



CROWNBRIDGE

CROWNBRIDGE MANAGEMENT L.P.
SUITE 260,2323 - 32 AVENUE N.8
CALGARY, ALBERTA T2E623
CANADA
WWW.CROWNBRIDGETRADING.COM

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT & COMPANY IDENTIFICATION

CROWNBRIDGE MANAGEMENT L.P.
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CALGARY, ALBERTA T2E623,
CANADA

Product Name: GRAND 5
Product Use: Insecticide
In case of Poisoning: 80004249300

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

Common Name: lambda-cyhalothrin
Chemical Name: (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 (**IUPAC**)

Chemical family: Pyrethriod
Use: Synthetic pyrethriod, non-systemic insecticide and acaricide with stomach and contact action, and repellent properties. Prevents the sodium channels from functioning, so that no transmission of nerve impulses can take place.

Formulation: lambda-cyhalothrin 50 g/l
Emulsifiable Concentrate

Hazardous ingredients of toxicological concern:

<u>Inert:</u>	<u>concern:</u>	<u>% present:</u>
Lambda-cyhalothrin	harmful	5 %
aromatic hydrocarbon	harmful	\pm 85 %
phenyl sulphonate	irritant, corrosive	\pm 5 %

Symbol: Xn, N
Indication of Danger: Harmful, Environmentally Hazardous Substance

RISK-PHRASE(S) R20/22 R21, R36/38, R43, R50

SECTION 3 - HAZARD IDENTIFICATION

Inhalation:
Moderately toxic by inhalation.

Ingestion:
Harmful when swallowed. If large amounts are swallowed and aspiration of the solvent into the lungs occurs, chemical pneumonitis may develop. Small amounts of product aspirated into the respiratory system during ingestion or vomiting, may cause mild to severe pulmonary injury

Skin Contact:



Harmful by skin contact. Due to inerts, the product is a mild irritant and may cause mild to severe irritation to the skin. Can cause dermatitis through defatting of tissue. May cause skin sensitization.

Eye Contact:

Mild irritant. May cause mild to severe irritation.

SECTION 4 - FIRST AID MEASURES AND PRECAUTIONS

No cases of poisoning have been described in the general population and none from occupational exposure. However, symptoms that may arise if the product is mishandled and overexposure occurs are: nausea, vomiting, diarrhoea, abdominal pain, ataxia, unsteady gait, hyper excitability, salivation, tremors and incontinence. Larger doses may cause convulsions and loss of consciousness.

Inhalation:

If vapours or mists have been inhaled, and irritation has developed, remove the source of contamination or move victim to fresh air. Keep the patient under observation. If irritation persists, obtain medical attention immediately.

Skin contact:

Remove contaminated clothing, shoes and leather goods. Wash skin gently and thoroughly with cold water and non-abrasive soap. Application of olive oil to the affected area will afford prompt relief. After the affected area is washed with soap and water, dry off and apply olive oil. If irritation persists obtain medical attention.

Eye contact:

Flush eyes immediately with large amounts of gently flowing cold water, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15 to 20 minutes). If irritation persists, get medical attention.

Ingestion:

Do not induce vomiting. Do not give anything by mouth. If the person is alert, rinse mouth thoroughly with water. Obtain medical attention immediately. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus.

Advice on treatment:

There is no specific antidote available.

This product contains materials that may cause severe pneumonitis if aspirated. In cases of ingestion, consider gastric lavage, however prevent aspiration. Observe patient for respiratory difficulty from aspiration pneumonitis. Treat symptomatically and supportively.

SECTION 5 - FIRE-FIGHTING MEASURES

Fire hazard and explosion

hazard: Flash point: ~ 65

°C.

This material is not flammable. Not combustible.

Extinguishing agents:

Extinguish fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Use as little water as possible. Use spray or fog. Solid stream may cause spreading. Contain water used for fire fighting for later disposal.

Fire fighting:

Remove spectators from surrounding area. Remove container from fire area if possible. Contain fire control agents for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind.

Personal protective equipment:

Fire may produce irritating or poisonous vapours, and may include hydrocarbons, ammonia, organic and acid halids, oxides of carbon, nitrogen and sulphur mists or other products of combustion. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal precautions:

Avoid contact with skin and eyes. Do not breathe in spray or fumes. For personal protection see Section 8.

Environmental precautions:

Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs. Product is considered a Marine Pollutant.

Occupational spill:



Remove all sources of flames and sparks. For small liquid spills, soak up with lime, damp earth or sand, or other non-combustible absorbent material and place into containers for later disposal. For large liquid spills, contain the liquid for later disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Do not flush spilled material into drains. Keep spectators away.

SECTION 7 - HANDLING AND STORAGE REQUIREMENTS

Handling:

Moderately toxic by inhalation. Harmful if swallowed. Harmful by skin or eye contact. Avoid contact with eyes and skin, and inhalation of spray and vapour. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

Storage:

Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

Respirator:

An approved respirator suitable for protection from mists of pesticides is adequate. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

Clothing:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

Gloves:

Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

Eye protection:

The use of safety goggles is recommended.

