SAFETY DATA SHEET
Lambda-Cyhalothrin Liquid Formulation

Version 4.3 Revision Date: 2020/03/23 SDS Number: 1133933-00010
Date last issue: 2019/09/13 Date of first issue: 2016/12/02

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Lambda-Cyhalothrin Liquid Formulation

Manufacturer or supplier’s details
Company: MSD
Address: JL Raya Pandaan KM. 48
Pandaan, Jawa Timur - Indonesia
Telephone: 908-740-4000
Emergency telephone number: 1-908-423-6000
E-mail address: EHSDATASTEWARD@msd.com
Telefax: 908-735-1496

Recommended use of the chemical and restrictions on use
Recommended use: Veterinary product

2. HAZARDS IDENTIFICATION

GHS Classification
Acute toxicity (Inhalation): Category 4
Skin corrosion/irritation: Category 2
Serious eye damage/eye irritation: Category 2B
Specific target organ toxicity - single exposure: Category 2 (Nervous system)
Specific target organ toxicity - single exposure: Category 3
Aspiration hazard: Category 1
Short-term (acute) aquatic hazard: Category 1
Long-term (chronic) aquatic hazard: Category 1

GHS label elements
Hazard pictograms:
Lambda-Cyhalothrin Liquid Formulation

**Signal word**: Danger

**Hazard statements**:
- H304 May be fatal if swallowed and enters airways.
- 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**:
- P260 Do not breathe mist or vapours.
- 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.
- P273 Avoid release to the environment.
- P280 Wear protective gloves.

**Response**:
- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
- P302 + P352 IF ON SKIN: Wash with plenty of water.
- P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
- 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.
- P331 Do NOT induce vomiting.
- P332 + P313 If skin irritation occurs: Get medical advice/ attention.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.
- P362 + P364 Take off contaminated clothing and wash it before reuse.
- P391 Collect spillage.

**Storage**:
- P405 Store locked up.

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

**Other hazards which do not result in classification**
None known.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance / Mixture**: Mixture

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
</table>

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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 centre 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. 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, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Notes to physician: Treat symptomatically and supportively.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical

 Unsuitable extinguishing media: None known.

Specific hazards during firefighting: Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides Nitrogen oxides (NOx) 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 firefighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

### 6. ACCIDENTAL RELEASE MEASURES

| Personal precautions, protective equipment and emergency procedures | Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations. |
| Environmental precautions | Discharge into the environment must be avoided. 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 dyeing or other appropriate containment to keep material from spreading. If dyed material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

### 7. HANDLING AND STORAGE

| 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 vapours or spray mist. Do not swallow. Do not get in eyes. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment. Keep container tightly closed. Already sensitised individuals should consult their physician regarding working with respiratory irritants or sensitisers. Take care to prevent spills, waste and minimize release to the environment. |
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Conditions for safe storage:
- Keep in properly labelled 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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
<td>NAB</td>
<td>25 ppm</td>
<td>ID OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>123 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>25 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td>lambda-cyhalothrin (ISO)</td>
<td>91465-08-6</td>
<td>TWA</td>
<td>5 µg/m3 (OEB 4)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Skin</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wipe limit</td>
<td>50 µg/100 cm²</td>
<td>Internal</td>
</tr>
</tbody>
</table>

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 vapour type

Hand protection:
- Material: Chemical-resistant gloves
- Remarks: Consider double gloving.

Eye protection:
- Material: 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:
- Material: 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance**: liquid
- **Colour**: off-white
- **Odour**: solvent-like
- **Odour 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
- **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
- **Vapour pressure**: No data available
- **Relative vapour density**: No data available
- **Relative density**: No data available
- **Density**: 1.036 g/cm³
- **Solubility(ies)**
  - **Water solubility**: dispersible
- **Partition coefficient: n-**: No data available
octanol/water
Auto-ignition 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

10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reac-
tions : Can react with strong oxidizing agents.
Conditions to avoid : None known.
Incompatible materials : Oxidizing agents
Hazardous decomposition products : No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity
Harmful if 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: vapour
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

**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 sensitisation
Skin sensitisation
Not classified based on available information.
Respiratory sensitisation
Not classified based on available information.

Product:
Species : Rabbit
Result : Weak sensitizer

Components:
1,2,4-Trimethylbenzene:
Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : negative

lambda-cyhalothrin (ISO):
Test Type : Magnusson-Kligman-Test
Exposure routes : Dermal
Species : Guinea pig
Result : Not a skin sensitizer.

Germ cell mutagenicity
Not classified based on available information.

Components:
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
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**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

### Carcinogenicity

Not classified based on available information.

### Components:

#### lambda-cyhalothrin (ISO):

<table>
<thead>
<tr>
<th>Species</th>
<th>Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>oral (feed)</td>
</tr>
<tr>
<td>Exposure time</td>
<td>2 Years</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>oral (feed)</td>
</tr>
<tr>
<td>Exposure time</td>
<td>2 Years</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

### Reproductive toxicity

Not classified based on available information.

### Components:

#### 1,2,4-Trimethylbenzene:

<table>
<thead>
<tr>
<th>Effects on fertility</th>
<th>Test Type: Three-generation reproduction toxicity study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Rat</td>
</tr>
<tr>
<td>Application Route</td>
<td>inhalation (vapour)</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>
Remarks: Based on data from similar materials

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

Test Type: Development
Species: Rabbit
Application Route: Oral
General Toxicity Maternal: NOAEL: 10 mg/kg body weight
Developmental Toxicity: NOAEL: 30 mg/kg body weight
Result: No effects on foetal development, Reduced maternal body weight gain, Reduced foetal weight
Remarks: Based on data from similar materials

**STOT - single exposure**
May cause 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 (vapour)
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
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 yr
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

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

**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
13. DISPOSAL CONSIDERATIONS

Disposal methods

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

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

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

IATA-DGR

UN/ID No.: UN 3082
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.

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.
15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

Regulation of the Minister of Health No. 472 of 1996 on the Safeguarding of Substances Hazardous to Health
Hazardous substances that must be registered : Not applicable

Government Regulation No. 74 of 2001 on the Management of Hazardous and Toxic Substances
Hazardous substances approved for use : Not applicable
Prohibited substances : Not applicable
Restricted substances : Not applicable

Regulation of the Minister of Trade No. 44 of 2009 on Procurement, Distribution and Supervision of Hazardous Materials
Type of Hazardous Materials Restricted to Import, Distribution and Supervision : Not applicable

The components of this product are reported in the following inventories:
AICS : not determined
DSL : not determined
IECSC : not determined

16. OTHER INFORMATION

Further information
Date format : yyyy/mm/dd

Full text of other abbreviations
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ID OEL : Indonesia. Occupational Exposure Limits
ACGIH / TWA : 8-hour, time-weighted average
ID OEL / NAB : Long term exposure limit
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<table>
<thead>
<tr>
<th>Version</th>
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<th>SDS Number</th>
<th>Date of last issue</th>
<th>Date of first issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3</td>
<td>2020/03/23</td>
<td>1133933-00010</td>
<td>2019/09/13</td>
<td>2016/12/02</td>
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</tbody>
</table>

AICS - Australian Inventory of Chemical Substances; 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; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for 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.

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