

## SAFETY DATA SHEETS

**This SDS packet was issued with item:**

078408650

N/A

# Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

## SECTION 1. IDENTIFICATION

Product name : Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

### Manufacturer or supplier's details

Company name of supplier : Merck & Co., Inc

Address : 2000 Galloping Hill Road  
Kenilworth - New Jersey - USA 1685

Telephone : 908-740-4000

Telefax : 908-735-1496

Emergency telephone : 1-908-423-6000

E-mail address : EHSDATASTEWARD@merck.com

### Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product

## SECTION 2. HAZARDS IDENTIFICATION

### GHS classification in accordance with 29 CFR 1910.1200

Acute toxicity (Oral) : Category 4

Carcinogenicity (Inhalation) : Category 2

Specific target organ  
systemic toxicity - single  
exposure : Category 1 (Nervous system)

### GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H302 Harmful if swallowed.  
H351 Suspected of causing cancer if inhaled.  
H370 Causes damage to organs (Nervous system).

Precautionary Statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read  
and understood.

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

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.  
P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician.

**Storage:**

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Hazardous ingredients**

Chemical name	CAS-No.	Concentration (% w/w)
Polyvinyl chloride	9002-86-2	>= 50 - < 70
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	51-03-6	>= 10 - < 20
lambda-cyhalothrin (ISO)	91465-08-6	>= 10 - < 20
Titanium dioxide	13463-67-7	>= 0.1 - < 1

**SECTION 4. 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.

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.

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

Version 2.0	Revision Date: 05/09/2017	SDS Number: 1139526-00003	Date of last issue: 03/29/2017 Date of first issue: 12/06/2016
----------------	------------------------------	------------------------------	---

- |   |   |
|---|---|
|   | Get medical attention if irritation develops and persists.  |
| If swallowed  | : If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel.<br>Get medical attention.<br>Rinse mouth thoroughly with water.<br>Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : Harmful if swallowed.<br>Suspected of causing cancer if inhaled.<br>Causes damage to organs.  |
| 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.   |
| Notes to physician  | : Treat symptomatically and supportively.   |

**SECTION 5. FIRE-FIGHTING MEASURES**

- |  |   |
|--|---|
| Suitable extinguishing media                   | : Water spray<br>Alcohol-resistant foam<br>Carbon dioxide (CO <sub>2</sub> )<br>Dry chemical  |
| Unsuitable extinguishing media                 | : None known.   |
| Specific hazards during fire fighting          | : Exposure to combustion products may be a hazard to health.  |
| Hazardous combustion products                  | : Carbon oxides<br>Nitrogen oxides (NO <sub>x</sub> )<br>Chlorine compounds<br>Fluorine compounds   |
| Specific extinguishing methods                 | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.<br>Use water spray to cool unopened containers.<br>Remove undamaged containers from fire area if it is safe to do so.<br>Evacuate area. |
| Special protective equipment for fire-fighters | : In the event of fire, wear self-contained breathing apparatus.<br>Use personal protective equipment.  |

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- |   |  |
|---|--|
| Personal precautions, protective equipment and emergency procedures | : Use personal protective equipment.<br>Follow safe handling advice and personal protective equipment recommendations. |
|---|--|

# Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version 2.0      Revision Date: 05/09/2017      SDS Number: 1139526-00003      Date of last issue: 03/29/2017  
 Date of first issue: 12/06/2016

- 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.
- Methods and materials for containment and 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.

## SECTION 7. HANDLING AND STORAGE

- 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.  
 Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage : Keep in properly labeled containers.  
 Store locked up.  
 Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:  
 Strong oxidizing agents  
 Organic peroxides  
 Explosives  
 Gases

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Polyvinyl chloride	9002-86-2	TWA (Respirable fraction)	1 mg/m <sup>3</sup>	ACGIH
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	51-03-6	TWA	4000 µg/m <sup>3</sup> (OEB 1)	Merck

# Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version 2.0      Revision Date: 05/09/2017      SDS Number: 1139526-00003      Date of last issue: 03/29/2017  
 Date of first issue: 12/06/2016

	Further information: Skin			
lambda-cyhalothrin (ISO)	91465-08-6	TWA	5 µg/m <sup>3</sup> (OEB 4)	Merck
	Further information: Skin			
		Wipe limit	50 µg/100 cm <sup>2</sup>	Merck
Titanium dioxide	13463-67-7	TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1
		TWA	10 mg/m <sup>3</sup> (Titanium dioxide)	ACGIH

**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

**Respiratory protection** : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

**Hand protection**  
**Material** : Chemical-resistant gloves

**Remarks** : Consider double gloving.

**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.

**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

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

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

contaminated clothing.

