

Material Safety Data Sheet
LIPEL™

Manufacturer's Name : AGRI LIFE
Manufacturer's Address : 1 54/A5-1, SVCIE, IDA Bollaram 502 325, INDIA
Tel: +91 279905
Fax: +91 8458 279904
E-mail: agrilife@agrilife.in

1. Product Information

Product Name : LIPEL™
Product Code : LIPEL™
Family / Group : Microbial Insecticide
Chemical Formula : Mixture
Other Designations : Kaolin based formulation containing *Bacillus thuringiensis* var *Kurstaki*

2. Composition/Information on Ingredients

Components	Composition (%) WW
<i>Bacillus thuringiensis</i> var <i>Kurstaki</i> (spores)	8%
Delta endotoxin	8%
Nutrient medium residues	37%
Sodium chlorise	15%
Moisture	9%
Carrier – Kaolin	q.s.

Ingredients not precisely identified are proprietary and/or non-hazardous.

3. Hazards Identification

Emergency Overview

The product is an off white powder with a characteristic fermentation odour which is intended to be used for plant protection. Organisms used are non-pathogenic, but can cause infection when in contact with open wounds. These organisms are susceptible to many commonly used antibiotics. There is no specific antidote for any form of irritation observed. Treat symptomatically. Immediately seek medical attention.

Central Insecticides Board signal word (Pesticides regulatory authority of India) : Caution

Potential Health Effects:

Routes(s) of Entry	: Eye , Skin , Oral , Inhalation
Human effects and symptoms of exposure	: Causes irritation of eyes , skin or respiratory tract
Acute eye contact	: Causes irritation
Chronic eye contact	: Chronic exposure Is not likely from normal use
Acute skin contact	: May cause irritation
Chronic ingestion	: Chronic exposure Is not likely from normal use
Medical conditions generally aggravated by exposure	: Not known

4. First Aid Measures

If poisoning is suspected, consult a physician immediately/ visit the nearest hospital / nearest Poison control centre. The concerned examiner should be informed the complete product name and details and amount of exposure. Describe the symptoms and follow the advice given.

First Aid for Eyes

Immediately flush eyes with water for 20 minutes. Hold the eye lids apart to rinse the entire surface of eyes and lids. No medicating agents should be applied except on the advice of physician.

First Aid for Skin

Wash skin with soap and water, including hair and under finger nails. No medicating agents should be applied except on the advice of physician. Remove contaminated clothing and footwear.

First Aid for Inhalation

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

First Aid for Ingestion

The product is not harmful if ingested. If any irritation is observed give plenty of water to drink and consult a physician.

5. Fire fighting measures

Flash Point: Not applicable

Flammability Limits: Not Flammable

Autoignition temp: Not applicable

Fire Extinguishing Media: Water spray, carbon dioxide, dry chemical, foam

Special Fire-Fighting Information: 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. Use of contaminated buildings, area and equipment has to be avoided until decontaminated.

Unusual Fire and Explosion Hazards: None

6. Accidental Release Measures

Safety gear :Wear chemical safety glasses with side shields or chemical proof goggles, rubber gloves , rubber boots , long sleeved shirt , long pants, head cap , NIOSH approved dust or pesticide respirator with a dust filter.

Spills: Sweep the area keeping the dust to a minimum and place an approved chemical container. Wash the spill area with water containing a strong detergent, absorb with absorbent material. Seal the container and handle in an approved manner.

7.. Handling and Storage

Storage Temperature : Room temperature (Not more than 40 degree Celsius)

Storage requirements : Store the material in a well ventilated, clean, cool and dry place out of reach of children and domestic animals. Keep away from direct sunlight. Keep containers tightly closed when not in use. Do not store in metallic containers. Do not store along with chemical pesticides.

Shelf Life : Use before expiry date printed on label

Special sensitivity : None

Handling precautions : Follow normal hygienic and housekeeping standards for

agricultural products.

8. Exposure Controls/ Personal Protection

- Oral Protection Requirements : Avoid eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling the product.
- Eye protection equipments : To avoid eye contact, wear safety goggles.
- Skin protection requirements : To avoid skin contact, wear rubber gloves, rubber boots, long-sleeved shirt, long pants, head cap.
- Respiratory / Ventilation requirements : To avoid breathing dust, use adequate ventilation and wear a NIOSH-approved dust or pesticide respirator with a dust filter.

9. Physical and Chemical Properties

- Physical State : Powder
- Colour : Off white
- Specific Gravity : Not applicable
- Bulk density(: Specified in Certificate of analysis
- Odour : Characteristic fermentation odour
- Miscibility : Insoluble in water but suspensible in water
- pH : Specified in Certificate of analysis
- Stability : Stable at normal storage conditions
- Corrosion : Nil
- Flash point : Not applicable
- % Volatile volume : Not determined
- Vapour pressure : Not determined
- Vapour density : Not determined
- Melting Point : 800°C
- Boiling Point : Not determined
- Freezing Point : Not determined
- Evaporation Rate : Not determined

10. Stability and Reactivity

- **Stability:** Product is stable.
- **Hazardous Polymerization:** Will not occur.
- **Hazardous Decomposition Products:** None
- **Decomposition :** Easily bio-degradable
- **Incompatibility:** Strong acids or alkali compounds may inactivate biological cultures as well as strong oxidising agents, disinfectants and biocides. Chemical pesticides will inactivate the active ingredient completely.
- **Conditions to Avoid:** Heat, flames, ignition sources and incompatibles. Excessive temperature variations, below 0°C or above 40 °C.

