

ENDIGO® ZC

Date: 6/22/2015
Replaces: 2/2/2015

1. PRODUCT IDENTIFICATION

Product identifier on label: **ENDIGO® ZC**
Product No.: A13623B
Use: Insecticide
Manufacturer: Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro NC 27419
Manufacturer Phone: 1-800-334-9481

Emergency Phone: 1-800-888-8372

2. HAZARDS IDENTIFICATION

Classifications: Skin Corrosion/Irritation: Category 2
Oral: Category 4
Inhalation: Category 4
Skin Sensitizer: Category 1B
Specific Target Organ Toxicity: Repeated Category 2
Specific Target Organ Toxicity: Drowsiness Category 3
Specific Target Organ Toxicity: Respiratory Irritation Category 3
Eye Damage/Irritation: Category 2B
Carcinogenicity: Category 1B

Signal Word (OSHA): Danger

Hazard Statements: Harmful if swallowed
Causes skin irritation
May cause an allergic skin reaction
Causes eye irritation
Harmful if inhaled
May cause respiratory irritation
May cause drowsiness or dizziness
May cause cancer
May cause damage to organs through prolonged or repeated exposure

Hazard Symbols:



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- Precautionary Statements:**
- Contaminated work clothing must not be allowed out of the workplace.
 - If skin irritation or rash occurs: Get medical advice.
 - Wash contaminated clothing before reuse.
 - Obtain special instructions before use.
 - Do not handle until all safety precautions have been read and understood.
 - Do not breathe mist, vapors, spray.
 - Wash hands and face thoroughly after handling.
 - Do not eat, drink or smoke when using this product.
 - Use only outdoors or in a well-ventilated area.
 - Wear protective gloves, protective clothing, eye protection.
 - If swallowed: Call a poison center, doctor or Syngenta if you feel unwell. Rinse mouth.
 - If on skin: Wash with plenty of soap and water.
 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - If eye irritation persists: Get medical advice.
 - If exposed or concerned: Get medical advice/attention.
 - Call a poison center, doctor or Syngenta if you feel unwell.
 - See Section 4 First Aid Measures.
 - If skin irritation occurs: Get medical advice.
 - Take off contaminated clothing and wash it before reuse.
 - Store locked up.
 - Dispose of contents and container in accordance with local regulations.
- Other Hazard Statements:** May cause temporary itching, tingling, burning or numbness of exposed skin, called paresthesia.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Naphthalene	Naphthalene	91-20-3	<5%
Glycerin	Glycerin	56-81-5	Trade Secret
Titanium Dioxide	Titanium Dioxide	13463-67-7	Trade Secret
Petroleum Solvent	Petroleum Solvent	Trade Secret	Trade Secret
Other ingredients	Other ingredients	Trade Secret	>82.92%
[1a(S*),3a(Z)]-cyano(3-phenoxyphenyl)methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate	Lambda-Cyhalothrin	91465-08-6	9.48%
3-(2-chloro-1,3-thiazol-5-ylmethyl)-5-methyl-1,3,5-oxadiazinan-4-ylidene(nitro)amine	Thiamethoxam	153719-23-4	12.60%

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

4. FIRST AID MEASURES

Have the product container, label or 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.

Most important symptoms/effects:

- Eye irritation
- Skin irritation
- Allergic skin reaction
- Drowsiness or dizziness
- May cause temporary itching, tingling, burning or numbness of exposed skin, called paresthesia
- Respiratory irritation

Indication of immediate medical attention and special treatment needed:

- 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.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

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

Special protective equipment and precautions for firefighters:

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and

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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

Precautions for safe handling:

Handle this material only in electrically conductive equipment. Electrically ground and bond this equipment as well as any worker who could contact a dust cloud formed of this material. Eliminate the presence of mechanical sparks and other ignition sources where dust clouds of this material could form. Bulk bags (FIBC) used to contain this material should be only type C. Type C bags must be electrically grounded before powder is charged into the bag or discharged from the bag. Bag filters used to scavenge dust from material handling processes should be conductive and electrically grounded during use.

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.

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.

Conditions for safe storage, including any incompatibilities:

Store locked up.

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.

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Naphthalene	10 ppm TWA	10 ppm TWA (skin)	10 ppm TWA	NIOSH
Glycerin	15 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)	Not Established	Not Established	Not Applicable
Titanium Dioxide	15 mg/m ³ TWA (total)	10 mg/m ³ TWA	2.4 mg/m ³ 10-hr TWA (fine dust); 0.3 mg/m ³ (ultrafine dust)	Manufacturer
Petroleum Solvent	Not Established	Not Established	50 mg/m ³ (8 ppm) TWA	Manufacturer
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Lambda-Cyhalothrin	Not Established	Not Established	0.04 mg/m ³ TWA (skin)	Syngenta
Thiamethoxam	Not Established	Not Established	3 mg/m ³ TWA	Syngenta

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Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

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 or Viton), coveralls, socks and chemical-resistant footwear.

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 and possible sensitization (see Section 11). Do not touch unprotected skin areas (face) with contaminated gloves or clothing.

Wash thoroughly with soap and water immediately after handling.

Inhalation:

Avoid breathing air from drum headspace.

Use local exhaust ventilation or air-supplied respiratory protection when dispensing heated material to control exposure to lambda-cyhalothrin vapor and hazardous headspace gases.

