



DEPENDABLE PEST MANAGEMENT

Demand CS

COMMON NAME: lambda-cyhalothrin (Commodore WP, Demand CS)

STATEMENT OF PRACTICAL TREATMENT: If swallowed: Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. If in eyes: Wash with plenty of water. Get medical attention if irritation persists. If on skin: Wash with plenty of soap and water. Get medical attention if irritation persists. If inhaled: Remove victim to fresh air. If not breathing, give artificial respiration, preferably by mouth-to-mouth.

PRECAUTIONARY STATEMENT: May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Causes eye irritation May cause allergic skin reaction. Do not get in eyes, on skin or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling.

ENVIRONMENTAL HAZARDS: This product is extremely toxic to fish.

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Syngenta Crop Protection, Inc.
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Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name: **DEMAND CS** Product No.: A12690A
EPA Signal Word: Caution
Active Ingredient(%): Lambda-Cyhalothrin Technical (9.7%) CAS No.: 91465-08-6
Chemical Name: [1a(S*),3a(Z)]-cyano(3-phenoxyphenyl)methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate
Chemical Class: A pyrethroid insecticide
EPA Registration Number(s): 100-1066 Section(s) Revised: **2, 3, 8, 12, 15**

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Xylene (< 1%)	100 ppm TWA	100 ppm TWA; 150 ppm STEL	100 ppm TWA**	IARC Group 3
1,2,4-Trimethylbenzene (<= 2.2%)	Not Established	25 ppm TWA	25 ppm TWA**	No
Cumene (< 1%)	50 ppm TWA (skin)	50 ppm TWA	Not Established	No
Petroleum Solvent	Not Established	Not Established	100 mg/m ³ (19 ppm) TWA*	No
Lambda-Cyhalothrin Technical (9.7%)	Not Established	Not Established	0.04 mg/m ³ TWA (skin)***	No

* recommended by manufacturer

** recommended by NIOSH

*** Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

3. HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

May cause eye and skin irritation. Allergic skin reactions are possible.

May cause temporary itching, tingling, burning or numbness of exposed skin, called paresthesia.

Exposure to high vapor levels may cause headache, dizziness, numbness, nausea, incoordination, or other central nervous system effects.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Off-white liquid

Odor: Slight odor/typical aromatic solvent

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

- Ingestion: If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Notes to Physician

There is no specific antidote if this product is ingested.

Treat symptomatically.

Skin contact paresthesia effects (itching, tingling, burning or numbness) are transient, lasting up to 24 hours. Treat symptomatically.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

- Flash Point (Test Method): > 212°F (Setaflash)
- Flammable Limits (% in Air): Lower: % Not Applicable Upper: % Not Applicable
- Autoignition Temperature: Not Available
- Flammability: Not Applicable

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions in Protective Equipment Section. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact: Where eye contact is likely, use chemical splash goggles.

Skin Contact: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear. Stringent housekeeping measures are necessary to prevent translocation of the material from contaminated work surfaces to uncontaminated surfaces (railings, doors, etc.). Unprotected contact with such translocated material can result in paresthesia effects (see Section 11).

Inhalation: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Off-white liquid

Odor: Slight odor/typical aromatic solvent

Melting Point: Not Available

Boiling Point: 212°F

Specific Gravity/Density: 1.04 @ 68°F (20°C)

pH: 7.3 (1% w/w dilution in deionized water)

Solubility in H₂O

Lambda-Cyhalothrin Technical: 0.004 mg/l

Vapor Pressure

Lambda-Cyhalothrin Technical: 1.5 x 10⁽⁻⁹⁾ mmHg @ 68°F (20°C)

10. STABILITY AND REACTIVITY

Stability: Stable under normal use and storage conditions.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: None known.

Materials to Avoid: None known.

Hazardous Decomposition Products: Can decompose at high temperatures forming toxic gases.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

Ingestion: Practically Non-Toxic
Oral (LD50 Rat) : > 5,000 mg/kg body weight

Dermal: Slightly Toxic
Dermal (LD50 Rat) : > 2,000 mg/kg body weight

Inhalation: Practically Non-Toxic
Inhalation (LC50 Rat) : > 4.62 mg/l air - 4 hours

Eye Contact: Mildly Irritating (Rabbit)

Skin Contact: Moderately Irritating (Rabbit)

Skin Sensitization: A weak skin sensitizer in animal tests.

