

# SAFETY DATA SHEET



## Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

Version  
10.1

Revision Date:  
2025/04/14

SDS Number:  
1366467-00022

Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

---

### 1. PRODUCT AND COMPANY IDENTIFICATION

Chemical product name : Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

#### Supplier's company name, address and phone number

Company name of supplier : MSD

Address : 1-13-12, Kudan-kita, Chiyoda-ku, Tokyo, Japan

Telephone : 03-6272-1099

E-mail address : EHSDATASTEWARD@msd.com

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

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

Recommended use : Veterinary product

Restrictions on use : Not applicable

---

### 2. HAZARDS IDENTIFICATION

#### GHS classification of chemical product

Acute toxicity (Oral) : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 2B

Specific target organ toxicity - single exposure : Category 2 (Nervous system)

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

#### GHS label elements

Hazard pictograms :



Signal word : Warning

# SAFETY DATA SHEET



## Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

Version 10.1      Revision Date: 2025/04/14      SDS Number: 1366467-00022      Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

---

Hazard statements : H302 Harmful if swallowed.  
H315 + H320 Causes skin and eye irritation.  
H371 May cause damage to organs (Nervous system).  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P260 Do not breathe mist or vapours.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.  
P280 Wear protective gloves.

**Response:**  
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P302 + P352 IF ON SKIN: Wash with plenty of water.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P391 Collect spillage.

**Storage:**  
P405 Store locked up.

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

### Other hazards which do not result in classification

None known.

---

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Components

Chemical name	CAS-No.	Concentration (% w/w)	ENCS No.
2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether	51-03-6	5	9-1484
lambda-cyhalothrin (ISO)	91465-08-6	1	-

# SAFETY DATA SHEET



## Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

Version  
10.1

Revision Date:  
2025/04/14

SDS Number:  
1366467-00022

Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

---

### 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 plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
In case of eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention.
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.
Most important symptoms and effects, both acute and delayed	: Harmful if swallowed. Causes skin and eye irritation. May cause 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 (see section 8).
Notes to physician	: Treat symptomatically and supportively.

---

### 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Water spray Alcohol-resistant foam Carbon dioxide (CO <sub>2</sub> ) 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 Nitrogen oxides (NO <sub>x</sub> ) Chlorine compounds Fluorine compounds

**Lambda-Cyhalothrin / Piperonyl Butoxide  
Formulation**Version  
10.1Revision Date:  
2025/04/14SDS Number:  
1366467-00022Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

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.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

**7. HANDLING AND STORAGE****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 get on skin or clothing.  
Do not breathe mist or vapours.  
Do not swallow.  
Do not get in eyes.  
Wash skin thoroughly after handling.

# SAFETY DATA SHEET



## Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

Version  
10.1

Revision Date:  
2025/04/14

SDS Number:  
1366467-00022

Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

Avoidance of contact  
Hygiene measures

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.

- : Oxidizing agents
- : 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.

### Storage

Conditions for safe storage

- : Keep in properly labelled containers.
- : Store locked up.

Store in accordance with the particular national regulations.

Materials to avoid

- : Do not store with the following product types:
- : Oxidizing solids
- : Oxidizing liquids

Packaging material

- : Unsuitable material: None known.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Threshold limit value and permissible exposure limits for each component in the work environment**

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Concentra- tion standard / Permissible con- centration	Basis
2-(2-butoxyethoxy)ethyl 6- propylpiperonyl ether	51-03-6	TWA	4 mg/m <sup>3</sup> (OEB 1)	Internal
lambda-cyhalothrin (ISO)	91465-08-6	TWA	5 µg/m <sup>3</sup> (OEB 4)	Internal
Further information: Skin				
		Wipe limit	50 µg/100 cm <sup>2</sup>	Internal

