

MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection Canada Inc.
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SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

- a. **Product Identifier:** HELIX[®]
Registration Number: 26637
Formulation Number: A-2608A
Chemical Classes: Product contains a mixture of 3 Fungicides + an Insecticide; consisting of a Triazole Fungicide, a Substituted Benzodioxalcarbonitrile Fungicide, a Phenylamide Fungicide and a Neonicotinoid Insecticide.
- b. **Name of Supplier, Address and Emergency Telephone Number:** See above.
- c. **Name of Manufacturer, Address and Emergency Telephone Number:** See above.
- d. **Product Use:** A seed treatment for canola and mustard.
- e. **Date of MSDS Preparation (Y/M/D):** 03-09-18
- f. **Name and Telephone Number of Party Responsible for MSDS Preparation:**
Prepared by Regulatory & Biology Development Department of Syngenta Crop Protection Canada, Inc. For further information, please contact Claudia Thum at (519) 837-5338

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

- a. **Chemical Identity and CAS Registry No. of hazardous ingredients (WHMIS Controlled Products) present at 1.0%, or 0.1% as appropriate, by weight.** None other than in 2g
- b. **Ingredients presented which are on the WHMIS Ingredient Disclosure List at, or above, the minimum concentration specified on the List.** None
- c. **Ingredients with unknown toxicological properties** None
- d. **Ingredients the supplier believes may be harmful:** Titanium Dioxide
- e. **Generic chemical identity and Registry Number for trade secret ingredients registered under the Hazardous Minerals Information Review Commission:** Not applicable
- g. **Ingredient concentration in units of wt./wt., vol./vol. or wt./vol. expressed as:**
i) actual concentration, or ii) a range as specified in the Controlled Products Regulations.
CGA-169374 (Difenoconazole) - 1.28% (w/w). CAS Number 119446-68-3
1H-1,2,4-triazole, 1-[[2-[2-Chloro-4-(4-(chlorophenoxy)phenyl)-(4-methyl-1,3-dioxolan-2-yl)-methyl]-CGA-173506 (Fludioxonil) - 0.13% (w/w). CAS Number 131341-86-1
1H-Pyrrole-3-carbonitrile,4-(2,2-difluoro-1,3-benzodioxol-4-yl)-
CGA-329351 - 0.40% (w/w). CAS Number Mixture.
D-Alanine, N-(2,6-dimethylphey)-N-(methoxyacetyl)-, methyl ester
CGA 293343 - 10.7% (w/w). CAS Number 153719-23-4
4H-1,3,5-Oxadiazin-4-imine,3-[(2-chloro-5-thiazolyl)methyl]tetrahydro-5-methyl-N-nitro
- h. **Exposure limits for ingredients:** Particulates Not Otherwise Classified
ACGIH TLV-TWA 10 mgm/m³ (total dust)
OSHA PEL 15 mgm/m³ (total dust)

SECTION 3 HAZARDS IDENTIFICATION

Notes to Physician:

There is no specific antidote if this product is ingested. Treat symptomatically. Induce emesis or lavage stomach.

Symptoms of Acute Exposure:

Exposure can result in minimal eye or skin irritation.

Hazardous Decomposition Products:

None known.

Physical Properties:

Appearance: Light Blue Coloured Liquid.

Odour: Paint like odour.

Unusual Fire, Explosion and Reactivity Hazards:

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

SECTION 4 FIRST AID MEASURES

If POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Syngenta Emergency Line [1-800-327-8633 (1-800-FASTMED)], for further information.

FIRST AID INSTRUCTIONS:

EYES: Flush eyes with copious amounts of clean water for 15 minutes, holding eye lids apart in order to rinse the entire surface of the eye and lids. Do not apply any medicating agents except on the advice of a physician. Obtain medical attention if irritation occurs.

INGESTION: If victim is fully conscious, give a large quantity of water to drink and induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or poison control centre immediately.

INHALATION: Move victim from contaminated area to fresh air. Apply artificial respiration if necessary.

SKIN: Remove contaminated clothing and thoroughly wash the affected parts of the body with soap and water, including hair and under fingernails. Do not apply any medicating agents except on the advice of a physician.
Decontaminate removed clothing prior to use.

Notes to Physician:

There is no specific antidote for this product if ingested. Treat symptomatically. Induce emesis or lavage stomach.

Medical Condition Likely to be Aggravated by Exposure:

None known.

