

Lambda-Cyhalothrin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 01.10.2022
6.6	30.09.2023	1133926-00016	Date of first issue: 02.12.2016

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Lambda-Cyhalothrin Liquid Formulation

Manufacturer or supplier's details

Company : MSD

Address : Rua Coronel Bento Soares, 530
Cruzeiro - Sao Paulo - Brazil CEP 12730-340

Telephone : 908-740-4000

Emergency telephone : 1-908-423-6000

E-mail address : EHSDATASTEWARD@msd.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 ABNT NBR 14725 Standard**

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 5

Skin irritation : Category 2

Eye irritation : Category 2B

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

Specific target organ toxicity - : Category 3
single exposure

Aspiration hazard : Category 1


Short-term (acute) aquatic : Category 1
hazard

Long-term (chronic) aquatic : Category 1
hazard

GHS label elements in accordance with ABNT NBR 14725 Standard

Lambda-Cyhalothrin Liquid Formulation

Version 6.6 Revision Date: 30.09.2023 SDS Number: 1133926-00016 Date of last issue: 01.10.2022
 Date of first issue: 02.12.2016

- Hazard pictograms : 
- Signal Word : Danger
- Hazard Statements : H304 May be fatal if swallowed and enters airways.
 H313 May be harmful in contact with skin.
 H315 + H320 Causes skin and eye irritation.
 H332 Harmful if inhaled.
 H335 May cause respiratory irritation.
 H371 May cause damage to organs (Nervous system).
 H410 Very toxic to aquatic life with long lasting effects.
- Precautionary Statements : **Prevention:**
 P264 Wash skin thoroughly after handling.
 P273 Avoid release to the environment.
 P280 Wear protective gloves.
- Response:**
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 P331 Do NOT induce vomiting.
 P391 Collect spillage.

Other hazards which do not result in classification

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
1,2,4-Trimethylbenzene	95-63-6	Flammable liquids, Category 3 Acute toxicity (Oral), Category 5 Acute toxicity (Inhalation), Category 4 Skin irritation, Category 2 Specific target organ toxicity - single exposure, Category 3 Aspiration hazard, Category 1 Short-term (acute) aquatic hazard, Category 2 Long-term (chronic) aquatic hazard, Category 2	>= 90 -<= 100

Lambda-Cyhalothrin Liquid Formulation

Version 6.6 Revision Date: 30.09.2023 SDS Number: 1133926-00016 Date of last issue: 01.10.2022
 Date of first issue: 02.12.2016

lambda-cyhalothrin (ISO)	91465-08-6	Acute toxicity (Oral), Category 3 Acute toxicity (Inhalation), Category 2 Acute toxicity (Dermal), Category 3 Eye irritation, Category 2B Specific target organ toxicity - single exposure (Nervous system), Category 1 Short-term (acute) aquatic hazard, Category 1 Long-term (chronic) aquatic hazard, Category 1	>= 5 -< 10
--------------------------	------------	--	------------

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 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.
 If vomiting occurs have person lean forward.
 Call a physician or poison control center immediately.
 Rinse mouth thoroughly with water.
 Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : May be fatal if swallowed and enters airways.
 May be harmful in contact with skin.
 Causes skin and eye irritation.
 Harmful if inhaled.
 May cause respiratory irritation.
 May cause damage to organs.
- Protection of first-aiders : First Aid responders should pay attention to self-protection,

Lambda-Cyhalothrin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 01.10.2022
6.6	30.09.2023	1133926-00016	Date of first issue: 02.12.2016

Notes to physician : and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
: Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
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_x)
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.

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.
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 diking or other appropriate containment to keep material from spreading. If diked 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.

Lambda-Cyhalothrin Liquid Formulation

Version 6.6 Revision Date: 30.09.2023 SDS Number: 1133926-00016 Date of last issue: 01.10.2022
 Date of first issue: 02.12.2016

SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.
- Advice on safe handling : Do not get on skin or clothing.
 Do not breathe mist or vapors.
 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
 Keep container tightly closed.
 Already sensitized individuals, and those susceptible to asthma, allergies, chronic or recurrent respiratory disease, should consult their physician regarding working with respiratory irritants or sensitizers.
 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 : 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
1,2,4-Trimethylbenzene	95-63-6	TWA	10 ppm	ACGIH

Lambda-Cyhalothrin Liquid Formulation

Version 6.6 Revision Date: 30.09.2023 SDS Number: 1133926-00016 Date of last issue: 01.10.2022
 Date of first issue: 02.12.2016

lambda-cyhalothrin (ISO)	91465-08-6	TWA	5 µg/m ³ (OEB 4)	Internal
Further information: Skin				
		Wipe limit	50 µg/100 cm ²	Internal

Engineering measures : 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 vapor 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : off-white

Odor : solvent

Odor Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling range : > 100 °C

Flash point : > 100 °C

Lambda-Cyhalothrin Liquid Formulation

Version 6.6 Revision Date: 30.09.2023 SDS Number: 1133926-00016 Date of last issue: 01.10.2022
Date of first issue: 02.12.2016

Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	1,036 g/cm ³
Solubility(ies)	:	
Water solubility	:	dispersible
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	Not applicable
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.

Lambda-Cyhalothrin Liquid Formulation

Version 6.6 Revision Date: 30.09.2023 SDS Number: 1133926-00016 Date of last issue: 01.10.2022
Date of first issue: 02.12.2016

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

May be harmful in contact with skin.
Harmful if inhaled.

