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

1.1 Product identifier
   Trade name : Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

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

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

1.4 Emergency telephone number
   1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification (REGULATION (EC) No 1272/2008)
   Acute toxicity, Category 4 : H302: Harmful if swallowed.
   Specific target organ toxicity - single exposure, Category 1 : H370: Causes damage to organs.
   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 : Danger
   Hazard statements : H302 Harmful if swallowed.
H370 Causes damage to organs.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

**Prevention:**
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.

**Response:**
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.
P391 Collect spillage.

Hazardous components which must be listed on the label:
lambda-cyhalothrin (ISO)

2.3 Other hazards
None known.

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

### 3.2 Mixtures

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No. EC-No. Index-No. Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether</td>
<td>51-03-6 200-076-7</td>
<td>Aquatic Acute 1; H400  Aquatic Chronic 1; H410</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
<tr>
<td></td>
<td>lambda-cyhalothrin (ISO)</td>
<td>91465-08-6 415-130-7 607-252-00-6</td>
<td>Acute Tox. 3; H301  Acute Tox. 2; H330  Acute Tox. 3; H311  Eye Irrit. 2; H319  STOT SE 1; H370  Aquatic Acute 1; H400  Aquatic Chronic 1; H410</td>
<td>&gt;= 10 - &lt; 20</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 unless directed to do so by medical personnel. 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. Causes damage to organs.

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
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), Chlorine compounds, Fluorine compounds.

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. 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: Use only with adequate ventilation.

Advice on safe handling: Do not swallow.
Avoid contact with eyes.
Avoid prolonged or repeated contact with skin.
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 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>
</table>
### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>3.875 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>7.75 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>3.875 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>3.875 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>27.7 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Acute systemic effects</td>
<td>55.5 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term local effects</td>
<td>0.44 mg/cm²</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Acute local effects</td>
<td>0.888 mg/cm²</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>1.94 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>3.875 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>1.94 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>1.14 mg/kg</td>
</tr>
</tbody>
</table>

---

Further information: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit value should be used.

Further information: Skin

Wipe limit 50 µg/100 cm²

Internal

Further information: Skin

λcyhalothrin

ISO

91465-08-6

TWA

5 µg/m³ (OEB 4)

Internal

Further information: Skin

OELV - 8 hrs (TWA) (Respirable dust)

10 mg/m³

IE OEL

Further information: Skin

Polyvinyl chloride

9002-86-2

OELV - 8 hrs (TWA) (inhalable dust)

1 mg/m³

IE OEL

Further information: Skin

λcyhalothrin

ISO

51-03-6

TWA

4 mg/m³ (OEB 1)

Internal
**SAFETY DATA SHEET**

**Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag**

**Version** 3.3  
**Revision Date:** 23.03.2020  
**SDS Number:** 1139833-00011  
**Date of last issue:** 13.09.2019  
**Date of first issue:** 06.12.2016

### Effects

<table>
<thead>
<tr>
<th></th>
<th>Effects</th>
<th>bw/day</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumers</strong></td>
<td>Ingestion</td>
<td>Acute systemic effects</td>
</tr>
<tr>
<td><strong>Workers</strong></td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td><strong>Workers</strong></td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
</tr>
<tr>
<td><strong>Workers</strong></td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td><strong>Workers</strong></td>
<td>Skin contact</td>
<td>Acute systemic effects</td>
</tr>
<tr>
<td><strong>Consumers</strong></td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td><strong>Consumers</strong></td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
</tr>
<tr>
<td><strong>Consumers</strong></td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td><strong>Consumers</strong></td>
<td>Skin contact</td>
<td>Acute systemic effects</td>
</tr>
<tr>
<td><strong>Consumers</strong></td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
</tr>
<tr>
<td><strong>Consumers</strong></td>
<td>Ingestion</td>
<td>Acute systemic effects</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether</td>
<td>Fresh water</td>
<td>0.003 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>0 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>10 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>0.019 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.0002 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.016 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Oral (Secondary Poisoning)</td>
<td>12.53 mg/kg food</td>
</tr>
<tr>
<td>Soybean oil, epoxidized</td>
<td>Soil</td>
<td>6.25</td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

**Engineering measures**

Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., vacuum conveying from a closed system, packout head with inflatable seal from stationary container, ventilated enclosure, etc.).

