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

1.1 Product identifier
   Trade name : Deltamethrin Collar

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
             Kilsheelan
             Clonmel Tipperary, IE
   Telephone : 353-51-601000
   E-mail address of person responsible for the SDS : EHSDATASTEWARD@msd.com

1.4 Emergency telephone number
   1-908-423-6000

 SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification (REGULATION (EC) No 1272/2008)
   Acute toxicity, Category 4 : H302: Harmful if swallowed.
   Skin sensitisation, Category 1 : H317: May cause an allergic skin reaction.
   Reproductive toxicity, Category 2 : H361fd: Suspected of damaging fertility. Suspected
   Specific target organ toxicity - repeated exposure, Category 2 : of damaging the unborn child.
   Long-term (chronic) aquatic hazard, Category 3 : H373: May cause damage to organs through pro-
   Long-term (chronic) aquatic hazard, Category 3 : longed or repeated exposure.
   Long-term (chronic) aquatic hazard, Category 3 : H412: Harmful to aquatic life with long lasting ef-

2.2 Label elements
   Labelling (REGULATION (EC) No 1272/2008)
   Hazard pictograms : ![Warning symbol]
   Signal word : Warning
   Hazard statements : H302 Harmful if swallowed.
                      H317 May cause an allergic skin reaction.
                      H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
Deltamethrin Collar

H373   May cause damage to organs through prolonged or repeated exposure.
H412   Harmful to aquatic life with long lasting effects.

Precautionary statements:

Prevention:
P201   Obtain special instructions before use.
P270   Do not eat, drink or smoke when using this product.
P273   Avoid release to the environment.
P280   Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P308 + P313   IF exposed or concerned: Get medical advice/ attention.
P333 + P313   If skin irritation or rash occurs: Get medical advice/ attention.

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

Additional Labelling
EUH212   Warning! Hazardous respirable dust may be formed when used. Do not breathe dust.

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.

Ecological information: 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.

Toxicological information: 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 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>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triphenyl phosphate</td>
<td>115-86-6</td>
<td>204-112-2</td>
<td>Aquatic Acute 1; H400 Aquatic Chronic 2; H411</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
</tbody>
</table>
Deltamethrin Collar

**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.

For explanation of abbreviations see section 16.
Get medical attention if irritation develops and persists.

If swallowed:
- If swallowed, DO NOT induce vomiting.
- Get medical attention.
- Rinse mouth thoroughly with water.
- Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed
Risks:
- Harmful if swallowed.
- May cause an allergic skin reaction.
- Suspected of damaging fertility. Suspected of damaging the unborn child.
- May cause damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed
Treatment:
- Treat symptomatically and supportively.

SECTION 5: Firefighting measures

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

Unsuitable extinguishing media:
- 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
- Nitrogen oxides (NOx)
- Bromine compounds
- Chlorine compounds
- Oxides of phosphorus

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. 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: Sweep up or vacuum up spillage and collect in suitable container for disposal. 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.
Advice on safe handling: Do not get on skin or clothing. Do not breathe dust, fume, gas, mist, vapours or spray. Do not swallow. Avoid contact with eyes. Wash skin thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment. Do not eat, drink or smoke when using this product. 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. 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.

### 7.2 Conditions for safe storage, including any incompatibilities

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

**Advice on common storage:** Do not store with the following product types:
- Strong oxidizing agents
- Organic peroxides
- 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>Polyvinyl chloride</td>
<td>9002-86-2</td>
<td>OELV - 8 hrs (TWA) (Respirable dust)</td>
<td>1 mg/m³</td>
<td>IE OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OELV - 8 hrs (TWA) (inhalable dust)</td>
<td>10 mg/m³</td>
<td>IE OEL</td>
</tr>
<tr>
<td>Triphenyl phosphate</td>
<td>115-86-6</td>
<td>OELV - 8 hrs (TWA)</td>
<td>3 mg/m³</td>
<td>IE OEL</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>Further information: DSEN, Skin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wipe limit</td>
<td></td>
<td>150 µg/100 cm²</td>
<td>Internal</td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>OELV - 8 hrs (TWA) (Respirable dust)</td>
<td>4 mg/m³</td>
<td>IE OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OELV - 8 hrs (TWA) (inhalable dust)</td>
<td>10 mg/m³</td>
<td>IE OEL</td>
</tr>
</tbody>
</table>

