



MATERIAL SAFETY DATA SHEET

Gravity

IDENTIFICATION OF THE SUPPLIER:

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PRODUCT IDENTIFICATION :

Common Name: Lambda-cyhalothrin + Chlorantraniliprole

Trade Name: Gravity

Chemical Name:

Lambda-cyhalothrin :A reaction product comprising equal quantities of (S)- α -cyano-3-phenoxybenzyl (Z)-(1R,3R)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate and (R)- α -cyano-3-phenoxybenzyl (Z)-(1S,3S)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate

Roth: (S)- α - cyano-3-phenoxybenzyl (Z)-(1R)-cis-3-(2-chloro-3,3,3-trifluoropropenyl)-2,2-dimethylcyclopropanecarboxylate and (R)- α -cyano-3-phenoxybenzyl (Z)-(1S)-cis-3-(2-chloro-3,3,3-trifluoropropenyl)-2,2-dimethylcyclopropanecarboxylate (1:1)

Chlorantraniliprole: 3-bromo-N-(4-chloro-2-methyl-6-[[[(methylamino)carboxyl]phenyl]-1-(3-chloro-2-pyridinyl)-1H-pyrazole-5-carboxamide

Chemical Formula:

Lambda-cyhalothrin: $C_{23}H_{19}ClF_3NO_3$

Chlorantraniliprole: $C_{18}H_{14}BrCl_2N_5O_2$

Molecular Weight:

Lambda-Cyhalothrin: 449.9

Chlorantraniliprole: 483.2

PRODUCT COMPOSITION:

<i>Active Ingredient:</i>	CAS #	g/l
Lambda-Cyhalothrin	91465-08-6	50
Chlorantraniliprole	500008-45-7	100

Inert ingredient: Up to 1 liter

HAZARDS IDENTIFICATION:

Classification in accordance with UN GHS Version 5.

Hazard Classification(s): Acute Toxicity (Oral) – Category 3

Carcinogenicity – Category 2

Skin Sensitization – Category 1

Hazard Symbol(s):



Signal Word: DANGER

Hazard Statement(s): H301 – Toxic if swallowed.

H317 – May cause an allergic skin reaction.

H351 – Suspected of causing cancer.

Precautionary Statement(s):

Prevention: P201 – Obtain special instructions before use.

P202 – Do not handle until all safety precautions have been read and understood.

P261 – Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 – Wash thoroughly after handling.

P270 – Do not eat, drink or smoke when using this product.



P272 – Contaminated work clothing should not be allowed out of the workplace.

P280 – Wear protective gloves/protective clothing/eye protection/face protection.

Response: P301+P310 – IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P302+P352 – IF ON SKIN: Wash with plenty of water.

P321 – Specific treatment: See Section 4 of this SDS.

P330 – Do NOT induce vomiting.

P333+P313 – If skin irritation or rash occurs: Get medical advice/attention.

P362+P364 – Take off contaminated clothing and wash it before reuse.

Storage: P405 – Store locked up.

Disposal: P501 – Dispose of contents/container to an approved waste disposal plant.

Other Hazards Which do not Result in GHS Classification:

To avoid risk to human health and the environment, comply with the instructions for use.

Contains 1,2-benzisothiazolin-3-one. May produce an allergic reaction.

FIRST AID MEASURES:

IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital. Have the product container, label or Safety Data Sheet with you when calling Syngenta, a poison control centre or doctor, or going for treatment. 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.

Eye Contact: Flush eyes with clean water, holding eyelids apart for a minimum of 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eyes. Call Syngenta, a poison control centre or doctor for treatment advice. Obtain medical attention immediately if irritation persists.

Skin Contact: Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with running water for a minimum of 15-20 minutes. Call Syngenta, a poison control centre or doctor for treatment advice.





Inhalation: Move victim to fresh air. If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth to mouth, if possible. Call Syngenta, a poison control centre or doctor for treatment advice.

Ingestion: If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Do not give **any** liquid to the person. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control centre. If spontaneous vomiting occurs, have the victim lean forward with head down to avoid breathing in of vomitus.

Most Important Symptoms/Effects, Acute and Delayed:

Toxic if swallowed, may be harmful if enters airway.

Harmful if inhaled. Suspected of causing cancer.

May cause an allergic skin reaction.

May cause transient, usually less than 24 hours, itching, tingling, burning or numbness of exposed skin, called paresthesia. Application of topical vitamin E may alleviate symptoms.

Indication of Immediate Medical Attention and Special Treatment:

There is no specific antidote.

Treat symptomatically.

Contains petroleum distillates, vomiting may cause aspiration pneumonia.

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

FIRE FLGHTING MESURES:

Suitable (and Unsuitable) Extinguishing Media: Use foam, carbon dioxide, dry powder, halon extinguishant or water fog or mist. Cool closed containers exposed to fire with water spray. Do not use a solid water stream as it may scatter and spread the fire.

