



Material Safety Data Sheet (MSDS) LAMA SC

IDENTIFICATION OF THE SUPPLIER:

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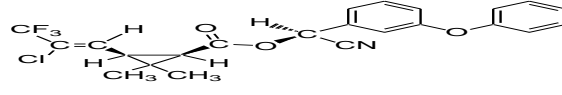
PRODUCT IDENTIFICATION:

Common name	Lambda-cyhalothrin	Thiamethoxam
Trade name	Lama SC	
Uses category	Insecticide	
Type of formulation	Suspension concentrate	
Chemical name	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)	3-(2-chloro-1,3-thiazol-5-ylmethyl)-5-methyl-1,3,5-oxadiazinan-4-ylidene(nitro)amine

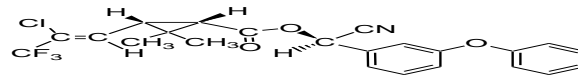


Chemical formula

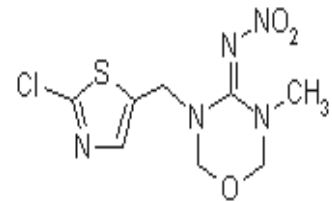
(S) (Z)-(1R)-cis-



+



(R) (Z)-(1S)-cis-



Molecular weight

449.9

291.7

PRODUCT COMPOSITION:

Active ingredient	% w/v	CAS#
Lambda-cyhalothrin	10.6	91465-08-6
Thiamethoxam	14.1	153719-23-4

Inert materials:

Up to 1 liter

HAZARDS IDENTIFICATION:

Symptoms of Acute Exposure

Fatal or poisonous if swallowed. May irritate eyes and skin.

May cause temporary itching, tingling, burning or numbness of exposed skin, called paresthesia.

Hazardous Decomposition Products

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

Unusual Fire, Explosion and Reactivity Hazards

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

Potential Health Effects

Relevant routes of exposure: Skin, eyes, mouth, lungs.

FIRE-FIGHTING MEASURES: -

Flash point and method: >102°C (Pensky-Martens closed-cup)

Upper and lower flammable (explosive) limits in air: Not available.

Auto-ignition temperature: Not available.

Flammability: Not available.

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

Conditions under which flammability could occur: Product is not flammable. Keep fire exposed containers cool by spraying with water.



Extinguishing media: Use foam, carbon dioxide, dry powder, halon extinguishant or water fog or mist, (avoid use of water jet). 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. Contain run-off water with, for example, temporary earth barriers.

Sensitivity to explosion by mechanical impact: No.

Sensitivity to explosion by static discharge: No.

FIRST-AID MEASURES:

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

- Ingestion:** If swallowed, immediately contact Syngenta, a poison control center, doctor or nearest hospital for treatment advice. Do not induce vomiting unless directed by a physician or a poison control center. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
- 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 eye. Call Syngenta, a poison control center 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 20 minutes. Obtain medical attention if irritation occurs.
- Inhalation:** Move victim to fresh air. If not breathing, call an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call Syngenta, a poison control center or doctor for treatment advice.
- Notes to Physician** There is no specific antidote if this product is ingested. Treat symptomatically. Contains petroleum distillate - vomiting may cause aspiration pneumonia. 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.

ACCIDENTAL RELEASE:

Personal Precautions: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective equipment and clothing as described in Section 8 and/or the product label.



Procedures for dealing with release or spill: 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 Sections 7 and 8. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or sweep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into 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. Spillages or uncontrolled discharges into watercourses must be reported to the appropriate regulatory body

PHYSICAL-CHEMICAL DATA:

Appearance:	Light beige liquid
Odor:	Aromatic odour
Melting Point:	Not available.
Boiling Point:	Not available.
Specific Gravity/Density:	1.12 g/cm ³ @ 20 °C.
pH:	6.4 (1% dispersion)
Solubility in H₂O	4.1 g/L @ 25 °C (Thiamethoxam Technical) 0.004 mg/L (Lambda-cyhalothrin Technical).
Vapor Pressure	2 x 10 ⁻¹¹ mmHg @ 20 °C (Thiamethoxam Technical) 1.5 x 10 ⁻⁹ mmHg @ 20 °C (Lambda-cyhalothrin Technical)

STABILITY AND REACTIVITY

Chemical stability: Stable under normal use and storage conditions.