These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

Titanium dioxide

**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>
</table>
Deltamethrin Collar

Version: 7.1  Revision Date: 27.08.2021  SDS Number: 87833-00022  Date of last issue: 09.04.2021
Date of first issue: 01.04.2015

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triphenyl phosphate</td>
<td>Fresh water</td>
<td>0.0037 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.00037 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>0.0025 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>5 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>1.103 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.1103 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.2183 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Oral (Secondary Poisoning)</td>
<td>16.667 mg/kg food</td>
</tr>
</tbody>
</table>

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

### 8.2 Exposure controls

**Engineering measures**

Use feasible engineering controls to minimize exposure to compound.
All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

**Personal protective equipment**

- **Eye protection**: Wear safety glasses with side shields or goggles.
- **Hand protection Material**: Chemical-resistant gloves
- **Skin and body protection**: Work uniform or laboratory coat.
- **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 143
- **Filter type**: Particulates type (P)

**SECTION 9: Physical and chemical properties**

- **9.1 Information on basic physical and chemical properties**
  - **Physical state**: solid
### Deltamethrin Collar

**Colour:** white  
**Odour:** very faint  
**Odour Threshold:** No data available  
**Melting point/freezing point:** No data available  
**Initial boiling point and boiling range:** > 148.8 °C  
**Flammability (solid, gas):** Not classified as a flammability hazard  
**Flammability (liquids):** No data available  
**Upper explosion limit / Upper flammability limit:** No data available  
**Lower explosion limit / Lower flammability limit:** No data available  
**Flash point:** Not applicable  
**Auto-ignition temperature:** No data available  
**Decomposition temperature:** No data available  
**pH:** No data available  
**Viscosity:** Not applicable  
**Viscosity, kinematic:** Not applicable  
**Solubility(ies):**  
**Water solubility:** No data available  
**Partition coefficient: n-octanol/water:** Not applicable  
**Vapour pressure:** Not applicable  
**Relative density:** No data available  
**Density:** No data available  
**Relative vapour density:** Not applicable  
**Particle characteristics:**  
**Particle size:** Not applicable

#### 9.2 Other information

**Explosives:** Not explosive  
**Oxidizing properties:** The substance or mixture is not classified as oxidizing.  
**Evaporation rate:** Not applicable  
**Molecular weight:** 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 hazard classes as defined in Regulation (EC) No 1272/2008
   Information on likely routes of exposure:
      Skin contact
      Ingestion
      Eye contact

   Acute toxicity
   Harmful if swallowed.

   Product:
   Acute oral toxicity: Acute toxicity estimate: 1,668 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:
   Triphenyl phosphate:
      Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
      Acute dermal toxicity: LD50 (Rabbit): > 10,000 mg/kg

   deltamethrin (ISO):
      Acute oral toxicity: LD50 (Rat): 66.7 mg/kg
Deltamethrin Collar

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

Skin corrosion/irritation
Not classified based on available information.

Components:

Triphe

Species:
Method:
Result:

Triphenyl phosphate:
Rabbit
OECD Test Guideline 404
No skin irritation

deltamethrin (ISO):
Species:
Result:
Rabbit
No skin irritation

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

Components:

Triphe

Species:
Method:
Result:

Triphenyl phosphate:
Rabbit
OECD Test Guideline 405
No eye irritation

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

Respiratory or skin sensitisation

Skin sensitisation
May cause an allergic skin reaction.
Deltamethrin Collar

Respiratory sensitisation
Not classified based on available information.