Specific Hazards Arising from the Product: Can decompose at high temperatures forming toxic gases. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Special Protective Equipment and Precautions for Fire-Fighters: Wear full protective clothing and self-contained breathing apparatus. Evacuate non-essential 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 run-off can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.



ACCIDENTAL RELEASE MEASURES:

Personal Precautions, Protective Equipment and Emergency Procedures: Control the spill at its source. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Use adequate ventilation and equipment and wear clothing as described in Section 8 and/or the product label.

Environmental Precautions: Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Spillages or uncontrolled discharges into watercourses must be reported to the appropriate regulatory body.

Methods and Materials for Containment and Cleaning Up: Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or seep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into a compatible disposal container. On soils, small amounts will naturally decompose. For large amounts, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposal.

EXPOSURE CONTROLS/ PERSONAL PROTECTION:

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

CONSULT THE PRODUCT LABEL FOR COMMERCIAL AND/OR ON-FARM APPLICATIONS.

Control Parameters:

Component	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS*
Propylene glycol	Not established	Not established	10 mg/m ³ TWA AIHA WEEL****, 50 ppm (153 mg/m ³) (total vapour & particulates) TWA (ON)	No	Yes
Chlorantraniliprole	Not established	Not established	10 mg/m ³ TWA (Total)*, 5 mg/m ³ TWA (Respirable)*	No	Not established
Lambda-cyhalothrin	Not established	Not established	0.04 mg/m ³ TWA (Dermal)***	No	Not established
Petroleum solvent	Not established	Not established	50 mg/m ³ TWA* 300 ppm TWA (AB/QC). Use calculation required (BC/ON)	No	Not established
Ethoxylated polyarylphenol phosphate	Not established	Not established	Not established	No	Not established
Attapulgite clay	Not established	Not established	1 fibre/cm ³ TWA	IARC Group 2B	Not established
Ethoxylated tristyrylphenols	Not established	Not established	Not established	No	Not established

- * Recommended by Manufacturer
- ** Recommended by NIOSH
- *** Syngenta Occupational Exposure Limit (OEL)
- **** Recommended by AIHA (American Industrial Hygiene Association)
- † Material listed in Ingredient Disclosure List under the Hazardous Products Act



Appropriate Engineering Controls: If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV (threshold limit value). Warehouses, production areas, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

Individual Protection Measures:

General: Avoid breathing dust, vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, applying cosmetics or handling tobacco.

Ingestion: Do not eat, drink, handle tobacco, or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.

Eyes: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

Skin: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

Inhalation: A particulate filter respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use a NIOSH certified respirator with any R, P or HE filter. 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.

HANDLING AND STORAGE :

Precautions for Safe Handling: KEEP OUT OF REACH OF CHILDREN. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Avoid breathing vapours, dust or spray mist. Wear full protective clothing and equipment (see Section 8). After work, rinse gloves and remove protective equipment, and wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, applying cosmetics or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. Keep containers closed when not in use. Protect product, wash or rinse water, and contaminated materials from uncontrolled release into the environment, or from access by animals, birds or unauthorized people.



Conditions for Safe Storage, Including Any Incompatibilities: Store in original container in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose sealed containers to temperatures above 40 °C. Refer to the product label for specific storage recommendations, including minimum storage temperature and freeze/thaw stability. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

STABILITY AND REACTIVITY:

Reactivity: Not reactive.

Chemical Stability: Stable under normal use and storage conditions.

Possibility of Hazardous Reactions: No hazardous reactions with normal handling and storage according to the label directions.

Conditions to Avoid: No decomposition if used as directed.

Incompatible Materials: No substances are known which lead to the formation of hazardous substances or thermal reactions.

Hazardous Decomposition Products: Can decompose at high temperatures forming toxic gases. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

PHYSICAL AND CHEMICAL PROPERTIES:

Appearance: Light-beige to brown liquid.

Formulation Type: Suspension concentrate.

Physical State: Liquid.

Odour: Weak, uncharacteristic.

Odour Threshold: Not available.

pH: 4 – 8 (1% w/w dilution in water @ 20 – 25 °C).

Melting Point: Not applicable.

Freezing Point: Not available.

Initial Boiling Point and Boiling Range: Not available.

Flash Point: > 101 °C (Pensky-Martens CC).

Evaporation Rate: Not available.

Flammability (solid/gas): Not applicable.

Lower Explosive Limit: Not applicable.

Upper Explosive Limit: Not applicable.

Vapour Pressure: Chlorantraniliprole: 4.70 x 10⁻¹⁴ mmHg @ 20 °C.

Lambda-cyhalothrin: 1.60 x 10⁻⁹ mmHg @ 20 °C.

Vapour Density: Not available.

Relative Density: 1.08 g/mL @ 20 °C.



Solubility(ies): Chlorantraniliprole: 0.88 mg/L @ 20 °C, pH 7 (water).

Lambda-cyhalothrin: 0.005 mg/L @ 20 °C, pH 7 (water).

Partition Coefficient (n-octanol water): Chlorantraniliprole: 2.8

Lambda-cyhalothrin: 7

Auto-Ignition Temperature: > 650 °C.