Reproductive/Developmental Effects

Lambda-Cyhalothrin Not a developmental or reproductive toxicant.
Technical:

Chronic/Subchronic Toxicity Studies

Lambda-Cyhalothrin Reversible paresthesia (abnormal skin sensation).
Technical: Reversible clinical signs of neurotoxicity in mammals.

Carcinogenicity

Lambda-Cyhalothrin No treatment-related tumors in rats or mice.
Technical:

Other Toxicity Information

In humans, contact with exposed skin may result in temporary itching, tingling, burning or numbness, called paresthesia. The effect may result from splash, aerosol, or hot vapor contact, or transfer to the face from contaminated gloves and hands. The symptoms normally disappear within 24 hours. Face and genital areas are especially susceptible to this effect. Paresthesia involving the face is also known as "subjective facial sensation" or SFS.

Toxicity of Other Components

1,2,4-Trimethylbenzene (<= 2.2%)

Inhalation of 1,2,4-trimethylbenzene at high concentrations can cause central nervous system depression, respiratory tract irritation, asphyxiation, cardiac stress and coma. Effects of chronic exposure to this solvent can include blood disorders (anemia, leukopenia) and kidney or liver damage.

Cumene (< 1%)

Exposure to cumene vapors may cause irritation to eyes, skin, and respiratory tract. Cumene may also cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects. Prolonged exposure to high concentrations (>100 PPM) may result in liver, kidney or lung damage.

Petroleum Solvent

The supplier reports that high vapor/aerosol concentrations (> 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects.

Xylene (< 1%)

Inhalation of xylene at high concentrations can cause central nervous system depression, respiratory tract irritation, asphyxiation, cardiac stress and coma.

Target Organs

Active Ingredients

Lambda-Cyhalothrin Technical: Liver, nervous system

Inert Ingredients

1,2,4-Trimethylbenzene: CNS, liver, kidney, blood, respiratory tract, skin, eye

Cumene: Skin, eye, liver, respiratory tract, kidney, CNS

Petroleum Solvent: Eye, respiratory tract, CNS

Xylene: CNS, respiratory tract, skin

12. ECOLOGICAL INFORMATION

Summary of Effects

Lambda-Cyhalothrin Technical:
Slightly toxic to birds. Highly toxic to fish, invertebrates and bees.

Eco-Acute Toxicity

Lambda- Bees LC50/EC50 0.038 ug/bee
Cyhalothrin Invertebrates (Water Flea) LC50/EC50 0.00036 ppm
Technical: Fish (Trout) LC50/EC50 0.00024 ppm
 Fish (Bluegill) LC50/EC50 0.00021 ppm
 Birds (8-day dietary - Bobwhite Quail) LC50/EC50 > 5,300 ppm

Birds (8-day dietary - Mallard Duck) LC50/EC50 > 3,948 ppm

Eco-Chronic Toxicity

Lambda-
Cyhalothrin
Technical: Not available at this time.

Environmental Fate

Lambda-Cyhalothrin Technical:

No data available for the formulation. The information presented here is for the active ingredient, lambda-cyhalothrin. A thorough review of environmental information is not possible in this document.

Not persistent in soil or water. Immobile in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Xylene U239

14. TRANSPORT INFORMATION

DOT Classification

Not regulated by DOT.

B/L Freight Classification

Insecticides, NOIBN, o/t poison

Comments

None.

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: Xylene (< 1%) (CAS No. 1330-20-7)
1,2,4-Trimethylbenzene (<= 2.2%) (CAS No. 95-63-6)
Cumene (< 1%) (CAS No. 98-82-8)

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

Report product spills > 520 gal. (based on xylene [RQ = 100 lbs.] content in the formulation)

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
Flammability: 1
Instability: 0

HMIS Hazard Ratings

Health: 2
Flammability: 1
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 07/14/1999

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Replaces: 12/27/2001

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

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End of MSDS