

**Lambda-Cyhalothrin / Piperonyl Butoxide
Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 03.12.2024
4.0	14.04.2025	1366472-00021	Date of first issue: 01.03.2017

Section 1: Identification

Product identifier : Lambda-Cyhalothrin / Piperonyl Butoxide Formulation

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product
Restrictions on use : Not applicable

Manufacturer or supplier's details

Company : MSD
Address : 50 Tuas West Drive
Singapore - Singapore 638408
Telephone : +1-908-740-4000
Emergency telephone number : 65 6697 2111 (24/7/365)
E-mail address : EHSDATASTEWARD@msd.com

Section 2: Hazard identification**Classification of the substance or mixture**

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, including precautionary statements

Hazard pictograms :



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Signal word : Warning

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.

Section 3: Composition/information on ingredients

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether	51-03-6	≥ 2.5 -< 10
lambda-cyhalothrin (ISO)	91465-08-6	≥ 1 -< 2.5

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Section 4: First-aid measures**Description of necessary first-aid measures**

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|-------------------------|--|
| 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

- | | |
|----------------------------|---|
| Risks | : 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). |

Indication of any immediate medical attention and special treatment needed

- | | |
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| Treatment | : Treat symptomatically and supportively. |
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Section 5: Fire-fighting measures**Extinguishing media**

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| Suitable extinguishing media | : Water spray
Alcohol-resistant foam
Carbon dioxide (CO ₂)
Dry chemical |
| Unsuitable extinguishing media | : None known. |

Special hazards arising from the substance or mixture

- | | |
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| Specific hazards during fire- | : Exposure to combustion products may be a hazard to health. |
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fighting

Hazardous combustion products : Carbon oxides
Nitrogen oxides (NO_x)
Chlorine compounds
Fluorine compounds

Special protective actions for fire-fighters

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

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

Section 6: Accidental release measures**Personal precautions, protective equipment and emergency procedures**

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

Environmental precautions

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

Methods for 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.

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Section 7: Handling and storage**Precautions for safe handling**

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : Use only with adequate ventilation.
- Advice on safe handling : Do not get on skin or clothing.
Do not breathe mist or vapours.
Do not swallow.
Do not get in eyes.
Wash skin thoroughly after handling.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Do not eat, drink or smoke when using this product.
Take care to prevent spills, waste and minimize release to the environment.
- Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.
When using do not eat, drink or smoke.
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.

Conditions for safe storage, including any incompatibilities

- 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:
Strong oxidizing agents

Section 8: Exposure controls/personal protection**Control parameters****Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether	51-03-6	TWA	4 mg/m ³ (OEB 1)	Internal
lambda-cyhalothrin (ISO)	91465-08-6	TWA	5 µg/m ³ (OEB 4)	Internal
Further information: Skin				

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II		Wipe limit	50 µg/100 cm ²	Internal
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Appropriate engineering control 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.

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.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face 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 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.
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.

Section 9: Physical and chemical properties

Appearance	: liquid
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Colour : clear, light yellow

Odour : mild, oily

Odour Threshold : No data available

pH : 6.16

Melting point/freezing point : No data available

Initial boiling point and boiling range : No data available

Flash point : 105.5 °C

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Flammability (liquids) : Not applicable

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : 0.9326

Density : No data available

Solubility(ies)
Water solubility : No data available

Partition coefficient: n-octanol/water : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, kinematic : No data available

Explosive properties : Not explosive

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Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	Not applicable
Particle characteristics	:	
Particle size	:	Not applicable

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	:	Inhalation Skin contact Ingestion Eye contact
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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.
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Acute inhalation toxicity	:	Acute toxicity estimate: > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
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Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg
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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

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	Exposure time: 4 h
	Test atmosphere: dust/mist
	Method: OECD Test Guideline 403
Acute dermal toxicity	: LD50 (Rat): > 2,000 mg/kg
	Method: OECD Test Guideline 402

lambda-cyhalothrin (ISO):