Decomposition Temperature: Not available.

Viscosity: 349 mPa·s @ 20 °C.

Other Information: Not applicable.

TOXICOLOGICAL INFORMATION:

Likely Routes of Exposure: Dermal, inhalation, oral.

Symptoms of Acute Exposure: Toxic if swallowed; may be harmful if enters airway. May cause an allergic skin reaction. May cause transient, usually less than 24 hours, itching, tingling, burning or numbness of exposed skin, called paresthesia.

Potential Health Effects: Suspected of causing cancer.

Acute Toxicity/Irritation Studies (Finished Product):

Ingestion: Moderately Acutely Toxic

Oral (LD50 Female Rat) 98.11 mg/kg body weight

Dermal: Low Acute Toxicity

Dermal (LD50 Rat) > 5,000 mg/kg body weight

Inhalation: Low Acute Toxicity

Inhalation (LC50 Rat) > 4.05 mg/L air – 4 hours

Assessment: The substance or mixture has no acute inhalation toxicity.

Eye Contact: Minimally Irritating (Rabbit)

Skin Contact: Slightly Irritating (Rabbit)

Skin Sensitization: Sensitizer (Guinea Pig)

Specific Target Organ Toxicity (STOT) Single Exposure:

Chlorantraniliprole: Not classified as a specific target organ toxicant, single exposure.

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

Specific Target Organ Toxicity (STOT) Repeated Exposure:

Chlorantraniliprole: No adverse effect has been observed in chronic toxicity tests.

Lambda-cyhalothrin: No adverse effect has been observed in chronic toxicity tests.

Carcinogenicity:

Chlorantraniliprole: Did not show carcinogenic effects in animal experiments.



Lambda-cyhalothrin: Did not show carcinogenic effects in animal experiments.

Reproductive Toxicity:

Chlorantraniliprole: Did not show reproductive toxicity effects in animal experiments.

Lambda-cyhalothrin: Did not show reproductive toxicity effects in animal experiments.

Mutagenicity:

Chlorantraniliprole: Did not show mutagenic effects in animal experiments.

Lambda-cyhalothrin: Did not show mutagenic effects in animal experiments.

Aspiration Hazard:

Chlorantraniliprole: Not classified as an aspiration hazard.

Lambda-cyhalothrin: Not classified as an aspiration hazard.

Other Toxicity Information:

Lambda-cyhalothrin: In humans, contact with exposed skin may cause temporary itching, tingling, burning or numbness, called paresthesia. The effect may result from splash, aerosol, hot vapour contact or transfer to the face from contaminated gloves and hands. This effect is transient, lasting up to 24 hours. Face and genital areas are especially susceptible to this effect.

Toxicity of Other Components:

The acute toxicity test results reported in Section 11, above, for the finished product take into account any acute hazards related to the “other components” in the formulation.

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.

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

Ethoxylated polyarylphenol phosphate:



Causes serious eye irritation.

Attapulgitic clay:

Prolonged or repeated inhalation of dust may cause a disabling progressive pulmonary fibrosis. Inhalation hazard may not exist in the liquid form. May cause eye irritation. Listed as an IARC Group 2B carcinogen.

Ethoxylated tristyrilphenols:

The acute toxicity test results reported in Section 11, above, for the finished product take into account any acute hazards related to the ethoxylated tristyrilphenols in the formulation.

ECOLOGICAL INFORMATION:

Eco-Acute Toxicity:

Chlorantraniliprole:

Invertebrates (Water Flea) 48-hour LC50/EC50 0.0116 ppm

Fish (Rainbow Trout) 96-hour LC50/EC50 13.8 ppm

Birds (5-day dietary – Mallard Duck) LD50 > 5,620 ppm

Lambda-cyhalothrin:

Invertebrates (Water Flea) 48-hour LC50/EC50 0.00036 ppm

Fish (Rainbow Trout) 96-hour LC50/EC50 0.0024 ppm

Birds (8-day dietary – Mallard Duck) LC50 > 5,300 ppm

Persistence & Degradability:

Chlorantraniliprole: Persistent in soil. Moderately persistent in water; partitions to sediment.

Lambda-cyhalothrin: Moderately persistent in soil. Moderately persistent in water; partitions to sediment.

Bioaccumulation Potential:

Chlorantraniliprole: BCF < 500; does not bioaccumulate.

Lambda-cyhalothrin: BCF < 500; does not bioaccumulate.

Mobility in Soil:

Chlorantraniliprole: Moderate mobility in soil.

Lambda-cyhalothrin: Low mobility in soil.

Other Adverse Effects: Not applicable.



DISPOSAL CONSIDERATION:

Disposal Methods:

Waste from residues: Refer to the product label for specific disposal/recycling information.

Do not contaminate ponds, waterways or ditches with chemical or used container.

Do not dispose of waste into sewer.

Where possible recycling is preferred to disposal or incineration.

If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging: Refer to the product label for specific disposal/recycling information.

Empty remaining contents

Triple rinse containers

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Do not reuse empty containers.