Components:

Triphenyl phosphate:
Test Type: Maximisation Test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative
deltamethrin (ISO):
Test Type: Maximisation Test
Exposure routes: Dermal
Species: Guinea pig
Result: negative
Test Type: Human repeat insult patch test (HRIPT)
Exposure routes: Dermal
Species: Humans
Result: positive

Germ cell mutagenicity
Not classified based on available information.

Components:

Triphenyl phosphate:
Genotoxicity in vitro: Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative
Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Result: negative
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
Deltamethrin Collar

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

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

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

Components:
Triphenyl phosphate:
Effects on fertility: Test Type: One-generation reproduction toxicity study
### Deltamethrin Collar

<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>7.1</td>
<td>27.08.2021</td>
<td>87833-00022</td>
<td>09.04.2021</td>
<td>01.04.2015</td>
</tr>
</tbody>
</table>

#### Species
- **Species**: Rat
- **Application Route**: Ingestion
- **Result**: negative

#### Effects on foetal development
- **Test Type**: Embryo-foetal development
- **Species**: Rabbit
- **Application Route**: Ingestion
- **Method**: OECD Test Guideline 414
- **Result**: negative

#### Deltamethrin (ISO):

<table>
<thead>
<tr>
<th>Effects on fertility</th>
<th>Test Type: Three-generation reproduction toxicity study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Species</strong>: Rat</td>
</tr>
<tr>
<td></td>
<td><strong>Application Route</strong>: oral (feed)</td>
</tr>
<tr>
<td></td>
<td><strong>Early Embryonic Development</strong>: NOAEL: 50 mg/kg body weight</td>
</tr>
<tr>
<td></td>
<td><strong>Symptoms</strong>: No effects on fertility, Embryo-foetal toxicity</td>
</tr>
<tr>
<td></td>
<td><strong>Remarks</strong>: Significant toxicity observed in testing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Effects on foetal development</th>
<th>Test Type: Two-generation reproduction toxicity study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Species</strong>: Rat</td>
</tr>
<tr>
<td></td>
<td><strong>Application Route</strong>: Oral</td>
</tr>
<tr>
<td></td>
<td><strong>Early Embryonic Development</strong>: LOAEL: 84 - 149 mg/kg body weight</td>
</tr>
<tr>
<td></td>
<td><strong>Symptoms</strong>: No effects on fertility, Embryo-foetal toxicity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Effects on fertility</th>
<th>Test Type: Fertility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Species</strong>: Rat, male</td>
</tr>
<tr>
<td></td>
<td><strong>Application Route</strong>: Oral</td>
</tr>
<tr>
<td></td>
<td><strong>Fertility</strong>: LOAEL: 1 mg/kg body weight</td>
</tr>
<tr>
<td></td>
<td><strong>Symptoms</strong>: Effects on fertility</td>
</tr>
<tr>
<td></td>
<td><strong>Target Organs</strong>: Testes</td>
</tr>
</tbody>
</table>

#### Reproductive toxicity - Assessment
- Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.
STOT - single exposure
Not classified based on available information.

**Components:**

**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.

Repeated dose toxicity

**Components:**

**Triphenyl phosphate:**
- Species: Rat
- NOAEL: 105 mg/kg
- Application Route: Ingestion
- Exposure time: 90 Days
- Method: OECD Test Guideline 408

**deltamethrin (ISO):**
- Species: Rat, male and female
- NOAEL: 1 mg/kg
- LOAEL: 2.5 mg/kg
- Application Route: Oral
- Exposure time: 13 Weeks
- Target Organs: Nervous system
- Symptoms: Hyperexcitability

Species: Rat
LOAEL: 3 mg/m3
Application Route: Inhalation (dust/mist/fume)
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

Aspiration toxicity
Not classified based on available information.

11.2 Information on other hazards

Endocrine disrupting properties

Product:
Assessment : 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.

Experience with human exposure

Product:
Skin contact : Remarks: Can be absorbed through skin. Based on Animal Evidence May irritate skin.
Ingestion : Remarks: May be harmful if swallowed.

