
<td>09/13/2019</td>
<td>657786-00011</td>
<td>24.04.2019</td>
<td>02.05.2016</td>
</tr>
</tbody>
</table>

## Components:

### Deltamethrin (ISO):

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Exposure routes</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximisation Test</td>
<td>Dermal</td>
<td>Guinea pig</td>
<td>negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Exposure routes</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human repeat insult patch test (HRIPT)</td>
<td>Dermal</td>
<td>Humans</td>
<td>positive</td>
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</tbody>
</table>

### Formaldehyde:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Exposure routes</th>
<th>Species</th>
<th>Method</th>
<th>Result</th>
<th>Assessment</th>
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</thead>
<tbody>
<tr>
<td>Local lymph node assay (LLNA)</td>
<td>Skin contact</td>
<td>Mouse</td>
<td>OECD Test Guideline 429</td>
<td>positive</td>
<td>Probability or evidence of high skin sensitisation rate in humans</td>
</tr>
</tbody>
</table>

### Germ cell mutagenicity

Not classified based on available information.

## Components:

### Deltamethrin (ISO):

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: Bacterial reverse mutation assay (AMES) Result: negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Test Type: DNA Repair Species: Escherichia coli Result: negative</td>
</tr>
<tr>
<td></td>
<td>Test Type: Chromosomal aberration Test system: Chinese hamster ovary cells Result: negative</td>
</tr>
<tr>
<td></td>
<td>Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster lung cells Concentration: LOAEL: 20 mg/kg Result: positive</td>
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</table>

<table>
<thead>
<tr>
<th>Genotoxicity in vivo</th>
<th>Test Type: Micronucleus test Species: Mouse Application Route: Oral Result: negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Test Type: dominant lethal test Species: Mouse Application Route: Oral</td>
</tr>
</tbody>
</table>
Deltamethrin Pour-On Formulation

Result: negative

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

**Formaldehyde**:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: positive

Test Type: Chromosome aberration test in vitro
Result: positive

Genotoxicity in vivo: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: Inhalation
Result: positive

Germ cell mutagenicity- Assessment: Positive result(s) from in vivo mammalian somatic cell mutagenicity tests.

**Carcinogenicity**
Not classified based on available information.

**Components**:

**Deltamethrin (ISO):**
Species: Mouse, male and female
Application Route: oral (feed)
Exposure time: 104 weeks
NOAEL: 8 mg/kg body weight
LOAEL: 4 mg/kg body weight
Result: positive
Target Organs: Lymph nodes

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

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

**Formaldehyde**:
Species: Rat
Application Route: inhalation (gas)
### Deltamethrin Pour-On Formulation

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<tr>
<th>Version</th>
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<td>24.04.2019</td>
<td>02.05.2016</td>
</tr>
</tbody>
</table>

- **Exposure time**: 28 Months  
- **Result**: positive

- **Carcinogenicity - Assessment**: Sufficient evidence of carcinogenicity in animal experiments

**Reproductive toxicity**  
Not classified based on available information.

**Components:**

**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**: NOAEL: 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.
Formaldehyde:
Effects on foetal development:
Test Type: Embryo-foetal development
Species: Rat
Application Route: inhalation (gas)
Result: negative

STOT - single exposure
Not classified based on available information.

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

Formaldehyde:
Assessment: May cause respiratory irritation.

STOT - repeated exposure
Not classified based on available information.

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.

Formaldehyde:
Exposure routes: inhalation (gas)
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:
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
Deltamethrin Pour-On Formulation

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

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

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

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

Formaldehyde:
Species : Rat
NOAEL : 6 ppm
LOAEL : 10 ppm
Application Route : inhalation (gas)
Exposure time : 28 Days

Aspiration toxicity
Not classified based on available information.

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:**

**Deltamethrin (ISO):**

Toxicity to fish

- **EC50** (Cyprinodon variegatus (sheepshead minnow)): 0.00048 mg/l
  
- **LC50** (Oncorhynchus mykiss (rainbow trout)): 0.00039 mg/l

Toxicity to daphnia and other aquatic invertebrates

- **EC50** (Mysidopsis bahia (opossum shrimp)): 0.0037 µg/l
  
- **EC50** (Daphnia magna (Water flea)): 0.0035 mg/l
  
- **LC50** (Gammarus fasciatus (freshwater shrimp)): 0.0003 µg/l

Toxicity to algae/aquatic plants

- **EC50** (Pseudokirchneriella subcapitata (green algae)): > 9.1 mg/l

**M-Factor (Acute aquatic toxicity):**

- 1,000,000

Toxicity to fish (Chronic toxicity)