### Engineering measures

- : The information below is intended for larger pilot/commercial-scale operations and manufacturing. For smaller scale, clinical, or pharmacy settings, site-specific internal risk assessment practices should be conducted to determine appropriate exposure control measures. The health hazard risks of handling this material are dependent on multiple factors, including but not limited to physical form and quantity handled. If

**Lambda-Cyhalothrin / Piperonyl Butoxide Formulation**Version  
10.1Revision Date:  
2025/04/14SDS Number:  
1366467-00022Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

applicable, use process enclosures, local exhaust ventilation (e.g., Biosafety Cabinet, Ventilated Balance Enclosures), or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

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. If handled in a laboratory, use a properly designed biosafety cabinet, fume hood, or other containment device if the potential exists for aerosolization. If this potential does not exist, handle over lined trays or benchtops.

**Personal protective equipment**

Respiratory protection	: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
Filter type	: Combined particulates and organic vapour type
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 contaminated clothing.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	: liquid
Colour	: clear, light yellow
Odour	: mild, oily
Odour Threshold	: No data available
Melting point/freezing point	: No data available

**Lambda-Cyhalothrin / Piperonyl Butoxide  
Formulation**Version  
10.1Revision Date:  
2025/04/14SDS Number:  
1366467-00022Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

Boiling point, initial boiling point and boiling range	: No data available
Flammability (solid, gas)	: Not applicable
Flammability (liquids)	: Not applicable
Lower explosion limit and upper explosion limit / flammability limit	
Upper explosion limit / Up- per flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Flash point	: 105.5 °C
Decomposition temperature	: No data available
pH	: 6.16
Evaporation rate	: No data available
Auto-ignition temperature	: No data available
Viscosity	
Viscosity, kinematic	: No data available
Solubility(ies)	
Water solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Vapour pressure	: No data available
Density and / or relative density	
Relative density	: 0.9326
Density	: No data available
Relative vapour density	: No data available
Explosive properties	: Not explosive
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Molecular weight	: Not applicable
Particle characteristics	

**Lambda-Cyhalothrin / Piperonyl Butoxide Formulation**Version  
10.1Revision Date:  
2025/04/14SDS Number:  
1366467-00022Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

Particle size : Not applicable

**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.

**11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure : Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Harmful if swallowed.

**Product:**

Acute oral toxicity	: LD50 (Rat): 2,000 mg/kg  TDLo (Rat): 300 mg/kg Remarks: No mortality observed at this dose.
Acute inhalation toxicity	: Acute toxicity estimate: > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	: LD50 (Rat): > 2,000 mg/kg

**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

**Lambda-Cyhalothrin / Piperonyl Butoxide Formulation**Version  
10.1Revision Date:  
2025/04/14SDS Number:  
1366467-00022Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

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**

Causes skin irritation.

**Product:**

Species	:	Rabbit
Result	:	irritating

**Components:****2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:**

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation
Assessment	:	Repeated exposure may cause skin dryness or cracking.

**lambda-cyhalothrin (ISO):**

Species	:	Rabbit
Result	:	No skin irritation

**Serious eye damage/eye irritation**

Causes eye irritation.

**Product:**

Species	:	Rabbit
Result	:	Mild eye irritation

**Components:****2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:**

Species	:	Rabbit
---------	---	--------

**Lambda-Cyhalothrin / Piperonyl Butoxide Formulation**Version  
10.1Revision Date:  
2025/04/14SDS Number:  
1366467-00022Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

Result : Irritation to eyes, reversing within 21 days  
Method : OECD Test Guideline 405

**lambda-cyhalothrin (ISO):**

Species : Rabbit  
Result : Mild eye irritation

**Respiratory or skin sensitisation****Skin sensitisation**

Not classified based on available information.

**Respiratory sensitisation**

Not classified based on available information.

**Product:**

Test Type : Local lymph node assay (LLNA)  
Exposure routes : Dermal  
Assessment : Does not cause skin sensitisation.  
Result : negative

Test Type : Magnusson-Kligman-Test  
Exposure routes : Dermal  
Assessment : Not a skin sensitizer.