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

**Product:**
- **Toxicity to fish:** LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
  Exposure time: 96 h
  Method: OECD Test Guideline 203

- **Toxicity to daphnia and other aquatic invertebrates:** EC50 (Daphnia magna (Water flea)): 13 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202

**Ecotoxicology Assessment**
- **Chronic aquatic toxicity:** Harmful to aquatic life with long lasting effects.

**Components:**

**Triphenyl phosphate:**
- **Toxicity to fish:** LC50 (Oncorhynchus mykiss (rainbow trout)): 0.4 mg/l
  Exposure time: 96 h

- **Toxicity to daphnia and other aquatic invertebrates:** EC50 (Daphnia magna (Water flea)): 2.41 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202

- **Toxicity to algae/aquatic plants:** NOEC (Pseudokirchneriella subcapitata (green algae)): 0.25 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201

**M-Factor (Acute aquatic toxicity):**
- 1

**Toxicity to fish (Chronic toxicity):**
- EC10: 0.037 mg/l
  Exposure time: 30 d
  Species: Oncorhynchus mykiss (rainbow trout)

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):**
- NOEC: 0.254 mg/l
  Exposure time: 21 d
  Species: Daphnia magna (Water flea)
  Method: OECD Test Guideline 211

**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

12.2 Persistence and degradability

Components:
- Triphenyl phosphate:
  Biodegradability: Result: Readily biodegradable.
  Biodegradation: 83 - 94 %
  Exposure time: 28 d

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

12.3 Bioaccumulative potential

Components:
- Triphenyl phosphate:
  Bioaccumulation: Species: Oryzias latipes (Orange-red killifish)
  Bioconcentration factor (BCF): 144
  Partition coefficient: n-log Pow: 4.63
octanol/water

deltamethrin (ISO):
Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
                 Bioconcentration factor (BCF): 1,800
Partition coefficient: n-octanol/water : log Pow: 4.6

12.4 Mobility in soil

Components:
deltamethrin (ISO):
Distribution among environmental compartments : log Koc: 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 Endocrine disrupting properties

Product:
Assessment : 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.

12.7 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 or ID number
Not regulated as a dangerous good
Deltamethrin Collar

14.2 UN proper shipping name
   Not regulated as a dangerous good

14.3 Transport hazard class(es)
   Not regulated as a dangerous good

14.4 Packing group
   Not regulated as a dangerous good

14.5 Environmental hazards
   Not regulated as a dangerous good

14.6 Special precautions for user
   Not applicable

14.7 Maritime transport in bulk according to IMO instruments
   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): Not applicable
   REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): Not applicable
   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: Not applicable
   REACH - List of substances subject to authorisation (Annex XIV): Not applicable

   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

H301: Toxic if swallowed.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H331: Toxic if inhaled.
H335: May cause respiratory irritation.
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.

Full text of other abbreviations

Acute Tox.: Acute toxicity
Aquatic Acute: Short-term (acute) aquatic hazard
Aquatic Chronic: Long-term (chronic) aquatic hazard
Eye Irrit.: Eye irritation
Repr.: Reproductive toxicity
Skin Sens.: Skin sensitisation
STOT RE: Specific target organ toxicity - repeated exposure
STOT SE: Specific target organ toxicity - single exposure
IE OEL: Ireland. List of Chemical Agents and Occupational Exposure Limit Values - Schedule 1
IE OEL / OELV - 8 hrs (TWA): Occupational exposure limit value (8-hour 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; 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 Organiza-
Deltamethrin Collar

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Further information:

Classification of the mixture:

| Acute Tox. 4 | H302 | Calculation method |
| Skin Sens. 1 | H317 | Calculation method |
| Repr. 2 | H361fd | Calculation method |
| STOT RE 2 | H373 | Calculation method |
| Aquatic Chronic 3 | H412 | Based on product data or assessment |

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