SAFETY DATA SHEET

Deltamethrin Pour-On Formulation

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
               20 Spartan Road
               1619 Spartan, South Africa
Telephone : +27119239300
E-mail address of person responsible for the SDS : EHSDATASTEWARD@msd.com

1.4 Emergency telephone number
       +1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

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

**SECTION 3: Composition/information on ingredients**

**3.2 Mixtures**

**Components**

<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>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 SE 3; H335 STOT RE 1; H372 (Central nervous system, Immune system) STOT RE 1; H372 (Central nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1.000.000 M-Factor (Chronic aquatic toxicity): 1.000.000</td>
<td>&gt;= 0.25 - &lt; 1</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0 200-001-8</td>
<td>Flam. Gas 1B; H221</td>
<td>&lt; 0.1</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 (see section 7) and personal protective equipment recommendations (see section 8).

6.2 Environmental precautions

Environmental precautions:
- Avoid release to the environment.
- Prevent further leakage or spillage if safe to do so.
- Prevent spreading over a wide area (e.g. by containment or oil barriers).
- Retain and dispose of contaminated wash water.
- Local authorities should be advised if significant spills 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.

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

<table>
<thead>
<tr>
<th>Technical measures</th>
<th>See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local/Total ventilation</td>
<td>Use only with adequate ventilation.</td>
</tr>
<tr>
<td>Advice on safe handling</td>
<td>Do not get on skin or clothing. Avoid breathing mist or vapours. 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.</td>
</tr>
<tr>
<td>Hygiene measures</td>
<td>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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.</td>
</tr>
</tbody>
</table>

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

**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>Propylene glycol</td>
<td>57-55-6</td>
<td>TWA OEL-RL (particulate)</td>
<td>10 mg/m³</td>
<td>ZA OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA OEL-RL (Vapour + particulates)</td>
<td>150 ppm 470 mg/m³</td>
<td>ZA OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Further information: Recommended Limit</td>
<td></td>
</tr>
<tr>
<td>deltamethrin (ISO)</td>
<td>52918-63-5</td>
<td>TWA</td>
<td>15 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL OEL-CL</td>
<td>2 ppm 2,5 mg/m³</td>
<td>ZA OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Further information: Control Limit</td>
<td></td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>TWA OEL-CL</td>
<td>2 ppm 2,5 mg/m³</td>
<td>ZA OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>0,3 ppm 0,37 mg/m³</td>
<td>2004/37/EC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STEL OEL-CL</td>
<td>0,6 ppm 0,74 mg/m³</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>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></td>
<td></td>
<td>Long-term systemic effects</td>
<td>168 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</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>
</tr>
<tr>
<td>Formaldehyde</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>9 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Long-term local effects</td>
<td>0,375 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>240 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>0,75 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>3,2 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>102 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td></td>
<td></td>
<td>4,1 mg/kg bw/day</td>
</tr>
</tbody>
</table>
Workers Skin contact Long-term local effects 0,037 mg/cm²
Consumers Inhalation Long-term local effects 0,1 mg/m³
Consumers Skin contact Long-term local effects 0,012 mg/cm²

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>
</tr>
<tr>
<td></td>
<td>Freshwater - intermittent</td>
<td>183 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>26 mg/l</td>
</tr>
<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 dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>57,2 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>50 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>Fresh water</td>
<td>0,44 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0,44 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>4,44 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>0,19 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>2,3 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>2,3 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0,2 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

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
Acute toxicity estimate: 270 mg/kg
Method: Calculation method

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.

Components:

**deltamethrin (ISO):**
- **Test Type:** Maximisation Test
- **Exposure routes:** Dermal
- **Species:** Guinea pig
- **Result:** negative

**Formaldehyde:**
- **Test Type:** Local lymph node assay (LLNA)
- **Exposure routes:** Skin contact
- **Species:** Mouse
- **Method:** OECD Test Guideline 429
- **Result:** positive
- **Assessment:** Probability or evidence of high skin sensitisation rate in humans

Germ cell mutagenicity
Not classified based on available information.

Components:

**deltamethrin (ISO):**
- **Genotoxicity in vitro:**
  - **Test Type:** Bacterial reverse mutation assay (AMES)
  - **Result:** negative
- **Test Type:** DNA Repair
Test system: Escherichia coli  
Result: negative

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

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

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

Test Type: dominant lethal test  
Species: Mouse  
Application Route: Oral  
Result: negative

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

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)
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: 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.

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.
SAFETY DATA SHEET

Deltamethrin Pour-On Formulation

Version: 3.7
Revision Date: 27.08.2021
SDS Number: 657096-00016
Date of last issue: 09.04.2021
Date of first issue: 02.05.2016

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

Species: Rat
NOAEL: 3 mg/m3
LOAEL: 10 ppm
Application Route: inhalation (dust/mist/fume)
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
SAFETY DATA SHEET

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>
</thead>
<tbody>
<tr>
<td>3.7</td>
<td>27.08.2021</td>
<td>657096-00016</td>
<td>09.04.2021</td>
<td>02.05.2016</td>
</tr>
</tbody>
</table>

**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**: 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 (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

Formaldehyde:
Toxicity to fish: LC50: 6.7 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia pulex (Water flea)): 5.8 mg/l
Exposure time: 48 h
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)
Biocoencentration factor (BCF): 1.800
12.4 Mobility in soil

Components:

Deltamethrin (ISO):
Distribution among environmental compartments

: \( \log K_{oc} = 7.2 \)

12.5 Results of PBT and vPvB assessment

Product:
Assessment

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

12.6 Other adverse effects

Product:
Endocrine disrupting potential

: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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

ADN

: UN 3082

ADR

: UN 3082

RID

: UN 3082
14.2 UN proper shipping name

**ADN**: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (deltamethrin (ISO))

**ADR**: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (deltamethrin (ISO))

**RID**: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (deltamethrin (ISO))

**IMDG**: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (deltamethrin (ISO))

**IATA**: Environmentally hazardous substance, liquid, n.o.s. (deltamethrin (ISO))

14.3 Transport hazard class(es)

**ADN**: 9

**ADR**: 9

**RID**: 9

**IMDG**: 9

**IATA**: 9

14.4 Packing group

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

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

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

**IMDG**
Packaging 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

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

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

H221 : 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.
H371 : 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
2004/37/EC : Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
ZA OEL : South Africa. Hazardous Chemical Substances Regulations, Occupational Exposure Limits
2004/37/EC / STEL : Short term exposure limit
2004/37/EC / TWA : Long term exposure limit
ZA OEL / TWA OEL-CL : Long term occupational exposure limits - control limit
ZA OEL / STEL OEL-CL : Short term occupational exposure limits - control limit
ZA OEL / TWA OEL-RL : Long 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 Rail
SAFETY DATA SHEET

Deltamethrin Pour-On Formulation

Version 3.7 Revision Date: 27.08.2021 SDS Number: 657096-00016 Date of last issue: 09.04.2021

Date of first issue: 02.05.2016

Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information


Classification of the mixture:

Classification procedure:

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.

ZA / EN
SAFETY DATA SHEET

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