**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 / Piperonyl Butoxide Formulation**Version  
10.1Revision Date:  
2025/04/14SDS Number:  
1366467-00022Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01**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  
Remarks : Based on data from similar materials

**Lambda-Cyhalothrin / Piperonyl Butoxide Formulation**Version  
10.1Revision Date:  
2025/04/14SDS Number:  
1366467-00022Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01**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**

May cause damage to organs (Nervous system).

**Lambda-Cyhalothrin / Piperonyl Butoxide Formulation**Version  
10.1Revision Date:  
2025/04/14SDS Number:  
1366467-00022Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01**Components:****2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:**

Assessment : May cause respiratory irritation.

**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  
Symptoms : reduced body weight gain, reduced food consumptionSpecies : Rat  
NOAEL : 10 mg/kg  
LOAEL : 50 mg/kg  
Application Route : Dermal  
Exposure time : 21 d  
Target Organs : Nervous systemSpecies : Rat  
NOAEL : 0.08 mg/kg  
LOAEL : 0.9 mg/kg  
Application Route : Inhalation  
Exposure time : 21 d  
Target Organs : Nervous systemSpecies : Dog  
NOAEL : 0.1 mg/kg  
LOAEL : 0.5 mg/kg  
Application Route : Oral  
Exposure time : 1 yr

# SAFETY DATA SHEET



## Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

Version 10.1      Revision Date: 2025/04/14      SDS Number: 1366467-00022      Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

---

Target Organs : Nervous system  
Symptoms : Gastrointestinal disturbance, Vomiting, Convulsions, ataxia, Liver effects

### Aspiration toxicity

Not classified based on available information.

### Experience with human exposure

#### 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

---

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### 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

# SAFETY DATA SHEET



## Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

Version  
10.1

Revision Date:  
2025/04/14

SDS Number:  
1366467-00022

Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

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

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

### **Persistence and degradability**

#### **Components:**

#### **2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 0 %

# SAFETY DATA SHEET



## Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

Version 10.1	Revision Date: 2025/04/14	SDS Number: 1366467-00022	Date of last issue: 2024/12/03 Date of first issue: 2017/03/01
-----------------	------------------------------	------------------------------	---

Exposure time: 28 d  
Method: OECD Test Guideline 301D

### 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)

### Mobility in soil

#### Components:

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

Distribution among environmental compartments : log Koc: 5.5

### Hazardous to the ozone layer

Not applicable

### Other adverse effects

No data available

## 13. DISPOSAL CONSIDERATIONS

#### **Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.  
Do not dispose of waste into sewer.

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.

## 14. TRANSPORT INFORMATION

#### **International Regulations**

##### **UNRTDG**

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))

# SAFETY DATA SHEET



## Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

Version  
10.1

Revision Date:  
2025/04/14

SDS Number:  
1366467-00022

Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

---

Class : 9  
Packing group : III  
Labels : 9  
Environmentally hazardous : yes

### IATA-DGR

UN/ID No. : UN 3082  
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))  
Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 964  
Packing instruction (passenger aircraft) : 964  
Environmentally hazardous : yes

### IMDG-Code

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, 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.

### National Regulations

Refer to section 15 for specific national regulation.

### 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.

ERG Code : 171

---

## 15. REGULATORY INFORMATION

### Related Regulations

#### Fire Service Law

Group 4, Type 3 petroleums, Water insoluble liquid, (2000 litre), Hazardous rank III

**Lambda-Cyhalothrin / Piperonyl Butoxide  
Formulation**Version  
10.1Revision Date:  
2025/04/14SDS Number:  
1366467-00022Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01**Chemical Substance Control Law**

Not applicable for Specified Chemical Substance, Monitoring Chemical Substance and Priority Assessment Chemical Substance.