SECTION 5 FIRE FIGHTING MEASURES

1. **Flash point (Test method):** > 104.4°C.
2. **Upper and lower flammable (explosive) limits in air:** Not available.
3. **Autoignition temperature:** Not applicable.
4. **Hazardous combustion products:** Thermal decomposition products may include carbon monoxide and carbon dioxide.
5. **Conditions under which flammability could occur:** Product is Non Flammable.
6. **Extinguishing media:** Use dry chemical, foam or CO₂.
7. **Special fire fighting procedures:** Self-contained breathing apparatus and full protective clothing are to be worn. 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.
8. **Sensitivity to explosion by mechanical impact:** None.
9. **Sensitivity to explosion by static discharge:** None.

SECTION 6 ACCIDENTAL RELEASE MEASURES

- a. **Procedures for dealing with a release or spill:**
Wear chemical safety glasses with side shields or chemical goggles, gauntlet style chemical-resistant gloves, rubber boots, chemical-resistant coveralls over long sleeve shirt and long pants, head gear, and appropriate respiratory protection (e.g. NIOSH approved half-mask respirator with suitable dust/mist pre-cartridges, fresh-air hood or a self-contained breathing apparatus).

For small spills: Absorb the spill with an absorbent material as pet litter and then sweep up, placing the sweepings in an approved chemical container. Wash the spill area with water containing a strong detergent and absorb with pet litter or other absorbent material. Sweep up and place the sweepings in a chemical container. Seal the container and handle in an approved manner. Label the waste as per provincial regulations. Flush the area with water to remove the last traces of residue. Do not allow the wash water to contaminate water supplies. Follow local spill reporting regulations.

SECTION 7 HANDLING AND STORAGE

- a. **Handling practices:**
KEEP OUT OF REACH OF CHILDREN and DOMESTIC ANIMALS. Store the material in a well ventilated, secure area. Avoid contact with skin, eyes and clothing. Wear appropriate protective clothing. Do not eat, drink or smoke during handling. At end of work shift or breaks, remove protective clothing and wash hands before eating, smoking, drinking or using the toilet. Clean up spilled material immediately; and clean up equipment and work area after use.
- b. **Appropriate storage practices/requirements:**
Store the product in its original container in a well-ventilated, cool, dry, secure area set aside for pesticides. Keep out of the reach of unauthorised persons. Keep separate from other pesticide products to prevent cross contamination. Rotate stock. Clean up any spilled product immediately. If bags containing treated seeds are torn open, patch immediately. Always wash thoroughly after handling. PREVENT PRODUCT FROM FREEZING.
- c. **National Fire Code Classification:** Not applicable

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

- a. **Applicable control measures, including engineering controls:** Ensure work areas have good ventilation. Warehouses, production areas, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities. KEEP OUT OF REACH OF CHILDREN AND ANIMALS. Keep out of water supplies, ground water or open water. This product is practically non-toxic to birds but is toxic to aquatic invertebrates and fish.
- b. **Personal protective equipment for each exposure route:**
- Ingestion: Do not eat, drink, use tobacco or apply cosmetics in areas where there is potential for exposure to the material. Always wash after handling.
- Eye contact: If practical, wear safety glasses with side shield or chemical goggles.
- Skin contact: For treating seed, equipment cleaning and maintenance – chemical-resistant coveralls over long sleeve shirt and long pants, gauntlet-style chemical-resistant gloves and head gear.
For bagging, sewing and stacking bags - regular coveralls over long sleeve shirt and long pants, chemical-resistant gloves and head gear
For forklift operation in plant - regular coveralls over long sleeve shirt, long pants and gloves.
- Inhalation: For treating seed, equipment cleaning and maintenance - respiratory protection (e.g. half-mask respirator with suitable dust filter or fresh-air hood).
For bagging, sewing and stacking bags - respiratory protection (e.g. single use dust mask, quarter or half-mask respirator, fresh air hood).
For forklift operation in plant - respiratory protection not required

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

- a. **Appearance of Formulation:** Light blue coloured liquid
- b. **Formulation type:** Liquid seed treatment.
- c. **Odour:** Paint like
- d. **pH (1% aqueous dispersion):** 7 - 9 (typical)
- e. **Vapour pressure and reference temperature:** Not available
- f. **Vapour density:** Not available
- g. **Boiling point:** Not available
- h. **Freezing point:** -20°C
- i. **Specific gravity or density:** 1.30 g/mL
- j. **Evaporation rate:** Not available
- k. **Water/oil partition coefficient:** Not available
- l. **Odour threshold:** Not available
- m. **Viscosity:** 600 - 800 cps
- n. **Solubility in water:** Miscible