Product:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 4,62 mg/l
Exposure time: 4 h

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg

Components:**1,2,4-Trimethylbenzene:**

Acute oral toxicity : LD50 (Rat): 3.280 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 10,2 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 3.160 mg/kg

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

Lambda-Cyhalothrin Liquid Formulation

Version 6.6 Revision Date: 30.09.2023 SDS Number: 1133926-00016 Date of last issue: 01.10.2022
Date of first issue: 02.12.2016

Components:

1,2,4-Trimethylbenzene:

Species : Rabbit
Result : Skin irritation
Remarks : Based on data from similar materials

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:

1,2,4-Trimethylbenzene:

Species : Rabbit
Result : No eye irritation
Remarks : Based on data from similar materials

lambda-cyhalothrin (ISO):

Species : Rabbit
Result : Mild eye irritation

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Species : Rabbit
Result : Weak sensitizer

Components:

1,2,4-Trimethylbenzene:

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

Lambda-Cyhalothrin Liquid Formulation

Version 6.6 Revision Date: 30.09.2023 SDS Number: 1133926-00016 Date of last issue: 01.10.2022
Date of first issue: 02.12.2016

lambda-cyhalothrin (ISO):

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

Germ cell mutagenicity

Not classified based on available information.

Components:**1,2,4-Trimethylbenzene:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Test Type: Mutagenicity (in vitro mammalian cytogenetic test)
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative
Remarks: Based on data from similar materials

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

Lambda-Cyhalothrin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 01.10.2022
6.6	30.09.2023	1133926-00016	Date of first issue: 02.12.2016

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

Reproductive toxicity

Not classified based on available information.

Components:

1,2,4-Trimethylbenzene:

Effects on fertility : Test Type: Three-generation reproduction toxicity study
 Species: Rat
 Application Route: inhalation (vapor)
 Result: negative
 Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development
 Species: Rat
 Application Route: inhalation (vapor)
 Method: OECD Test Guideline 414
 Result: negative

lambda-cyhalothrin (ISO):

Effects on fertility : Test Type: Three-generation study
 Species: Rat
 Application Route: oral (feed)
 General Toxicity Parent: NOAEL: 2 mg/kg body weight
 General Toxicity F1: LOAEL: 6,7 mg/kg body weight
 Symptoms: Reduced offspring weight gain.
 Result: No effects on fertility.
 Remarks: Based on data from similar materials

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

Lambda-Cyhalothrin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 01.10.2022
6.6	30.09.2023	1133926-00016	Date of first issue: 02.12.2016

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

STOT-single exposure

May cause respiratory irritation.
 May cause damage to organs (Nervous system).

Components:

1,2,4-Trimethylbenzene:

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:

1,2,4-Trimethylbenzene:

Species : Rat
 NOAEL : 600 mg/kg
 Application Route : Ingestion
 Exposure time : 90 Days
 Method : OECD Test Guideline 408
 Remarks : Based on data from similar materials

Species : Rat
 NOAEL : 1230 mg/m³
 Application Route : inhalation (vapor)
 Exposure time : 90 Days

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

Lambda-Cyhalothrin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 01.10.2022
6.6	30.09.2023	1133926-00016	Date of first issue: 02.12.2016

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

Aspiration toxicity

May be fatal if swallowed and enters airways.

Product:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Components:

1,2,4-Trimethylbenzene:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Experience with human exposure

Product:

Inhalation	:	Symptoms: Respiratory disorder, Central nervous system depression
Skin contact	:	Symptoms: tingling, Itching, Burn, Skin irritation
Eye contact	:	Symptoms: Eye irritation
Ingestion	:	Symptoms: Gastrointestinal disturbance, Breathing difficulties

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

Lambda-Cyhalothrin Liquid Formulation

Version 6.6 Revision Date: 30.09.2023 SDS Number: 1133926-00016 Date of last issue: 01.10.2022
 Date of first issue: 02.12.2016

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

1,2,4-Trimethylbenzene:

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 7,72 mg/l
 Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3,6 mg/l
 Exposure time: 48 h
 Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 2,356 mg/l
 Exposure time: 96 h

Ecotoxicology Assessment

- Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

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

Lambda-Cyhalothrin Liquid Formulation

Version 6.6 Revision Date: 30.09.2023 SDS Number: 1133926-00016 Date of last issue: 01.10.2022
Date of first issue: 02.12.2016

Persistence and degradability**Components:****1,2,4-Trimethylbenzene:**

Biodegradability : Result: Readily biodegradable.
Biodegradation: 60 %
Exposure time: 28 d

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 (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 : 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
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(lambda-cyhalothrin (ISO))
Class : 9
Packing group : III
Labels : 9
Environmentally hazardous : yes

IATA-DGR

UN/ID No. : UN 3082

Lambda-Cyhalothrin Liquid Formulation

Version 6.6 Revision Date: 30.09.2023 SDS Number: 1133926-00016 Date of last issue: 01.10.2022
Date of first issue: 02.12.2016

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(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.
(lambda-cyhalothrin (ISO))
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes

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

Not applicable for product as supplied.

Domestic regulation**ANTT**

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(lambda-cyhalothrin (ISO))
Class : 9
Packing group : III
Labels : 9
Hazard Identification Number : 90

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/legislation specific for the substance or mixture**

National List of Carcinogenic Agents for Humans - (LINACH) : Not applicable

Brazil. List of chemicals controlled by the Federal Police : Not applicable

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

Lambda-Cyhalothrin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 01.10.2022
6.6	30.09.2023	1133926-00016	Date of first issue: 02.12.2016

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

SECTION 16. OTHER INFORMATION

Revision Date	:	30.09.2023
Date format	:	dd.mm.yyyy

Further information

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/
--	---	---

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA	:	8-hour, time-weighted average

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; TECl - 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 Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 01.10.2022
6.6	30.09.2023	1133926-00016	Date of first issue: 02.12.2016

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.

BR / Z8