**Industrial Safety and Health Law****Harmful Substances Prohibited from Manufacture**

Not applicable

**Harmful Substances Required Permission for Manufacture**

Not applicable

**Substances Prevented From Impairment of Health**

Not applicable

**Circular concerning Information on Chemicals having Mutagenicity - Annex 2: Information on Existing Chemicals having Mutagenicity**

Not applicable

**Circular concerning Information on Chemicals having Mutagenicity - Annex 1: Information on Notified Substances having Mutagenicity**

Not applicable

**Substances Subject to be Notified Names**

Law Article 57-2 (Ministerial Order Article 34-2 Appended Table 2)

Chemical name	Concentration (%)	Remarks
rel-(R)-Cyano(3-phenoxyphenyl)methyl (1S,3S)-3-[(Z)-2-chloro-3,3,3-trifluoroprop-1-en-1-yl]-2,2-dimethylcyclopropanecarboxylate	>=1 - <10	From April 1st, 2025

**Substances Subject to be Indicated Names**

Law Article 57 (Ministerial Order Article 30 Appended Table 2)

Chemical name	Remarks
rel-(R)-Cyano(3-phenoxyphenyl)methyl (1S,3S)-3-[(Z)-2-chloro-3,3,3-trifluoroprop-1-en-1-yl]-2,2-dimethylcyclopropanecarboxylate	From April 1st, 2025

**Skin and Eye Damage Substances (ISHL MO Art. 594-2)**

Not applicable

**Carcinogenic Substances (Article 577-2 of the Occupational Health and Safety Regulations)**

Not applicable

**Ordinance on Prevention of Hazards Due to Specified Chemical Substances**

Not applicable

**Ordinance on Prevention of Lead Poisoning**

Not applicable

**Ordinance on Prevention of Tetraalkyl Lead Poisoning**

Not applicable

# SAFETY DATA SHEET



## Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

Version  
10.1

Revision Date:  
2025/04/14

SDS Number:  
1366467-00022

Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

### Ordinance on Prevention of Organic Solvent Poisoning

Not applicable

### Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances)

Not applicable

### Poisonous and Deleterious Substances Control Law

Deleterious substance

Chemical name	Cabinet Order Number
Organic cyanide compounds and preparations	32

### Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

### Class II Designated Chemical Substances

Chemical name	Administration number	Concentration (%)
5-Propan-1-yl-6-(2,5,8-trioxadodecan-1-yl)-1,3-benzodioxol	809	5.0

### High Pressure Gas Safety Act

Not applicable

### Explosive Control Law

Not applicable

### Vessel Safety Law

Miscellaneous dangerous substances and articles (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

### Aviation Law

Miscellaneous dangerous substances and articles (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

### Marine Pollution and Sea Disaster Prevention etc Law

Bulk transportation : Noxious liquid substance(Category Y)

Pack transportation : Classified as marine pollutant

### Narcotics and Psychotropics Control Act

Narcotic or Psychotropic Raw Material (Export / Import Permission)

Not applicable

Specific Narcotic or Psychotropic Raw Material (Export / Import permission)

Not applicable

### Waste Disposal and Public Cleansing Law

Industrial waste

### The components of this product are reported in the following inventories:

AICS : not determined

DSL : not determined

**Lambda-Cyhalothrin / Piperonyl Butoxide  
Formulation**Version  
10.1Revision Date:  
2025/04/14SDS Number:  
1366467-00022Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

IECSC : not determined

**16. OTHER INFORMATION**

In this SDS, if the concentration of substances subject to notification under the Industrial Safety and Health Law is indicated as a range, it includes cases where it is a trade secret.

**Further information**

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

Date format : yyyy/mm/dd

**Full text of other abbreviations**

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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 substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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

# SAFETY DATA SHEET



## Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

Version  
10.1

Revision Date:  
2025/04/14

SDS Number:  
1366467-00022

Date of last issue: 2024/12/03  
Date of first issue: 2017/03/01

---

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.

JP / EN