11. Toxicological Information

PRIMARY CULTURE

S.No.	STUDY	ANIMAL	LD50 / Action
1	Acute Oral Toxicity / Pathogenicity	Rat	10 ⁶ spores/rat
2	Acute Dermal Toxicity / Pathogenicity	Rat	10 ⁶ spores/rat
3	Acute Inhalation Toxicity/Pathogenicity	Rat	1.9 x 10 ⁶ spores/L
4	Primary Skin Irritation Study	Rabbit	Non-Irritating
5	Mucous Membrane Irritation Study	Rabbit	Non-Irritating
6	Allergy / Sensitisation Test (Part A - Contact Skin Sensitisation)	Guinea Pigs	Non-Sensitiser
7	Allergy / Sensitisation Test (Part B - Anaphylactic Response - Schultz Dale Reaction)	Guinea Pigs	Did not induce anaphylactic reaction
8	Acute Oral Toxicity to Chicken	Chicken	10 ⁶ spores/bird
9	Acute Oral Toxicity to Pigeon	Pigeon	10 ⁶ spores/bird
10	Toxicity to Fresh Water Fish	Fish	10 ⁶ spores/L
11	Acute Toxicity to Honey bees	Honey bees	10 ⁶ spores/bee

12	Toxicity to Silkworm	Silkworm	10 ⁶ spores/ml.
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FORMULATION

S.No.	STUDY	ANIMAL	LD50 / Action
1	Oral Toxicity / Pathogenicity	Rat	>5 x 10 ⁹ spores/rat
2	Acute Inhalation Toxicity/Pathogenicity	Rat	>10 ⁹ spores/L air
3	Dermal Toxicity / Pathogenicity	Rabbit	>5 x 10 ⁹ spores/rabbit
4	Primary Skin Irritation	Rabbit	Non - Irritant
5	Irritation to Mucous Membrane	Rabbit	Non - Irritant
6	Skin Sensitization Potential / Allergenicity	Guinea Pig	Very mid skin sensitization No anaphylactic reaction

Sub Acute Studies

S.No.	STUDY	ANIMAL	LD50 / Action
1	Oral Toxicity / Pathogenicity - 90 days	Rat	>* 5 x 10 ⁹ spores/rat/day
2	Inhalation Toxicity/Pathogenicity - 14 exposures	Rat	>* 10 ⁹ spores/L air
3	Oral Toxicity / Pathogenicity - 90 days	Dog	>* 95 x 10 ⁹ spores/dog/day
4	Dermal Toxicity / Pathogenicity - 21 days	Rabbit	>* 5 x 10 ⁹ spores/rabbit/day

B.Eco – Toxicity

S.No.	STUDY	ANIMAL	LD50 / Action
1	Toxicity to Birds: Pigeon	Pigeon	> 5000 mg / Kg. body

			Wt.
2	Toxicity to Birds: Chicken	Chicken	> 5000 mg / Kg. body Wt.
3	Toxicity to Fish	Fish	> 95 x 10 ⁹ spores/water
4	Toxicity to Honey Bee	Honey Bee	>3120 mg/L
5	Toxicity to Silk Worm	Silk Worm	4.2 x 10 ⁻³ % W/V in diet

A Note

Prolonged contact with eyes, skin and respiratory tract may cause irritation. The product is formulated using microbe specially selected from the natural environment and that are known to be nonpathogenic to humans, animals or plants. It is advised to cover open wounds when in use.

12. Ecological Information

- Totally bio-degradable in nature
- Accumulation : Not anticipated to bioaccumulate
- Do not apply on water bodies as it maybe toxic to aquatic life.
- The product contains non –pathogenic, non-hazardous and non-toxic, naturally occurring constituents.
- Other adverse effects There is no ozone depletion, photochemical ozone creation or global warming potential.

13.. Disposal Considerations

Do not reuse product packing materials and residues. Dispose the product packing materials and residues according to local state and federal health and environmental regulations.

Destroy used containers and bury them 18 inches below the soil in non-crop land away from habitation and underground water course.

Dispose empty containers surplus material and washings from spray equipments in a safe manner so as to prevent environmental or water pollution, or contamination of food and animal feed.

Never use the empty containers for storing food or water

14. Transportation Information

- Transportation Data : The product is not regarded as hazardous material for all modes of transportation
- Hazard Class : Not applicable
- ID NO : Not applicabl

15. Regulatory Information

TSCA: Not applicable

CERCLA Reportable Quantity: Not applicable

SARA TITLE III Section 313 : Not applicable

OSHA Hazard Classification: Not applicable

WHMIS/ Controlled products regulation: Not applicable.

Clean Air Act: This formula does not contain any hazardous air pollutants

Clean Water Act: None of the chemicals in this product are listed as hazardous, toxic or priority pollutants.

State Right-to-Know Lists: Not applicable

Exposure Limits: Not applicable

16. Other Information

Agri Life provides the information contained herein in good faith, in compliance with the Occupational Safety and Health Act of 1970. To the best of our knowledge, the information contained herein is accurate. However Agri Life does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All material may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards, which exist.

This product is for agricultural use only.

A Note

1. NIOSH :The National Institute for Occupational Safety and Health
2. WHMS : Workplace Hazardous Materials Information
3. TSCA : Toxic substances Control Act
4. CERCLA : Comprehensive Environmental Response, Compensation, and Liability Ac
5. SARA : Superfund Amendments and Reauthorization Act
6. RCRA : Resource Conservation and Recovery Act of USA
7. MSDS : Material Safety Data Sheet
8. CPR : Controlled Products Regulation