SECTION 10 STABILITY AND REACTIVITY

- a. **Chemical stability:** Stable under normal use and storage conditions.
- b. **Conditions to avoid:** Temperatures above 30°C
- c. **Incompatibility with other materials:** None known
- d. **Hazardous decomposition products:** Can decompose at high temperatures forming toxic gases.
- e. **Hazardous polymerization:** Will not occur

SECTION 11 TOXICOLOGICAL INFORMATION

Information on Product:

- a. LD50 (species and route)**
Acute Oral LD50 (Rat): > 5,000 mg/kg body weight Practically Non-Toxic.
Acute Dermal LD50 (Rabbit): > 2,000 mg/kg body weight Slightly Toxic.
- b. Inhalation LC50**
4 hour acute (Rat): > 2.67 mg/l air (4 hours) Slightly Toxic.
- c. Irritation Data**
Eye (Rabbit): Mildly Irritating.
Skin (Rabbit): Non-Irritating.
- d. Sensitisation Data**
Skin (Guinea pig): Not a Sensitiser.

Information on Fungicide/Insecticide Components:

Mutagenic Potential:

CGA-169374	None observed.
CGA-173506	Genotoxic in one study; negative in five others.
CGA-329351	None observed.
CGA-293343	Negative in Ames, Mouse micronucleus and CHO assays.

Reproductive Hazard Potential:

CGA-169374	None observed.
CGA-173506	Delayed development at doses causing maternal toxicity.
CGA-329352	None observed.
CGA-293343	Developmental delays at maternally toxic doses.

Chronic/Subchronic Toxicity Studies:

CGA-169374	Kidney and liver effects at high doses (>5,000ppm; rats); Eye effects in dogs at high doses.
CGA-173506	Liver and kidney toxicity at high dose levels.
CGA-329351	Liver effects at high dose levels.
CGA-293343	Subchronic and Chronic: Predominately liver and kidney effects at high dose levels.

Carcinogenic Potential:

CGA-169374	2/70 male rats in the highest dose group (20,000 ppm) were found to have squamous cell carcinoma in the non-glandular stomach. Effect did not occur in female rats or in mice and is not considered relevant to humans. Increase in brain tumours (mice) at doses exceeding the MTD (>2,500 ppm).
CGA-173506	Marginal increase (7%) of liver tumours (female, rats: 3,000 ppm). Within historical control range (1 - 10%).
CGA-329351	None observed.
CGA-293343	Liver tumours at high doses (mice).

Toxicity of other components:

Glycerin	Repeated or prolonged exposure to concentrated solutions may result in dermatitis.
Surfactants	Inhalation may result in irritation to respiratory tract. Contact with skin and eyes can cause irritation and may be corrosive.

Titanium Dioxide

Listed as an IARC (Group 3) carcinogen but not classifiable as a human carcinogen (No Data available) with limited animal evidence. Prolonged exposure causes respiratory irritation and may lead to pulmonary fibrosis.

SECTION 12 ECOLOGICAL INFORMATION

Summary of effects of the product:

HELIX is not harmful to plants and has very low toxicity to animals and birds. The use as a seed treatment minimizes the risk of exposure to wildlife and aquatic species. It is highly toxic to insects but insects are not affected unless they feed on the treated crop.

Summary of effects of the active ingredients:

Difenoconazole: Non-toxic to animals, plants and other wildlife. Highly toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

Fludioxonil: Practically non-toxic to animals, birds, and insects, but highly toxic to aquatic invertebrates and fish.

Metalaxyl-M: Practically non-toxic to animals, birds, fish, insects, and other wildlife.

Thiamethoxam: Non-toxic to plants, and non-toxic to slightly toxic to animals, birds, plants, and aquatic invertebrates. It is highly toxic to insects, including bees.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste disposal information:

Do not reuse product containers. Return the product containers to the manufacturer. If in doubt, consult the Provincial Ministry of the Environment. Industrial/commercial waste can only be handled by licensed facilities. Waste shipments must be securely packed and properly labelled. Only licensed carriers can be used and proper documents must accompany the shipment.

SECTION 14 TRANSPORT INFORMATION

Transportation of Dangerous Goods Classification (Road): Not regulated.

SECTION 15 REGULATORY INFORMATION

WHMIS classification for product: Exempt.

This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

SECTION 16 OTHER INFORMATION

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

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