

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

### SECTION 1. IDENTIFICATION

Product name : Lambda-Cyhalothrin Formulation

#### Manufacturer or supplier's details

Company name of supplier : Merck & Co., Inc  
Address : 126 E. Lincoln Avenue  
Rahway, New Jersey U.S.A. 07065  
Telephone : 908-740-4000  
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  
Restrictions on use : Not applicable

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

##### Hazards for the product as supplied

Acute toxicity (Oral) : Category 4  
Acute toxicity (Inhalation) : Category 3  
Eye irritation : Category 2B  
Specific target organ toxicity : Category 1 (Nervous system)  
- single exposure

##### Other hazards

Contact with dust can cause mechanical irritation or drying of the skin.

##### Hazards associated with a change in physical form:

Conditions	Hazards
If small particles are generated during further processing, handling or by other means.	May form combustible dust concentrations in air.

##### GHS label elements

Hazard pictograms :  

Signal Word : Danger

Hazard Statements : H302 Harmful if swallowed.  
H320 Causes eye irritation.  
H331 Toxic if inhaled.  
H370 Causes damage to organs (Nervous system).

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

### Precautionary Statements

**Prevention:**

P261 Avoid breathing dust, fume, gas, mist, vapors or spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a doctor if you feel unwell. Rinse mouth.  
P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 If eye irritation persists: Get medical attention.

**Storage:**

P405 Store locked up.

**Disposal:**

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

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
Polyvinyl chloride	9002-86-2*	>= 45 - <= 70	TSC
lambda-cyhalothrin (ISO)	91465-08-6*	>= 7 - <= 13	TSC
Titanium dioxide	13463-67-7*	>= 0 - <= 0.1	TSC

\* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

### 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.  
If not breathing, give artificial respiration.  
If breathing is difficult, give oxygen.  
Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

---

- of water.  
Remove 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 eye irritation.  
Toxic if inhaled.  
Causes damage to organs.  
Contact with dust can cause mechanical irritation or drying of the skin.  
No information available.
- 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.
- 

### SECTION 5. FIRE-FIGHTING 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
- 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 fire-fighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/08/2025	11272784-00006	Date of first issue: 09/18/2023

---

### SECTION 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.  
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 : Surround spill with absorbents and place a damp covering over the area to minimize entry of the material into the air.  
Add excess liquid to allow the material to enter into solution.  
Soak up with inert absorbent material.  
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).  
Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.  
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.

---

### SECTION 7. HANDLING AND STORAGE

- Technical measures : Static electricity may accumulate and ignite suspended dust causing an explosion.  
Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
- Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.
- Advice on safe handling : Avoid breathing dust, fume, gas, mist, vapors or spray.  
Do not swallow.  
Do not get in eyes.  
Avoid prolonged or repeated contact with skin.  
Wash skin thoroughly after handling.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Keep container tightly closed.  
Minimize dust generation and accumulation.  
Keep container closed when not in use.  
Keep away from heat and sources of ignition.  
Take precautionary measures against static discharges.  
Do not eat, drink or smoke when using this product.

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

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

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Polyvinyl chloride	9002-86-2	TWA (Respirable particulate matter)	1 mg/m <sup>3</sup>	ACGIH
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
Titanium dioxide	13463-67-7	TWA (Respirable particulate matter)	2.5 mg/m <sup>3</sup> (Titanium dioxide)	ACGIH
		TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1

**This substance(s) is not bioavailable and therefore does not contribute to a dust inhalation hazard.**

Titanium dioxide

- 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 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.

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/08/2025	11272784-00006	Date of first issue: 09/18/2023

---

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 contaminated clothing.
- 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.