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 (for example, during spill response activities).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light beige liquid

Odor: Aromatic

Odor Threshold: Not Available

pH: 6 - 7 @ 1% w/v

Melting point/freezing point: Not Applicable

Initial boiling point and boiling range: Not Available

Flash Point (Test Method): > 216°F

Flammable Limits (% in Air): Not Available

Flammability: Not Applicable

Vapor Pressure: Lambda-Cyhalothrin 1.5 x 10⁽⁻⁹⁾ mmHg @ 68°F (20°C)Thiamethoxam 2 x 10⁽⁻¹¹⁾ mmHg @ 68°F (20°C)

Vapor Density: Not Available

Relative Density: 1.12 g/ml @ 68°F (20°C)

Solubility (ies): Lambda-Cyhalothrin 0.004 mg/l

Thiamethoxam 4.1 g/l @ 77°F (25°C)

Partition coefficient: n-octanol/water: Not Available

Autoignition Temperature: Not Available

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Decomposition Temperature: Not Available

Viscosity: Not Available

Other: None

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical stability: Stable under normal use and storage conditions.

Possibility of hazardous reactions: Will not occur.

Conditions to Avoid: None known.

Incompatible materials: None known.

Hazardous Decomposition Products: Hazardous decomposition gases may develop in the headspace of containers at normal storage and handling temperatures.

11. TOXICOLOGICAL INFORMATIONHealth effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation, Drowsiness or dizziness, Skin irritation, Respiratory irritation, Itching, tingling, burning or numbness

Delayed, immediate and chronic effects of exposure: Eye irritation, Skin irritation, Allergic skin reaction, Drowsiness or dizziness, Respiratory irritation, Paresthesia

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion:	Oral (LD50 Female Rat) :	310.2 mg/kg body weight
Dermal:	Dermal (LD50 Rat) :	> 2000 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 2.15 < 5 mg/l air - 4 hours
Eye Contact:	Mildly Irritating (Rabbit)	
Skin Contact:	Moderately Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Lambda-Cyhalothrin : Not a developmental or reproductive toxicant.

Thiamethoxam: Developmental: Not teratogenic in rats or rabbits.

Reproductive: No effects on reproduction. Minor increase in a common testis effect in rats at high doses, which did not affect reproduction.

Chronic/Subchronic Toxicity Studies

Lambda-Cyhalothrin : Reversible paresthesia (abnormal skin sensation).

Reversible clinical signs of neurotoxicity in mammals.

Thiamethoxam: Subchronic: Liver effects occurred in rodents only at high dose levels. Not neurotoxic after high acute and subchronic exposure in rats.

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Carcinogenicity

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

Thiamethoxam: Classified as "not likely to be carcinogenic in humans" based on lifetime studies in mice and rats.

Chemical Name	NTP/IARC/OSHA Carcinogen
Naphthalene	See "Toxicity", Sec. 11
Glycerin	No
Titanium Dioxide	IARC Group 2B
Petroleum Solvent	No
Other ingredients	No
[1a(S*),3a(Z)]-cyano(3-phenoxyphenyl)methyl- 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2- dimethylcyclopropanecarboxylate	No
3-(2-chloro-1,3-thiazol-5-ylmethyl)-5-methyl- 1,3,5-oxadiazinan-4-ylidene(nitro)amine	No

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

Glycerin

Repeated or prolonged exposure to concentrated solutions may result in dermatitis.

Naphthalene

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

Other ingredients

Not Applicable

Petroleum Solvent

Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage. May be irritating to the eyes, nose, throat and lungs.

Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination.

Titanium Dioxide

Titanium dioxide is listed as an IARC Group 2B (Possibly Carcinogenic to Humans).

Prolonged exposure causes respiratory irritation and may lead to pulmonary fibrosis.

Normal handling and field strength application of this product are not expected to result in exposures exceeding the occupational exposure limit(s) for this ingredient.

Target Organs

Active Ingredients

Lambda-Cyhalothrin : Liver, nervous system

Thiamethoxam: Liver

Inert Ingredients

Glycerin: Skin

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

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Other ingredients:	Not Applicable
Petroleum Solvent:	Respiratory tract, stomach, liver, thyroid, urinary bladder, CNS, skin
Titanium Dioxide:	Lung

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

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

Thiamethoxam:

Fish (Rainbow Trout) 96-hour LC50 > 100 ppm
 Bird (Mallard Duck) LD50 Oral 576 mg/kg
 Invertebrate (Daphnia Magna) 48-hour EC50 > 106 ppm
 Green Algae 4-day EC50 > 97 ppm

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).

Thiamethoxam:

The information presented here is for the active ingredient, thiamethoxam.
 Not persistent in soil. Stable in water. Moderate mobility in soil. Floats 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: 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: Class 9
 Identification Number: UN 3082

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Packing Group: PG III

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

15. REGULATORY INFORMATION

Pesticide Registration:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Warning: May be fatal if swallowed. Causes skin irritation and moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes. Do not get on skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

EPA Registration Number(s):
 100-1276

EPCRA SARA Title III Classification:

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

Section 313 Toxic Chemicals: Naphthalene <5% (CAS No. 91-20-3)

California Proposition 65:

This product contains a chemical(s) known to the state of California to cause cancer and birth defects or other reproductive harm.

CERCLA/SARA 304 Reportable Quantity (RQ):

Report product spills > 1,250 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
*	Chronic

Syngenta Hazard Category: D,S

For non-emergency questions about this product call:

1-800-334-9481

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Section(s) Revised: 2, 4, 11

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