

**Syngenta Crop Protection, Inc.**  
**Post Office Box 18300**  
**Greensboro, NC 27419**

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

**1. PRODUCT IDENTIFICATION**

Product Name: **WARRIOR INSECTICIDE with ZEON TECHNOLOGY** Product No.: A12838B

EPA Signal Word: Warning

Active Ingredient(%): Lambda-Cyhalothrin (11.4%) 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): 100-1112 **Section(s) Revised: 2, 3, 4, 8, 12, 13**

**2. HAZARDS IDENTIFICATION**
Health and Environmental

Harmful if swallowed. Irritating to eyes and skin. Vapors may cause drowsiness and dizziness.  
 May cause temporary itching, tingling, burning or numbness of exposed skin, called paresthesia.

Hazardous Decomposition Products

May decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Blue opaque liquid (capsule suspension)  
 Odor: Not determined

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 |
|----------------------------|-----------------|-------------------|---------------------------------------|--------------------------|
| Naphthalene (<= 1.5%)      | 10 ppm TWA      | 10 ppm TWA (skin) | 10 ppm TWA **                         | See "Toxicity", Sec. 11  |
| Propylene Glycol           | Not Established | Not Established   | 50 ppm TWA ****                       | No                       |
| Petroleum Solvent          | Not Established | Not Established   | 100 mg/m <sup>3</sup> (15 ppm) TWA *  | No                       |
| Lambda-Cyhalothrin (11.4%) | Not Established | Not Established   | 0.04 mg/m <sup>3</sup> 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 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.

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): > 200°F
- 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 CO<sub>2</sub> 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 outlined in Section 8. 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 gloves (such as barrier laminate, nitrile rubber, neoprene rubber or Viton), 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 of MSDS). Do not touch unprotected skin areas (face) with contaminated gloves or clothing.
- Inhalation: A combination particulate/ organic vapor respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with an HE prefilter.

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: Blue opaque liquid (capsule suspension)
- Odor: Not determined
- Melting Point: Not Applicable
- Boiling Point: Not Available
- Specific Gravity/Density: 1.07 g/ml @ 68°F (20°C)
- pH: 5

### Solubility in H2O

Lambda-Cyhalothrin : 0.004mg/l

### Vapor Pressure

Lambda-Cyhalothrin :  $1.5 \times 10^{-9}$  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: May decompose at high temperatures forming toxic gases.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity/Irritation Studies (Finished Product)

Ingestion: Moderately Toxic

|                     |                              |                           |
|---------------------|------------------------------|---------------------------|
|                     | Oral (LD50 Rat) :            | = 351 mg/kg body weight   |
| Dermal:             | <u>Slightly Toxic</u>        |                           |
|                     | Dermal (LD50 Rat) :          | > 2,000 mg/kg body weight |
| Inhalation:         | <u>Practically Non-Toxic</u> |                           |
|                     | Inhalation (LC50 Rat) :      | > 2.5 mg/l air - 4 hours  |
| Eye Contact:        | Mildly Irritating (Rabbit)   |                           |
| Skin Contact:       | Slightly Irritating (Rabbit) |                           |
| Skin Sensitization: | Not Available                |                           |

#### 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

##### Naphthalene (<= 1.5%)

Exposure to naphthalene can cause cataracts, liver damage, kidney failure, respiratory failure, hematuria, anemia, damage to red blood cells, leukocytosis, or coma.

Carcinogen Status:

NTP: Anticipated Carcinogen

IARC: Group 2B Possible Human Carcinogen

##### Petroleum Solvent

Inhalation of vapors at high concentrations can cause central nervous system effects (dizziness, headache), irritation to eyes or respiratory tract.

##### Propylene Glycol

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Also, eye irritation may occur with lacrimation but no residual discomfort or injury. Prolonged contact to skin may cause mild to moderate irritation and possible allergic reactions. Chronic dietary exposure caused kidney and liver injury in experimental animals.

#### Target Organs

##### Active Ingredients

Lambda-Cyhalothrin : Liver, nervous system

##### Inert Ingredients

Naphthalene: Eye, liver, kidney, respiratory tract, blood, CNS

Petroleum Solvent: Respiratory tract, stomach, liver, thyroid, urinary bladder, CNS, skin

Propylene Glycol: CNS, skin, eye, kidney, liver

## **12. ECOLOGICAL INFORMATION**

#### Summary of Effects

Lambda-Cyhalothrin :

Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

### Eco-Acute Toxicity

#### Lambda-Cyhalothrin :

- Fish (Rainbow Trout) 96-hour LC50 0.19 ppb
- Fish (Bluegill Sunfish) 96-hour LC50 0.21 ppb
- Bird (Mallard Duck) LD50 Oral > 3950 mg/kg
- Bird (Mallard Duck) 8-day dietary LC50 > 3948
- Bee (Contact) LD50 0.038 ug/bee
- Invertebrate (Water Flea) 48-hour EC50 0.04 ppb
- Bird (Bobwhite Quail) 8-day dietary LC50 > 5300 ppm

### Eco-Chronic Toxicity

#### Lambda-Cyhalothrin :

- Invertebrate (Water Flea) 21-day LOEC 0.0035 ppb
- Bird (Mallard Duck) Reproduction 19-week LOEL > 30 ppm
- Fish (Fathead Minnow) 300-day LOEC 0.062 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: Contains Naphthalene U165

## **14. TRANSPORT INFORMATION**

### DOT Classification

- Ground Transport - NAFTA
- Proper Shipping Name: Pyrethroid Pesticides, Liquid, Toxic, (contains Lambda-Cyhalothrin)
- Hazard Class or Division: 6.1
- Identification Number: UN 3352
- Packing Group: PG III

### B/L Freight Classification

Insecticides, NOI, Poison

### Comments

- Water Transport - International
- Proper Shipping Name: Pyrethroid Pesticides, Liquid, Toxic, (contains Lambda-Cyhalothrin)
- Hazard Class or Division: 6.1
- Identification Number: UN 3352
- Packing Group: PG III

- Air Transport - International
- Proper Shipping Name: Pyrethroid Pesticides, Liquid, Toxic, (contains Lambda-Cyhalothrin)
- Hazard Class or Division: 6.1
- Identification Number: UN 3352
- Packing Group: PG III
- Comment: Maximum Quantity/Pkg: 60L (2.5L max inner containers)

## **15. REGULATORY INFORMATION**

EPCRA SARA Title III Classification

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

Section 313 Toxic Chemicals: Naphthalene (<= 1.5%) (CAS No. 91-20-3)

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

Report product spills > 800 gal. (based on naphthalene [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: 12/12/2000

Revision Date: 7/17/2007

Replaces: 10/4/2004

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.

End of MSDS