---

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

---

Appearance	:	solid
Color	:	violet
Odor	:	characteristic
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	:	Not applicable
Flammability (solid, gas)	:	May form explosive dust-air mixture during processing, handling or other means.
Flammability (liquids)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	Not applicable
Relative vapor density	:	Not applicable
Relative density	:	No data available
Density	:	No data available
Solubility(ies) Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/08/2025	11272784-00006	Date of first issue: 09/18/2023

Molecular weight : No data available

Particle characteristics  
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 : May form explosive dust-air mixture during processing, handling or other means.  
Can react with strong oxidizing agents.

Conditions to avoid : Heat, flames and sparks.  
Avoid dust formation.

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

Harmful if swallowed.  
Toxic if inhaled.

#### Product:

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

Acute inhalation toxicity : Acute toxicity estimate: 0.6 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

#### Components:

##### 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

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

---

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  
Method: OECD Test Guideline 425  
Remarks: The test was conducted according to guideline

Acute inhalation toxicity : LC50 (Rat): > 5.09 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: The test was conducted according to guideline

### **Skin corrosion/irritation**

Not classified based on available information.

### **Components:**

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

Species : Rabbit  
Result : No skin irritation

#### **Titanium dioxide:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
Remarks : The test was conducted equivalent or similar to guideline

### **Serious eye damage/eye irritation**

Causes eye irritation.

### **Components:**

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

Species : Rabbit  
Result : Mild eye irritation

#### **Titanium dioxide:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405  
Remarks : The test was conducted according to guideline

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

---

### Respiratory or skin sensitization

#### Skin sensitization

Not classified based on available information.

#### Respiratory sensitization

Not classified based on available information.

#### Components:

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

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

##### Titanium dioxide:

Test Type : Buehler Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : negative  
Remarks : The test was conducted according to guideline

### Germ cell mutagenicity

Not classified based on available information.

#### Components:

##### 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

##### Titanium dioxide:

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

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

Genotoxicity in vivo	Method: OECD Test Guideline 471 Result: negative Remarks: The test was conducted according to guideline
	Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative Remarks: The test was conducted according to guideline
	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative Remarks: The test was conducted according to guideline
	Test Type: Transgenic rodent somatic cell gene mutation assay Species: Mouse (male) Application Route: Intravenous injection Method: OECD Test Guideline 488 Result: negative Remarks: The test was conducted equivalent or similar to guideline

### Carcinogenicity

Not classified based on available information.

### Components:

#### 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

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.

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

---

### Components:

#### **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.  
Remarks: Based on data from similar materials

#### **Titanium dioxide:**

Effects on fertility : Test Type: Extended one-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 443  
Result: negative  
Remarks: The test was conducted according to guideline

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: negative  
Remarks: The test was conducted according to guideline

#### **STOT-single exposure**

Causes damage to organs (Nervous system).

### Components:

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

Target Organs : Nervous system

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

---

|| Assessment : Causes damage to organs.

### STOT-repeated exposure

Not classified based on available information.

### Repeated dose toxicity

#### Components:

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

#### Titanium dioxide:

|| Species : Rat  
|| NOAEL : >= 1,000 mg/kg  
|| Application Route : Ingestion  
|| Exposure time : 90 Days  
|| Method : OECD Test Guideline 408  
|| Remarks : The test was conducted according to guideline

### Aspiration toxicity

Not classified based on available information.

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

### 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

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### 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
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

##### Titanium dioxide:

Toxicity to fish	:	LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 203 Remarks: The test was conducted according to guideline Based on transformation/dissolution testing and data from soluble metal compounds
------------------	---	---

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: The test was conducted according to guideline

Toxicity to algae/aquatic plants : EL50 (Raphidocelis subcapitata (freshwater green alga)): > 100 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  
Remarks: The test was conducted according to guideline

NOELR (Raphidocelis subcapitata (freshwater green alga)): >= 100 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  
Remarks: The test was conducted according to guideline

Toxicity to microorganisms : NOEC (activated sludge): >= 1,000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: The test was conducted according to guideline

### Persistence and degradability

No data available

### Bioaccumulative potential

#### Components:

#### lambda-cyhalothrin (ISO):

Bioaccumulation : Bioconcentration factor (BCF): 2,240  
Method: OECD Test Guideline 305

