

ENDIGO® ZCX

Date: 5/16/2018
 Replaces: 5/2/2018

1. PRODUCT IDENTIFICATION

Product identifier on label: **ENDIGO® ZCX**
 Product No.: A18481A
 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: Oral: Category 4
 Eye Damage/Irritation: Category 2A
 Respiratory Sensitizer: Category 1B
 Carcinogenicity: Category 1A
 Inhalation: Category 2
 Skin Sensitizer: Category 1

Signal Word (OSHA): Warning

Hazard Statements: Harmful if swallowed
 May cause an allergic skin reaction
 Causes serious eye irritation
 Fatal if inhaled
 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)

Hazard Symbols:



Precautionary Statements: Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not breathe mist, vapors, spray.
 Avoid breathing 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.

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Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves, protective clothing, eye protection.
In case of inadequate ventilation wear respiratory protection. See Section 8 Exposure Control/Personal Protection.
Wear 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 inhaled: If breathing is difficult, 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 exposed or concerned: Get medical advice/attention.
Immediately call a poison center, doctor or Syngenta.
Specific treatment is urgent (see Section 4 First Aid Measures).
See Section 4 First Aid Measures.
If skin irritation or rash occurs: Get medical advice.
If eye irritation persists: Get medical advice.
If experiencing respiratory symptoms: Call a poison center, doctor or Syngenta.
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: None

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | Common Name | CAS Number | Concentration |
|---|--------------------------|--------------|---------------|
| Phosphoric Acid | Phosphoric Acid | Trade Secret | <1% |
| Toluene-2,4-Diisocyanate | Toluene-2,4-Diisocyanate | Trade Secret | <2% |
| Toluene-2,6-Diisocyanate | Toluene-2,6-Diisocyanate | Trade Secret | <1% |
| Solvent Naptha (Petroleum), Heavy Aromatic | Aromatic Solvent | 64742-94-5 | <7% |
| [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 | 9.59% |
| 3-(2-chloro-1,3-thiazol-5-ylmethyl)-5-methyl-1,3,5-oxadiazinan-4-ylidene(nitro)amine | Thiamethoxam | 153719-23-4 | 19.17% |

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

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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:

Skin 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 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.

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7. HANDLING AND STORAGE

Precautions for safe 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 |
|--------------------------|--|---|---|----------------|
| Phosphoric Acid | 1 mg/m ³ TWA | 1 mg/m ³ TWA; (STEL=3 mg/m ³) | 1 mg/m ³ TWA; (STEL=3 mg/m ³) | NIOSH |
| Toluene-2,4-Diisocyanate | 0.02 ppm Ceiling; 0.14 mg/m ³ Ceiling | 0.005 ppm TWA; 0.02 ppm STEL | 2.5 ppm IDLH | NIOSH |
| Toluene-2,6-Diisocyanate | Not Established | 0.005 ppm TWA; 0.02 ppm STEL | None listed | Not Applicable |
| Aromatic Solvent | Not Established | Not Established | 50 mg/m ³ (8 ppm) TWA | Manufacturer |
| Lambda-Cyhalothrin | Not Established | Not Established | 0.04 mg/m ³ TWA (skin) | Syngenta |
| Thiamethoxam | Not Established | Not Established | 3 mg/m ³ TWA | Manufacturer |

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, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride [PVC] 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 (see Section 11 of MSDS). Do not touch unprotected skin areas (face) with contaminated gloves or clothing.

Inhalation:

A respirator is not normally required when handling this substance. Use effective engineering controls to comply with

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occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Off-white liquid

Odor: Strong aromatic

Odor Threshold: Not Available

pH: 6.3 (1% solution in deionized H₂O @ 77°F [25°C])

Melting point/freezing point: Not Available

Initial boiling point and boiling range: Not Applicable

Flash Point (Test Method): > 214°F (Pensky-Martens CC)

Flammable Limits (% in Air):

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: 1.1293 g/ml

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

Thiamethoxam 4.1 g/l @ 77°F (25°C)

Partition coefficient: n-octanol/water:

Autoignition Temperature: Not Available

Decomposition Temperature: Not Available

Viscosity: Not Available

Other:

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: None known.

11. TOXICOLOGICAL INFORMATIONHealth effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Skin irritation

Delayed, immediate and chronic effects of exposure: Possible carcinogenicity, Skin irritation

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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) : > 5000 mg/kg body weight
 Inhalation: Inhalation (LC50 Rat) : > 2.51 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.

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 |
|---------------|--------------------------|
|---------------|--------------------------|

| | |
|---|----|
| Phosphoric Acid | No |
| Toluene-2,4-Diisocyanate | No |
| Toluene-2,6-Diisocyanate | No |
| Solvent Naptha (Petroleum), Heavy Aromatic | 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

Aromatic Solvent
 May cause irritation to the eyes, skin and respiratory system.
 May cause dizziness or drowsiness. Aspiration hazard.

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Phosphoric Acid

Corrosive to eyes, skin and respiratory tract. Can cause skin and eye burns. Inhalation of the mist/vapor can be irritating to mucous membranes. Ingestion can cause burns, stomach pains, nausea, vomiting, diarrhea, shock and death.

Toluene-2,4-Diisocyanate

May cause severe irritation to eyes. A skin irritant and a skin sensitizer. A lung irritant and a lung sensitizer. Slightly hazardous in case of ingestion.

Toluene-2,6-Diisocyanate

May be fatal if inhaled. Causes eye, skin and respiratory tract irritation. May cause allergic respiratory and skin reaction.

Target Organs

Active Ingredients

Lambda-Cyhalothrin : Liver, nervous system
Thiamethoxam: Liver

Inert Ingredients

Aromatic Solvent: Eye, skin, respiratory system, nervous system
Phosphoric Acid: Eye, skin, digestive tract, respiratory tract
Toluene-2,4-Diisocyanate: Eye, skin, lung, digestive tract
Toluene-2,6-Diisocyanate: Eye, skin, 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:

Bird (Mallard Duck) LD50 Oral 576 mg/kg
Invertebrate (Daphnia Magna) 48-hour EC50 > 106 ppm
Fish (Rainbow Trout) 96-hour LC50 > 100 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, CGA293343.
Not persistent in soil. Stable in water. Moderate mobility in soil. Floats in water (after 24 h).

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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

Not regulated

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

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 moderate eye irritation. Do not get in eyes, on skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

EPA Registration Number(s):

100-1458

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: See Section 2 Hazards

Section 313 Toxic Chemicals: Toluene-2,4-Diisocyanate <2% (CAS No. 584-84-9)

Toluene-2,6-Diisocyanate <1% (CAS No. 91-08-7)

Aromatic Solvent <7% (CAS No. 64742-94-5)

CERCLA/SARA 304 Reportable Quantity (RQ):

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Not Applicable

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

Original Issued Date: 3/9/2011

Revision Date: 5/16/2018

Replaces: 5/2/2018

Section(s) Revised: 3

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