Conditions to avoid: None known.

Incompatibility with other materials: None known.

Hazardous decomposition products: Hazardous decomposition gases may develop in the headspace of containers at normal storage and handling temperatures. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Hazardous polymerization: Will not occur.

PERSONAL PROTECTION/SAFETY:

Applicable control measures, including engineering controls: This product is intended for use outdoors where engineering controls are not necessary. If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.





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 APPLICATIONS AND/OR ON-FARM APPLICATIONS.

Personal protective equipment for each exposure route:

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 a safety shower.

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

INHALATION: Avoid breathing air from drum headspace. A respirator is not normally required when handling this substance. A combination gas/vapour/particulate respirator should be used until effective engineering controls are installed to comply with occupational exposure limits, or until exposure limits are established. Use a NIOSH certified respirator with a combination acid gas/organic vapour cartridge or canister and any N, P or R prefilter and/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.

ACUTE TOXICITY (IRRITATION, SENSITISATION ETC.)

Acute Toxicity/Irritation Studies (Finished Product)

Ingestion:	Highly acutely toxic	
	Oral (LD50 Rat):	310.2 mg/kg
Dermal:	Low acute toxicity	
	Dermal (LD50 Rat):	> 2000 mg/kg
Inhalation:	Low acute toxicity	
	Inhalation (LC50 Rat):	> 2.15 mg/L
Eye Contact:	Mildly Irritating	
Skin Contact:	Mildly Irritating	
Skin Sensitization:	Not a sensitizer	

Reproductive/Developmental Effects

Thiamethoxam Technical: Not teratogenic or a reproductive toxicant. Minor testis effects at high doses with no effect on reproduction.

Lambda-cyhalothrin Technical: Not a developmental or reproductive toxicant.

Chronic/Subchronic Toxicity Studies

Thiamethoxam Technical: Liver and kidney effects at high doses in animal models. Not neurotoxic in animal models.

Lambda-cyhalothrin Technical: Reversible clinical signs of acute neurotoxicity in mammals.

Carcinogenicity



Thiamethoxam Technical: Liver tumors, at high doses in mice, that are not relevant to humans.
Lambda-cyhalothrin Technical: 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 vapour 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

The acute toxicity test results reported in above, for the finished product take into account any acute hazards related to the "other components" in the formulation

Glycerin:

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

Petroleum Solvent:

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

Other materials that show synergistic toxic effects together with the product: None known.

Target Organs

Active Ingredients

Thiamethoxam Technical: Liver, kidney.

Lambda-cyhalothrin Technical: Liver, nervous system.

Inert Ingredients

Glycerin: Skin.

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

ECOLOGICAL INFORMATION: -

Summary of Effects

The active ingredient, thiamethoxam, is slightly to practically non-toxic to fish, birds and aquatic invertebrates (water flea). The active ingredient, lambda-cyhalothrin, is highly toxic to aquatic organisms, but practically non-toxic to birds.

Eco-Acute Toxicity

Thiamethoxam Technical:

Green Algae 5-Day EC50	> 100 ppm
Invertebrate (Water Flea) 48-hour EC50	> 106 ppm
Fish (Rainbow Trout) 96-hour LC50	> 100 ppm
Bird (Bobwhite Quail) 8-day Dietary LC50	> 5,200 ppm

Lambda-cyhalothrin Technical:

Green Algae 96-hr EC50	> 1.0 ppm
Invertebrate (Water Flea) 48-hour EC50	0.36 ppb
Fish (Rainbow Trout) 96-hour LC50	0.24 ppb
Bird (Bobwhite Quail) 8-day Dietary LC50	> 5,300 mg/kg





Environmental Fate

The active ingredient, thiamethoxam, has a moderate bioaccumulation potential, low mobility, and moderate persistence in soil and water. The active ingredient, lambda-cyhalothrin, is not persistent in soil or water, and is immobile in soil.

DISPOSAL CONSIDERATIONS:

Waste disposal information: Do not reuse empty containers unless they are specifically designed to be re-filled. Empty container retains product residue. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

