# MATERIAL SAFETY DATA SHEET

**Syngenta Crop Protection, LLC**
**Post Office Box 18300**
**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 (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: 11**

## 2. HAZARDS IDENTIFICATION

Health and Environmental

Harmful if inhaled. May be harmful in contact with skin. May cause an allergic skin reaction. Causes mild skin irritation. Vapors may cause drowsiness and dizziness. May be harmful if swallowed and enters airway. May cause temporary itching, tingling, burning or numbness of exposed skin, called paresthesia.

Hazardous Decomposition Products

None known.

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.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Material | OSHA PEL | ACGIH TLV | Other | NTP/IARC/OSHA Carcinogen |
|---|---|---|---|---|
| Cumene (< 1%) | 50 ppm TWA (skin) | 50 ppm TWA | Not Established | No |
| Petroleum Solvent | Not Established | Not Established | 100 mg/m³ (19 ppm) TWA * | No |
| Propylene Glycol | Not Established | Not Established | 10 mg/m³ TWA **** | No |
| 1,2,4-Trimethylbenzene (< 2.5%) | Not Established | 25 ppm TWA | 25 ppm TWA ** | No |
| Xylene (< 1%) | 100 ppm TWA | 100 ppm TWA; 150 ppm STEL | 100 ppm TWA ** | IARC Group 3 |
| Lambda-Cyhalothrin (9.7%) | Not Established | Not Established | 0.04 mg/m³ TWA (skin) *** | No |

* recommended by manufacturer

** recommended by NIOSH

*** Syngenta Occupational Exposure Limit (OEL)

**** Recommended by AIHA (American Industrial Hygiene Association)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: C, S

## 4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison contol 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.

Persons suffering a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids.

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

Contains petroleum distillate - vomiting may cause aspiration pneumonia.

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 AND PACKAGING 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 gloves (such as barrier laminate, butyl rubber, nitrile rubber or Viton), coveralls, socks and chemical-resistant footwear.<br>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: | A combination particulate/organic vapor respirator should be used until effective engineering controls are installed to comply with occupational exposure limits, or until exposure limits are established. Use a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P or HE filter.<br><br>Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any 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 Applicable |
| Boiling Point: | 212 °F |
| Specific Gravity/Density: | 1.036 @ 68°F (20°C) |
| pH: | 7.3 (1% w/w dilution in deionized water) |

Solubility in H2O

Lambda-Cyhalothrin : 0.004 mg/l

Vapor Pressure

Lambda-Cyhalothrin : 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: | None known. |

## 11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

| | | |
|---|---|---|
| Ingestion: | | |
| | Oral (LD50 Rat) : | > 5000 mg/kg body weight |
| Dermal: | | |
| | Dermal (LD50 Rat) : | > 2000 mg/kg body weight |
| Inhalation: | | |
| | Inhalation (LC50 Rat) : | > 4.62 mg/l air - 4 hours |
| Eye Contact: | Non-Irritating (Rabbit) | |
| Skin Contact: | Practically Non-Irritating (Rabbit) | |
| Skin Sensitization: | A weak skin sensitizer in animal tests. | |

Reproductive/Developmental Effects

Lambda-Cyhalothrin : Not a developmental or reproductive toxicant.

Chronic/Subchronic Toxicity Studies

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

Carcinogenicity

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

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 (< 2.5%)

Test results reported in Section 11 for the final product take into account any acute hazards related to the 1,2,4-trimethylbenzene in the formulation.

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.

Propylene Glycol

Test results reported in Section 11 for the final product take into account any acute hazards related to the propylene glycol in the formulation.
Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Chronic dietary exposure caused kidney and liver injury in experimental animals.

Xylene (< 1%)

Test results reported in Section 11 for the final product take into account any acute hazards related to the xylene in the formulation.

Target Organs

Active Ingredients

Lambda-Cyhalothrin : Liver, nervous system

Inert Ingredients

1,2,4-Trimethylbenzene: Not Applicable

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

Petroleum Solvent: Eye, respiratory tract, CNS

Propylene Glycol: CNS, kidney, liver
Xylene: Not Applicable

## 12. ECOLOGICAL INFORMATION

Ecotoxicity Effects

Lambda-Cyhalothrin :

Fish (Rainbow Trout) 96-hour LC50 0.19 ppb
Bird (Mallard Duck) LD50 Oral > 3950 mg/kg
Invertebrate (Water Flea) 48-hour EC50 0.04 ppb

Environmental Fate

Lambda-Cyhalothrin :

The information presented here is for the active ingredient, lambda-cyhalothrin.
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: Not Applicable

## 14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA
Containers < 450 liters: Not regulated.
Containers > 450 liters:
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Lambda-Cyhalothrin)
Hazard Class or Division: Class 9
Identification Number: UN 3082
Packing Group: PG III

Comments

Water Transport - International
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Lambda-Cyhalothrin), Marine Pollutant
Hazard Class or Division: Class 9
Identification Number: UN 3082
Packing Group: PG III

Air Transport
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Lambda-Cyhalothrin)
Hazard Class or Division: Class 9
Identification Number: UN 3082
Packing Group: PG III

## 15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard

Section 313 Toxic Chemicals: Cumene (< 1%) (CAS No. 98-82-8)
1,2,4-Trimethylbenzene (< 2.5%) (CAS No. 95-63-6)
Xylene (< 1%) (CAS No. 1330-20-7)

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 | | HMIS Hazard Ratings | |
|---|---|---|---|
| Health: | 2 | Health: | 2 |
| Flammability: | 1 | Flammability: | 1 |
| Instability: | 0 | 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: 7/14/1999
Revision Date: 7/14/2011 Replaces: 7/13/2010

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End of MSDS