- **NOEC:** 0.000022 mg/l
  
- **NOEC:** 0.000017 mg/l

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

- **NOEC:** 0.0041 µg/l

**M-Factor (Chronic aquatic toxicity):**

- 1,000,000

**Formaldehyde:**

Toxicity to fish

- **LC50:** 6.7 mg/l

Toxicity to daphnia and other aquatic invertebrates

- **EC50** (Daphnia pulex (Water flea)): 5.8 mg/l

Remarks: Based on data from similar materials
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants: EC50 (Desmodesmus subspicatus (green algae)): 4.89 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms: EC50: 34.1 mg/l
Exposure time: 120 h

Toxicity to fish (Chronic toxicity): NOEC: >= 48 mg/l
Exposure time: 28 d
Species: Oryzias latipes (Orange-red killifish)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC: >= 6.4 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

12.2 Persistence and degradability

Components:

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

Formaldehyde:
Biodegradability: Result: Readily biodegradable.
Biodegradation: 91 %
Exposure time: 14 d
Method: OECD Test Guideline 301C
Remarks: Based on data from similar materials

12.3 Bioaccumulative potential

Components:

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

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

Formaldehyde:
Partition coefficient: n-octanol/water: log Pow: 0.35

12.4 Mobility in soil

Components:

Deltamethrin (ISO):
Distribution among environmental compartments: log Koc: 7.2
Deltamethrin Pour-On Formulation

12.5 Results of PBT and vPvB assessment
Not relevant

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product : Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

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<th>RID</th>
<th>IMDG</th>
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14.2 UN proper shipping name

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<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Deltamethrin (ISO))</td>
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<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Deltamethrin (ISO))</td>
<td>Environmentally hazardous substance, liquid, n.o.s. (Deltamethrin (ISO))</td>
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14.3 Transport hazard class(es)

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</table>
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14.4 Packing group

**ADN**
- Packing group: III
- Classification Code: M6
- Hazard Identification Number: 90
- Labels: 9

**ADR**
- Packing group: III
- Classification Code: M6
- Hazard Identification Number: 90
- Labels: 9
- Tunnel restriction code: (-)

**RID**
- Packing group: III
- Classification Code: M6
- Hazard Identification Number: 90
- Labels: 9

**IMDG**
- Packing group: III
- Labels: 9
- EmS Code: F-A, S-F

**IATA (Cargo)**
- Packing instruction (cargo aircraft): 964
- Packing instruction (LQ): Y964
- Packing group: III
- Labels: Miscellaneous

**IATA (Passenger)**
- Packing instruction (passenger aircraft): 964
- Packing instruction (LQ): Y964
- Packing group: III
- Labels: Miscellaneous

14.5 Environmental hazards

**ADN**
- Environmentally hazardous: yes

**ADR**
- Environmentally hazardous: yes

**RID**
- Environmentally hazardous: yes

**IMDG**
- Marine pollutant: yes
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Deltamethrin Pour-On Formulation

Version 3.2
Revision Date: 09/13/2019
SDS Number: 657786-00011
Date of last issue: 24.04.2019
Date of first issue: 02.05.2016

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 Special precautions for user
The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : Not applicable
REACH - List of substances subject to authorisation (Annex XIV) : Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable
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:
Formaldehyde (Number on list 72, 28)


E1 ENVIRONMENTAL HAZARDS
Quantity 1 100 t
Quantity 2 200 t

Other regulations:
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
SAFETY DATA SHEET
generated according to Regulation (EC) No. 1907/2006

Deltamethrin Pour-On Formulation

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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

H220: Extremely flammable gas.
H301: Toxic if swallowed.
H311: Toxic in contact with skin.
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H330: Fatal if inhaled.
H331: Toxic if inhaled.
H335: May cause respiratory irritation.
H341: Suspected of causing genetic defects.
H350: May cause cancer.
H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
H372: Causes damage to organs through prolonged or repeated exposure if inhaled.
H372: Causes damage to organs through prolonged or repeated exposure if swallowed.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.: Acute toxicity
Aquatic Acute: Short-term (acute) aquatic hazard
Aquatic Chronic: Long-term (chronic) aquatic hazard
Carc.: Carcinogenicity
Eye Dam.: Serious eye damage
Eye Irrit.: Eye irritation
Flam. Gas: Flammable gases
Muta.: Germ cell mutagenicity
Repr.: Reproductive toxicity
Skin Corr.: Skin corrosion
Skin Sens.: Skin sensitisation
STOT RE: Specific target organ toxicity - repeated exposure
STOT SE: Specific target organ toxicity - single exposure
GB EH40: UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL: Short-term exposure limit (15-minute reference period)

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 Regula-
Deltamethrin Pour-On Formulation

Version 3.2  Revision Date: 09/13/2019  SDS Number: 657786-00011  Date of last issue: 24.04.2019  Date of first issue: 02.05.2016

Sources of key data used to compile the Safety Data Sheet:

Classification of the mixture:
- Skin Sens. 1: H317  Calculation method
- Aquatic Acute 1: H400  Calculation method
- Aquatic Chronic 1: H410  Calculation method

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.

GB / EN