Hygiene measures : Ensure that eye flushing systems and safety showers are located 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.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	:	solid
Color	:	violet
Odor	:	No information available.
Odor 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
Flammability (liquids)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Solubility(ies)	:	
Water solubility	:	No data available
Partition coefficient: n-	:	No data available

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

Version 2.0	Revision Date: 05/09/2017	SDS Number: 1139526-00003	Date of last issue: 03/29/2017 Date of first issue: 12/06/2016
----------------	------------------------------	------------------------------	---

octanol/water

Autoignition 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.

Molecular weight : No data available

Particle size : No data available

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Can react with strong oxidizing agents.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

**SECTION 11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

Skin contact

Ingestion

Eye contact

**Acute toxicity****II** Harmful if swallowed.**Product:**Acute oral toxicity : Acute toxicity estimate: 560 mg/kg  
Method: Calculation method**II** Acute inhalation toxicity : Assessment: The substance or mixture has no acute inhalation toxicityAcute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method



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

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

**Ingredients:****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

**Titanium dioxide:**

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 6.82 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity

**Skin corrosion/irritation**

Not classified based on available information.

**Ingredients:****2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether:**

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

**lambda-cyhalothrin (ISO):**

Species: Rabbit
Result: No skin irritation

# Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

**Titanium dioxide:**

Species: Rabbit  
Result: No skin irritation

**Serious eye damage/eye irritation**

Not classified based on available information.

**Product:**

Result: No eye irritation

**Ingredients:****2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether:**

Species: Rabbit  
Result: No eye irritation  
Method: OECD Test Guideline 405

**lambda-cyhalothrin (ISO):**

Species: Rabbit  
Result: Mild eye irritation

**Titanium dioxide:**

Species: Rabbit  
Result: No eye irritation

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Ingredients:****2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether:**

Test Type: Maximization Test  
Routes of exposure: Skin contact  
Species: Guinea pig  
Method: OECD Test Guideline 406  
Result: negative

**lambda-cyhalothrin (ISO):**

Test Type: Magnusson-Kligman-Test  
Routes of exposure: Dermal  
Species: Guinea pig  
Result: Not a skin sensitizer.

## Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

### Titanium dioxide:

Test Type: Local lymph node assay (LLNA)  
Routes of exposure: Skin contact  
Species: Mouse  
Result: negative

### Germ cell mutagenicity

Not classified based on available information.

### Ingredients:

#### 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  
Species: Human lymphocytes  
Result: negative

: Test Type: unscheduled DNA synthesis assay  
Species: rat hepatocytes  
Result: negative

: Test Type: In vitro mammalian cell gene mutation test  
Species: mouse lymphoma cells  
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Intraperitoneal  
Result: negative

### Titanium dioxide:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Mouse  
Result: negative

### Carcinogenicity

Suspected of causing cancer if inhaled.

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

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

**Ingredients:****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  
Remarks: Based on data from similar materials

**Titanium dioxide:**

Species: Rat  
Application Route: inhalation (dust/mist/fume)  
Exposure time: 2 Years  
Method: OECD Test Guideline 453  
Result: positive  
Remarks: The mechanism or mode of action may not be relevant in humans.

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in inhalation studies with animals.

**IARC**

Group 2B: Possibly carcinogenic to humans

Titanium dioxide 13463-67-7

**OSHA**

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

|| Not classified based on available information.

**Ingredients:****2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat

## Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

Application Route: Ingestion  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal 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 fetal 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 fetal development., Reduced maternal body weight gain., Reduced fetal 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 fetal development., Reduced maternal body weight gain., Reduced fetal weight.

### STOT-single exposure

Causes damage to organs (Nervous system).

#### Ingredients:

### lambda-cyhalothrin (ISO):

Target Organs: Nervous system  
Assessment: Causes damage to organs.

### STOT-repeated exposure

Not classified based on available information.

#### Repeated dose toxicity

#### Ingredients:

### 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether:

Species: Rat

## Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

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

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 y  
Target Organs: Nervous system  
Symptoms: Gastrointestinal disturbance, Vomiting, Convulsions

### Titanium dioxide:

Species: Rat  
NOAEL: 24,000 mg/kg  
Application Route: Ingestion  
Exposure time: 28 Days

Species: Rat  
NOAEL: 10 mg/m<sup>3</sup>  
Application Route: inhalation (dust/mist/fume)  
Exposure time: 2 y

### Aspiration toxicity

Not classified based on available information.