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Essentially no open handling permitted.

Use closed processing systems or containment technologies.

**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

Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Use appropriate degowning techniques to remove potentially contaminated clothing.

Respiratory protection

If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection. Equipment should conform to I.S. EN 14387

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : solid
Colour : violet
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 : Not applicable
Evaporation rate : No data available
Flammability (solid, gas) : Not classified as a flammability hazard
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
**Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag**

<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>
</table>

- **Density**: No data available
- **Solubility(ies)**
  - **Water solubility**: No data available
  - **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**: No data available
- **Particle size**: No data available

**SECTION 10: Stability and reactivity**

**10.1 Reactivity**

Not classified as a reactivity hazard.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Hazardous reactions: 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: Skin contact
Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Acute toxicity
Harmful if swallowed.

Product:
Acute oral toxicity: Acute toxicity estimate: 560 mg/kg
Method: Calculation method

Acute inhalation toxicity: Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity: Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Components:
2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:
Acute oral toxicity: LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 423

Acute inhalation toxicity: LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity: LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402

lambda-cyhalothrin (ISO):
Acute oral toxicity: LD50 (Rat): 56 - 79 mg/kg
LD50 (Mouse): 20 mg/kg

Acute inhalation toxicity: LC50 (Rat): 0.06 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity: LD50 (Rat): 632 - 696 mg/kg

Acute toxicity (other routes of administration): LD50 (Rat): 250 - 750 mg/kg
Application Route: Intraperitoneal

Skin corrosion/irritation
Not classified based on available information.

Components:
2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:
Species: Rabbit
Method: OECD Test Guideline 404
Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

<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>
</table>

Result: No skin irritation

**lambda-cyhalothrin (ISO):**
- Species: Rabbit
- Result: No skin irritation

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

**Product:**
- Result: No eye irritation

**Components:**

**2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:**
- Species: Rabbit
- Method: OECD Test Guideline 405
- Result: No eye irritation

**Respiratory or skin sensitisation**

**Skin sensitisation**
Not classified based on available information.

**Respiratory sensitisation**
Not classified based on available information.

**Components:**

**2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:**
- Test Type: Maximisation Test
- Exposure routes: Skin contact
- Species: Guinea pig
- Method: OECD Test Guideline 406
- Result: negative

**lambda-cyhalothrin (ISO):**
- Test Type: Magnusson-Kligman-Test
- Exposure routes: Dermal
- Species: Guinea pig
- Result: Not a skin sensitizer.

**Germ cell mutagenicity**
Not classified based on available information.
Components:

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:
- Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES) Result: negative

lambda-cyhalothrin (ISO):
- Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
  - Test Type: Chromosomal aberration Test system: Human lymphocytes Result: negative
  - Test Type: unscheduled DNA synthesis assay Test system: rat hepatocytes Result: negative
  - Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Result: negative
- Genotoxicity in vivo: Test Type: Micronucleus test Species: Mouse Cell type: Bone marrow Application Route: Intraperitoneal Result: negative

Carcinogenicity
Not classified based on available information.

Components:

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:
- Species: Rat Application Route: Ingestion Exposure time: 107 weeks Method: OECD Test Guideline 451 Result: negative

lambda-cyhalothrin (ISO):
- Species: Mouse Application Route: oral (feed) Exposure time: 2 Years Result: negative Remarks: Based on data from similar materials
- Species: Rat Application Route: oral (feed) Exposure time: 2 Years Result: negative
Lambda-Cyhalothrin / Piperonyl Butoxide Ear 
Tag

Remarks : Based on data from similar materials

Reproductive toxicity
Not classified based on available information.