Partition coefficient: n-octanol/water : log Pow: 7.0 (68 °F / 20 °C)

### Mobility in soil

#### Components:

#### 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.

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version 5.1      Revision Date: 12/08/2025      SDS Number: 11272784-00006      Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

Contaminated packaging : Do not dispose of waste into sewer.  
: 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

#### International Regulations

##### UNRTDG

UN number : UN 2811  
Proper shipping name : TOXIC SOLID, ORGANIC, N.O.S.  
(lambda-cyhalothrin (ISO))  
Class : 6.1  
Packing group : III  
Labels : 6.1  
Environmentally hazardous : yes

##### IATA-DGR

UN/ID No. : UN 2811  
Proper shipping name : Toxic solid, organic, n.o.s.  
(lambda-cyhalothrin (ISO))  
Class : 6.1  
Packing group : III  
Labels : Toxic  
Packing instruction (cargo aircraft) : 677  
Packing instruction (passenger aircraft) : 670

##### IMDG-Code

UN number : UN 2811  
Proper shipping name : TOXIC SOLID, ORGANIC, N.O.S.  
(lambda-cyhalothrin (ISO))  
Class : 6.1  
Packing group : III  
Labels : 6.1  
EmS Code : F-A, S-A  
Marine pollutant : yes

#### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

#### Domestic regulation

##### 49 CFR

UN/ID/NA number : UN 2811  
Proper shipping name : Toxic solids, organic, n.o.s.  
(lambda-cyhalothrin (ISO))  
Class : 6.1  
Packing group : III  
Labels : TOXIC  
ERG Code : 154  
Marine pollutant : yes(lambda-cyhalothrin (ISO))

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/08/2025	11272784-00006	Date of first issue: 09/18/2023

### 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.

## SECTION 15. REGULATORY INFORMATION

### 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 toxicity (any route of exposure)  
Specific target organ toxicity (single or repeated exposure)  
Serious eye damage or eye irritation

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### US State Regulations

#### Pennsylvania Right To Know

Polyvinyl chloride	9002-86-2
Soybean oil, epoxidized	8013-07-8
Tributyl O-acetylcitrate	77-90-7
lambda-cyhalothrin (ISO)	91465-08-6

#### California Prop. 65

WARNING: This product can expose you to chemicals including Titanium dioxide, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

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

AICS	: not determined
CA. DSL	: not determined
IECSC	: not determined

## SECTION 16. OTHER INFORMATION

### Further information

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

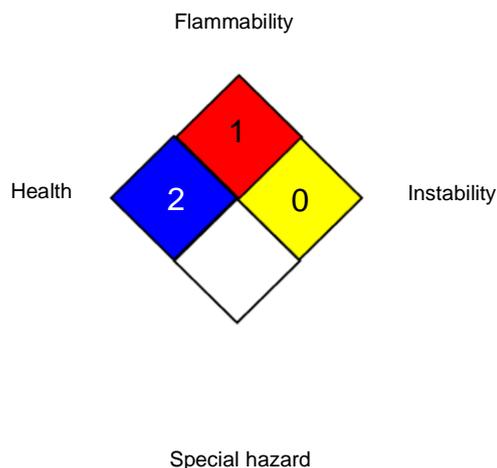
Version  
5.1

Revision Date:  
12/08/2025

SDS Number:  
11272784-00006

Date of last issue: 06/17/2025  
Date of first issue: 09/18/2023

### NFPA 704:



### HMIS® IV:

HEALTH	/	4
FLAMMABILITY		3
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

AIIC - Australian Inventory of Industrial Chemicals; 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 Standardization; 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 Organization 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 substance; 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 concern-

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Lambda-Cyhalothrin Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/08/2025	11272784-00006	Date of first issue: 09/18/2023

---

ing the Registration, Evaluation, Authorization 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; 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

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 : 12/08/2025

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