### Experience with human exposure

#### Product:

Skin contact : Symptoms: Skin irritation, tingling, superficial burning sensation, Local irritation

# Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

Remarks: Can be absorbed through skin.

Eye contact : Remarks: May irritate eyes.

## Ingredients:

### **lambda-cyhalothrin (ISO):**

Inhalation : Symptoms: Cough, Local irritation

Skin contact : Symptoms: Skin irritation, tingling, superficial burning sensation, Local irritation  
Remarks: Can be absorbed through skin.

Eye contact : Symptoms: Eye irritation

Ingestion : Symptoms: May cause, Gastrointestinal disturbance

## SECTION 12. ECOLOGICAL INFORMATION

### **Ecotoxicity**

#### Ingredients:

#### **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 : 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 fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.18 mg/l  
Exposure time: 35 d

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

# Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

M-Factor (Chronic aquatic toxicity) : 1

Toxicity to microorganisms : EC50: > 1,000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

## 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 (Pimephales promelas (fathead minnow)): 0.000062 mg/l  
Exposure time: 32 d  
Method: OECD Test Guideline 210  
Remarks: Based on data from similar materials

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

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

## Titanium dioxide:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h

Toxicity to algae : EC50 (Skeletonema costatum (marine diatom)): > 10,000 mg/l  
Exposure time: 72 h



## Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

Toxicity to microorganisms : EC50: > 1,000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

### Persistence and degradability

#### Ingredients:

##### Polyvinyl chloride:

Biodegradability : Result: Not readily biodegradable.

##### 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether:

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 0 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D

### Bioaccumulative potential

#### Ingredients:

##### 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)

### Mobility in soil

#### Ingredients:

##### lambda-cyhalothrin (ISO):

Distribution among environmental compartments : log Koc: 5.5

### Other adverse effects

No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

# Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

If not otherwise specified: Dispose of as unused product.

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))
Class	:	9
Packing group	:	III
Labels	:	9

#### IATA-DGR

UN/ID No.	:	UN 3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	956
Packing instruction (passenger aircraft)	:	956

#### IMDG-Code

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

### Domestic regulation

#### 49 CFR

UN/ID/NA number	:	UN 3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))
Class	:	9
Packing group	:	III
Labels	:	CLASS 9

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

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

ERG Code	: 171
Marine pollutant	: yes(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))
Remarks	: Above applies only to containers over 119 gallons or 450 liters., Shipment by ground under DOT is non-regulated; however it may be shipped per the applicable hazard classification to facilitate multi-modal transport involving ICAO (IATA) or IMO.

**SECTION 15. REGULATORY INFORMATION****EPCRA - Emergency Planning and Community Right-to-Know****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Acute Health Hazard  
Chronic Health Hazard

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

2-(2-Butoxyethoxy)ethyl	51-03-6	>= 10 - < 20 %
6-propylpiperonyl ether		

**US State Regulations****Pennsylvania Right To Know**

Polyvinyl chloride	9002-86-2
Soybean oil, epoxidized	8013-07-8
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	51-03-6
lambda-cyhalothrin (ISO)	91465-08-6

**California Prop. 65**

WARNING! This product contains a chemical known in the State of California to cause cancer.  
Titanium dioxide 13463-67-7

**The ingredients of this product are reported in the following inventories:**

AICS	: not determined
DSL	: not determined
IECSC	: not determined

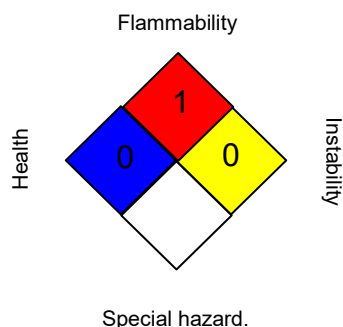
# Lambda-Cyhalothrin / Piperonyl Butoxide Ear Tag

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

## SECTION 16. OTHER INFORMATION

### Further information

#### NFPA:



#### HMIS® IV:

HEALTH	*	4
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

### Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; 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 sub-

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

Version	Revision Date:	SDS Number:	Date of last issue: 03/29/2017
2.0	05/09/2017	1139526-00003	Date of first issue: 12/06/2016

---

stance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance 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

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 05/09/2017

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

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.

US / Z8