Components:

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:
Effects on fertility : Test Type: Two-generation reproduction toxicity study 
Species: Rat 
Application Route: Ingestion 
Result: negative

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

lambda-cyhalothrin (ISO):
Effects on fertility : Test Type: Three-generation study 
Species: Rat 
Application Route: oral (feed) 
General Toxicity - Parent: NOAEL: 2 mg/kg body weight 
General Toxicity F1: LOAEL: 6.7 mg/kg body weight 
Symptoms: Reduced offspring weight gain 
Result: No effects on fertility 
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Development 
Species: Rat 
Application Route: Oral 
General Toxicity Maternal: NOAEL: 10 mg/kg body weight 
Developmental Toxicity: LOAEL: 15 mg/kg body weight 
Result: No effects on foetal development, Reduced maternal body weight gain, Reduced foetal weight 
Remarks: Based on data from similar materials

Test Type: Development 
Species: Rabbit 
Application Route: Oral 
General Toxicity Maternal: NOAEL: 10 mg/kg body weight 
Developmental Toxicity: NOAEL: 30 mg/kg body weight 
Result: No effects on foetal development, Reduced maternal body weight gain, Reduced foetal weight 
Remarks: Based on data from similar materials

STOT - single exposure
Causes damage to organs.
Components:

**lambda-cyhalothrin (ISO):**
- Target Organs: Nervous system
- Assessment: Causes damage to organs.

**STOT - repeated exposure**
Not classified based on available information.

**Repeated dose toxicity**

**Components:**

**2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:**
- Species: Rat
  - NOAEL: 1,323 mg/kg
  - Application Route: Ingestion
  - Exposure time: 7 Weeks

**lambda-cyhalothrin (ISO):**
- Species: Dog
  - NOAEL: 2.5 mg/kg
  - LOAEL: 12.5 mg/kg
  - Application Route: Oral (feed)
  - Exposure time: 90 d
  - Symptom: reduced body weight gain, reduced food consumption

- Species: Rat
  - NOAEL: 10 mg/kg
  - LOAEL: 50 mg/kg
  - Application Route: Dermal
  - Exposure time: 21 d
  - Target Organs: Nervous system

- Species: Rat
  - NOAEL: 0.08 mg/kg
  - LOAEL: 0.9 mg/kg
  - Application Route: Inhalation
  - Exposure time: 21 d
  - Target Organs: Nervous system

- Species: Dog
  - NOAEL: 0.1 mg/kg
  - LOAEL: 0.5 mg/kg
  - Application Route: Oral
  - Exposure time: 1 yr
  - Target Organs: Nervous system
  - Symptoms: Gastrointestinal disturbance, Vomiting, Convulsions, ataxia, Liver effects
Lambda-Cyhalothrin / Piperonyl Butoxide Ear
Tag

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Product:
Skin contact : Symptoms: Skin irritation, tingling, superficial burning sensation, Local irritation
Remarks: Can be absorbed through skin.
Eye contact : Remarks: May irritate eyes.

Components:
lambda-cyhalothrin (ISO):
Inhalation : Symptoms: Cough, Local irritation, sneezing
Skin contact : Symptoms: Skin irritation, tingling, superficial burning sensation, Local irritation
Remarks: Can be absorbed through skin.
Eye contact : Symptoms: Eye irritation
Ingestion : Symptoms: Gastrointestinal disturbance

SECTION 12: Ecological information

12.1 Toxicity

Components:
2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:
Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): 3.94 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.51 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 3.89 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.824 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50: > 1,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
### Toxicity to fish (Chronic toxicity)
- NOEC: 0.18 mg/l
- Exposure time: 35 d
- Species: Pimephales promelas (fathead minnow)

### Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
- NOEC: 0.03 mg/l
- Exposure time: 21 d
- Species: Daphnia magna (Water flea)

### M-Factor (Chronic aquatic toxicity)
- 1

### Lambda-cyhalothrin (ISO):

#### Toxicity to fish
- LC50 (Oncorhynchus mykiss (rainbow trout)): 0.00019 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 203
- Remarks: Based on data from similar materials

- LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00021 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 203
- Remarks: Based on data from similar materials

#### Toxicity to daphnia and other aquatic invertebrates
- EC50 (Daphnia magna (Water flea)): 0.00004 mg/l
- Exposure time: 48 h
- Method: OECD Test Guideline 202
- Remarks: Based on data from similar materials

### M-Factor (Acute aquatic toxicity)
- 10,000

#### Toxicity to fish (Chronic toxicity)
- NOEC: 0.000062 mg/l
- Exposure time: 32 d
- Species: Pimephales promelas (fathead minnow)
- Method: OECD Test Guideline 210
- Remarks: Based on data from similar materials

#### Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
- NOEC: 0.0035 µg/l
- Exposure time: 21 d
- Species: Daphnia magna (Water flea)
- Method: OECD Test Guideline 211
- Remarks: Based on data from similar materials

### M-Factor (Chronic aquatic toxicity)
- 10,000

#### 2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:
- Biodegradability: Not readily biodegradable.
- Biodegradation: 0 %
- Exposure time: 28 d

12.2 Persistence and degradability

**Components:**

- 2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether: Not readily biodegradable.
12.3 Bioaccumulative potential

Components:

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:
Partition coefficient: n-octanol/water : log Pow: 5

lambda-cyhalothrin (ISO):
Bioaccumulation : Bioconcentration factor (BCF): 2,240
Method: OECD Test Guideline 305

Partition coefficient: n-octanol/water : log Pow: 7.0 (20 °C)

12.4 Mobility in soil

Components:

lambda-cyhalothrin (ISO):
Distribution among environmental compartments : log Koc: 5.5

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

ADN : UN 3077
ADR : UN 3077
RID : UN 3077
IMDG : UN 3077
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14.2 UN proper shipping name

ADN: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))

ADR: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))

RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))

IATA: Environmentally hazardous substance, solid, n.o.s.
(2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))

14.3 Transport hazard class(es)

ADN: 9
ADR: 9
RID: 9
IMDG: 9
IATA: 9

14.4 Packing group

ADN
Packing group: III
Classification Code: M7
Hazard Identification Number: 90
Labels: 9 (ENvironM.)

ADR
Packing group: III
Classification Code: M7
Hazard Identification Number: 90
Labels: 9 (ENvironM.)
Tunnel restriction code: (-)

RID
Packing group: III
Classification Code: M7
Hazard Identification Number: 90
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Labels
IMDG
Packing group : III
Labels : 9 (ENVIRONM.)
EmS Code : F-A, S-F

IATA (Cargo)
Packing instruction (cargo aircraft) : 956
Packing instruction (LQ) : Y956
Packing group : III
Labels : Miscellaneous,

IATA (Passenger)
Packing instruction (passenger aircraft) : 956
Packing instruction (LQ) : Y956
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
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable
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according to Regulation (EC) No. 1907/2006

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REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).
REACH - List of substances subject to authorisation (Annex XIV)
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

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<thead>
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<th>Quantity 1</th>
<th>Quantity 2</th>
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<tr>
<td>50 t</td>
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Other regulations:
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.
Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

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

SECTION 16: Other information
Other information : Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of H-Statements
H301 : Toxic if swallowed.
H311 : Toxic in contact with skin.
H319 : Causes serious eye irritation.
H330 : Fatal if inhaled.
H370 : Causes damage to organs.
H400 : Very toxic to aquatic life.
H410 : Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations
Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

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Acute Tox.: Acute toxicity
Aquatic Acute: Short-term (acute) aquatic hazard
Aquatic Chronic: Long-term (chronic) aquatic hazard
Eye Irrit.: Eye irritation
STOT SE: Specific target organ toxicity - single exposure
IE OEL: Ireland. List of Chemical Agents and Occupational Exposure
IE OEL / OELV - 8 hrs (TWA): Occupational exposure limit value (8-hour reference period)

Further information

Classification of the mixture:
Acute Tox. 4: H302
STOT SE 1: H370
Aquatic Acute 1: H400

Classification procedure:
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.