Emergency eye wash: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Homogeneous clear yellow liquid without coagulation.
Odour:	Chemical odour.
Flammability:	Non flammable
Flash point:	~ 68 °C
Solubility:	Forms an emulsion with water.
pH:	6.6 (1% m/v solution).
Density:	0.998 ± 0.05 g/m ³ @ 20 °C.

SECTION 10 - STABILITY AND REACTIVITY

Stability:

Chemically and thermally stable. Stable under normal storage conditions. Considered stable for a period of 2 years under recommended warehouse and light conditions. .

Incompatibility:

Incompatible with strong oxidizing substances and strong acids and alkaline materials.

Hazardous decomposition products:



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Thermal decomposition products are toxic and may include hydrocarbons, ammonia, organic and acid halids, oxides of carbon, nitrogen and sulphur.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute oral LD₅₀:	Formulation calculated: > 800 mg/kg
Acute dermal LD₅₀:	Formulation calculated: > 2000 mg/kg
Inhalation:	Formulation calculated: Moderately toxic
Acute skin irritation:	Mild irritant. May cause mild to severe irritation.
Acute eye irritation:	Mild irritant. May cause mild to severe irritation.
Dermal sensitization:	May be a mild skin sensitizer.

Reproductivity:

It is unlikely that lambda-cyhalothrin would cause reproductive effects in humans under normal conditions.

Teratogenicity:

No teratogenic or fetotoxic effects were observed. Based on these data, it is unlikely that lambda-cyhalothrin causes teratogenic effects.

Mutagenicity:

Negative results were obtained in all Ames mutagenicity assays. Evidence suggests that lambda-cyhalothrin is non-mutagenic and non-genotoxic.

Carcinogenicity:

The evidence regarding the carcinogenicity of lambda-cyhalothrin is inconclusive, but suggests that it is probably not carcinogenic.

ADI: 0.0005 mg/kg b.w.

SECTION 12 - ECOLOGICAL INFORMATION

Degradability:

Rats: Compound is rapidly metabolized and excreted via the urine and faeces. The ester bond is hydrolyzed to form polar, water soluble compounds, which are less toxic and more easily eliminated.

Soil: Is moderately persistent in the soil. Field half-lives range from 4 to 12 weeks. Lambda-cyhalothrin shows a high affinity for soil, reported Koc is 180 000, and not expected to be appreciably mobile in most soils. Little potential for groundwater contamination.

Water: Lambda-cyhalothrin has extremely low water solubility and is tightly bound to soil, it is therefore not expected to be prevalent in surface waters.

ECOTOXICOLOGY:

Birds: Slightly to practically non-toxic.

Oral LD ₅₀ :	Mallard ducks:	> 3950 mg/kg
LC ₅₀ (diet):	Quail:	> 5300 mg/kg diet

No evidence of accumulation in eggs or tissue of birds.

Fish: Highly toxic.

LC ₅₀ (96 hours):	Rainbowtrout:	0.36 µg/l
	Bluegill sunfish:	0.21 µg/l
Daphnia:	EC ₅₀ (48 hours):	0.36 µg/l
Bees: Highly toxic.	LD ₅₀ (oral):	38 ng/bee
	LC ₅₀ (contact):	909 ng/bee
Earthworm: LC₅₀:	<i>Eisenia foetida</i>	>1000 mg/kg soil

Other beneficial organisms:

Toxic to some non-target arthropods. Effects under field conditions are reduced, with rapid recovery.

SECTION 13 - DISPOSAL CONSIDERATION

Pesticide and container disposal:

Open dumping or burning of this pesticide is prohibited. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Considered a Marine Pollutant.

Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed.



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TRIPLE RINSE empty containers in the following manner. Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank before destroying the container in the prescribed manner.

Do not re-use the empty container for any other purpose but destroy it by perforation and flattening and bury in an approved dump site. Prevent contamination of food, feedstuffs, drinking water and eating utensils.

SECTION 14 - TRANSPORT INFORMATION

UN NUMBER: 3352
Road Transport ADR/RID:
Class: 6.1
Packaging group: III
Shipping name: Pyrethroid pesticide, Liquid, Toxic
(lambda-cyhalothrin 50g/l)

Maritime Transport IMDG/IMO:
Class: 6.1
Packing group: III
Shipping name: Pyrethroid pesticide, Liquid, Toxic
(lambda-cyhalothrin 50g/l)

Considered a marine pollutant.

SECTION 15 - REGULATORY INFORMATION

Symbol : Xn, N
Indication of danger : Harmful, Environmentally Hazardous Substance
Risk phrase(s):
R 20/22 Harmful by inhalation and if swallowed.
R 21 Harmful in contact with skin.
R 36/38 Irritating to eyes and skin.
R 43 May cause sensitization by skin contact.
R 50 Very toxic to aquatic organisms.
Safety phrases:
S 1/2 Keep locked up and out of reach children.
S 13 Keep away from food, drink and animal feedingstuffs.
S 23 Do not breathe vapour/spray.
S 24/25 Avoid contact with skin and eyes.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.
S 62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

SECTION 16 - OTHER INFORMATION

Packaging:

Packed in 50, 100, 200, 500 ml & 1, 5, 10, 20 and 25 l fluorinated plastic containers and labelled according to South African regulations and guidelines.

Disclaimer:

The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed.

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.