Acute oral toxicity	: LD50 (Rat): 56 - 79 mg/kg
	LD50 (Mouse): 20 mg/kg
Acute inhalation toxicity	: LC50 (Rat): 0.06 mg/l
	Exposure time: 4 h
	Test atmosphere: dust/mist
Acute dermal toxicity	: LD50 (Rat): 632 - 696 mg/kg
Acute toxicity (other routes of administration)	: LD50 (Rat): 250 - 750 mg/kg
	Application Route: Intraperitoneal

Skin corrosion/irritation

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.
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lambda-cyhalothrin (ISO):

Species	: Rabbit
Result	: No skin irritation

Serious eye damage/eye irritation

Causes eye irritation.

Product:

Species	: Rabbit
Result	: Mild eye irritation

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

Species	: Rabbit
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

	: Magnusson-Kligman-Test
	: Dermal
	: 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.

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

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
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lambda-cyhalothrin (ISO):

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

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Exposure time	: 2 Years
Result	: negative
Remarks	: Based on data from similar materials

Reproductive toxicity

Not classified based on available information.

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

Effects on fertility	: Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative
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Effects on foetal development	: Test Type: Embryo-foetal development Species: Rat Application Route: Ingestion Result: negative
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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
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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
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	: 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
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STOT - single exposure

May cause damage to organs (Nervous system).

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 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

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Application Route	: Oral
Exposure time	: 1 yr
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

Section 12: Ecological information**Toxicity****Components:****2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:**

Toxicity to fish	: LC50 (Cyprinodon variegatus (sheepshead minnow)): 3.94 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 0.51 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: ErC50 (Pseudokirchneriella subcapitata (green algae)): 3.89 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (green algae)): 0.824 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	: 1
Toxicity to fish (Chronic toxicity)	: NOEC (Pimephales promelas (fathead minnow)): 0.18 mg/l Exposure time: 35 d

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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 % Exposure time: 28 d Method: OECD Test Guideline 301D
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II**Bioaccumulative potential****Components:****2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:**

Partition coefficient: n-octanol/water	: log Pow: 5
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lambda-cyhalothrin (ISO):

Bioaccumulation	: Bioconcentration factor (BCF): 2,240 Method: OECD Test Guideline 305
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Partition coefficient: n-octanol/water	: log Pow: 7.0 (20 °C)
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Mobility in soil**Components:****lambda-cyhalothrin (ISO):**

Distribution among environmental compartments	: log Koc: 5.5
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Other adverse effects

No data available

Section 13: Disposal considerations**Disposal methods**

Waste from residues	: Do not dispose of waste into sewer. Dispose of in accordance with local regulations.
Contaminated packaging	: Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

Section 14: Transport information**International Regulations****UNRTDG**

UN number	: UN 3082
UN proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))
Transport hazard class(es)	: 9
Packing group	: III
Labels	: 9
Environmental hazards	: yes

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IATA-DGR

UN/ID No.	: UN 3082
UN proper shipping name	: Environmentally hazardous substance, liquid, n.o.s. (2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether, lambda-cyhalothrin (ISO))
Transport hazard class(es)	: 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))
Transport hazard class(es)	: 9
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: yes

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

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**Safety, health and environmental regulations specific for the product in question**

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subject to the requirements in the Act/Regulations.

Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations	: Pyrethroid compounds used as pesticides
Fire Safety (Petroleum and Flammable Materials) Regulations	: Not applicable

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

AICS	: not determined
DSL	: not determined

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IECSC : not determined

Section 16: Other information

Revision Date : 14.04.2025

Further informationSources 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/>

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

Date format : dd.mm.yyyy

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

**Lambda-Cyhalothrin / Piperonyl Butoxide
Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 03.12.2024
4.0	14.04.2025	1366472-00021	Date of first issue: 01.03.2017

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