

MATERIAL SAFETY DATA SHEET OF

Bacillus thuringiensis subsp. *israelensis*

1. Chemical Product Identification

Product Name: *Bacillus thuringiensis* subsp. *israelensis* Granule

Synonym: BTI

Molecular Formula: Not applicable

Molecular Weight: Not applicable

CAS No.: 68038-71-1

Manufacturer: Yangzhou Luyuan Bio-chemical Co. Ltd.. China

Address: No. 6, Xiaoguanqiao Road, Weiyang Industry Park, Yangzhou China

Telephone: +86-514-87637599

2. Composition / Information on Ingredients

Bacillus thuringiensis subsp. *israelensis* : ≥ 200 ITU/mg

3. Hazards Identification

This product is non-toxic by ingestion, skin contact, or inhalation. It may be mild irritating to skin and eyes, not a skin sensitizer.

4. First Aid Measures

Eyes: Immediately rinse eyes with a large amount of running water. Hold eyelids apart to rinse the entire surface of the eyes and lids. Do not apply any medicated agents except on the advice of a physician.

Skin: Wash with plenty of soap and water, including hair and under fingernails. Do not apply any medicating agents except on the advice of a physician. Remove contaminated clothing and decontaminate prior to use.

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

Ingestion: If victim is fully conscious, immediately give a large quantity of water to drink and induce vomiting. Never give anything by mouth to an unconscious person.

Advice to doctor: Treat symptomatically.

5. Fire-Fighting Measure

Extinguishing media: preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog.

Unusual fire and explosion hazards: Thermal decomposition products may include, but are not limited to CO₂, H₂O, and particulate fillers.

Fire and explosion hazards: Not available

Special fire fighting procedures: None

Flammability: This product may burn if it meets flame; it may decompose by heat.

6. Accidental Release Measures

Emergency action: Keep unnecessary people away; Isolate hazard area and deny entry. Stay upwind; Keep out of low areas. Isolate for 100 m in all directions if tank, rail car or tanker truck is involved in fire.

Spill or leak procedure: Wear chemical safety glasses with side shields or chemical goggles, rubber gloves, rubber boots, long-sleeved shirt, long pants, head covering, and a NIOSH-approved dust or pesticide respirator with a dust prefilter. For small falls, sweep up, keeping granules to a minimum, and place in an approved chemical container. Sweep the fall area with water containing a strong detergent, and place in a chemical container. Seal the container and handle in an approved manner. Flush the area with water to remove any residue. Do not allow wash water to contaminate water supplies.

7. Handling and Storage

Storage temperature: 0-30°C

Store the material in a well-ventilated, secure area out of the reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco usage, and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

8. Exposure Controls/Personal Protection

General Precautions To Be Taken In Use: Use only with adequate ventilation. Avoid breathing vapor and spray mist. Avoid contact with skin and eyes. Wash hands after using. Product may contain substances classified as nuisance particulates that may be at hazardous levels only during sanding or abrading of the dried film.

Respiratory Protection: If personal exposure cannot be controlled below applicable limits by ventilation, wear an appropriate properly fitted organic vapor/particulate respirator. When sanding or abrading a dried film, wear a dust/mist respirator for dust which may be generated from this product, the underlying product, or the abrasive.

Ventilation: Provide dilution ventilation or local exhaust to maintain the level of vapors and dust below the applicable limits. Use only non-sparking explosion-proof equipment. Discharge exhaust only in area away from ignition sources.

Personal Protective Equipment: Splash goggles or safety glasses with side shields, impervious gloves, impervious clothing, chemical resistant boots for spill clean up.

9. Physical and Chemical Properties

Appearance: Straw yellow Granules

pH: 6.5-7.0

Vapour pressure: N/A

10. Stability and Reactivity

Stability: stable under normal conditions.

Hazardous Polymerization: Hazardous polymerization will not occur

Conditions To Avoid: N/A

Materials to avoid: N/A

Hazardous decomposition products: N/A

11. Toxicological Information

Oral Acute oral LD₅₀ for rats >5000 mg/kg; for rabbits >2.00 × 10⁹ spores/rabbit.

Skin and eye Acute percutaneous LD₅₀ for rats >2150 mg/kg, rabbits >6280 mg/kg.

Inhalation LD₅₀ for rats >5000 mg/kg. **NOEL** for rats (3 mo) 4 g/kg b.w. daily

12. Ecological and Ecotoxicological Information

Low toxicity to fish and wildlife.

Fish LC₅₀ for rainbow trout >370, bluegill >600 (both in mg/l, as 'VectoBac'). LC₅₀ (96 h) for water feeder guppies (*Toecilia retriulata*) >156 mg/l (as 'Teknar'). LC₅₀ (96 h) for zebra fish >1000 mg/l.

Daphnia LC₅₀ (96 h) >25 mg/l (tech.).

13. Disposal Considerations

Triple or preferably pressure rinse containers before disposal. Add rinsing to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.

14. Transport Information

Not regulated hazard class

15. Regulatory Information

The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change federal, state, or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state, or provincial, and local laws and regulations.

16. Other Information

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.