

Liquid Biofertilizer.

1. Identification

- **Product Identifier:** Liquid Biofertilizer.
- **Other Means of Identification:** Microbial inoculant, *Bacillus firmus* liquid culture.
- **Recommended Use:** Agricultural soil amendment for plant growth promotion and nematode management.
- **Restriction on Use:** For agricultural/commercial use only. Do not ingest or inhale.
- **Supplier Details:** NCL Pune
- **Emergency Phone Number:**

2. Hazard(s) Identification

- **GHS Classification:** Not classified as hazardous according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) or GHS criteria.
- **Signal Word:** None.
- **Hazard Statements:** None.
- **Precautionary Statements:** : None
- **Prevention:** Wash hands thoroughly after handling.
- **Response:** If in eyes or on skin, rinse gently with water.
- **Storage/Disposal:** Store in a cool place. Dispose of contents in accordance with local regulations.
- **Other Hazards:** Contains live, non-pathogenic, soil-occurring bacteria. Prolonged contact may cause mild irritation to sensitive skin or respiratory systems.

3. Composition / Information on Ingredients

Composition / Information on Ingredients

Chemical/Biological Name	CAS Number	Weight %	Classification
<i>Bacillus megatarium</i> (Active culture/spores)	N/A	Variable (e.g., min 1×10^5 CFU/ml)	Non-Hazardous
<i>Azotobacter</i> species (e.g., <i>A. chroococcum</i>)	N/A	Variable (e.g., min 1×10^5 CFU/ml)	Non-Hazardous
<i>Bacillus mucilaginous</i> (Potassium solubilizer)	N/A	Variable (e.g., min 1×10^5 CFU/ml)	Non-Hazardous
Aqueous Carrier (Water & liquid fermentation nutrients)	7732-18-5	Balance to 100%	Non-Hazardous

4. First-Aid Measures

- **Inhalation:** Move exposed person to fresh air. Seek medical attention if coughing or breathing discomfort develops.
- **Skin Contact:** Wash affected area thoroughly with soap and water. Remove contaminated clothing.
- **Eye Contact:** Flush eyes immediately with water for at least 15 minutes, lifting upper and lower lids. Remove contact lenses if present and easy to do. Get medical aid if irritation persists.
- **Ingestion:** Rinse mouth thoroughly with water. Drink 1–2 glasses of water. Do not induce vomiting unless directed by medical personnel.
- **Most Important Symptoms:** May cause mild mechanical eye irritation or slight skin redness in sensitive individuals.
- **Immediate Medical Attention:** Treat symptomatically. No specific antidote is required. [[1](#)]

5. Fire-Fighting Measures

- **Suitable Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide (CO₂) based on surrounding fire conditions.
- **Unsuitable Extinguishing Media:** None known.
- **Specific Hazards:** Product is an aqueous liquid and is **non-flammable**. Thermal decomposition under extreme fire conditions may release carbon oxides or nitrogen oxides.
- **Special Protective Equipment:** Firefighters should wear self-contained breathing apparatus (SCBA) and full protective bunker gear.

6. Accidental Release Measures

- **Personal Precautions:** Wear appropriate personal protective equipment (gloves, safety glasses) to prevent direct contact. Spilled liquid creates a slip hazard. [[1](#)]
- **Environmental Precautions:** Prevent large-scale run-off from entering lakes, rivers, streams, or storm drains to avoid organic nutrient loading.
- **Methods for Clean-Up:** Contain spill with absorbent material (sand, clay, sawdust). Scoop up and place in a suitable, labeled waste container. Flush the spill area with plenty of water.

7. Handling and Storage

- **Precautions for Safe Handling:** Avoid generating airborne mists or sprays. Avoid contact with eyes and skin. Do not eat, drink, or smoke when handling this product. Wash hands thoroughly after use. [[1](#)]
- **Conditions for Safe Storage:** Store in the original container in a cool, dry, well-ventilated area. Maintain storage temperatures between 5°C (41°F) and 30°C (86°F). Keep out of direct sunlight.
- **Incompatibilities:** Keep away from chemical pesticides, bactericides, chlorinated water, strong acids, bases, and sanitizers, which will kill the live active bacteria. [[1](#), [2](#), [3](#), [4](#), [5](#)]

8. Exposure Controls / Personal Protection

- **Control Parameters:** No occupational exposure limits (PEL, TLV, REL) have been established for this microbial mixture.
- **Appropriate Engineering Controls:** Ensure adequate general room or local exhaust ventilation, especially when spraying or mixing in enclosed areas.
- **Individual Protection Measures (PPE):**
 - **Eye/Face:** Safety glasses with side shields or splash goggles.
 - **Skin:** Protective gloves (nitrile, neoprene, or rubber) and standard long-sleeved work clothes.
 - **Respiratory:** None needed under normal conditions. Use an approved particulate/mist respirator mask (e.g., N95) if spraying creates dense airborne mists.

9. Physical and Chemical Properties

- **Appearance:** Light brown, amber, or turbid yellowish liquid.
- **Odor:** Mild, sweet, earthy fermentation odor.
 - **pH:** Typically 6.0 – 7.5.
 - **Melting/Freezing Point:** ~0°C (32°F).
 - **Boiling Point:** ~100°C (212°F).
 - **Flash Point:** Not applicable (aqueous mixture).
 - **Evaporation Rate:** Same as water.
 - **Flammability:** Non-flammable.
 - **Vapor Pressure/Density:** Same as water.
 - **Relative Density:** 1.01 – 1.06 g/cm³.
 - **Solubility:** Fully soluble and miscible in water.
 - **Auto-ignition Temperature:** Not applicable.
 - **Decomposition Temperature:** No data available.

10. Stability and Reactivity

- **Reactivity:** Non-reactive under normal conditions of use and storage.
- **Chemical Stability:** Stable under recommended storage temperatures.
- **Possibility of Hazardous Reactions:** None known. Will not polymerize.
- **Conditions to Avoid:** Extreme heat (above 40°C / 104°F), freezing conditions, and direct ultraviolet (UV) sunlight.
- **Incompatible Materials:** Chemical disinfectants, bactericides, strong acids, and bases.
- **Hazardous Decomposition Products:** None under normal storage. Carbon oxides may form during combustion.

11. Toxicological Information

- **Likely Routes of Exposure:** Skin contact, eye contact, inhalation of mists.
- **Symptoms of Exposure:**
- **Inhalation:** Mild respiratory tract irritation if heavy mist is inhaled.
- **Skin:** No irritation expected; rare cases of temporary mild redness.
- **Eye:** Mild mechanical irritation or temporary stinging.

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- **Ingestion:** Low toxicity. Large amounts may cause minor gastrointestinal discomfort.
- **Numerical Measures of Toxicity:** LD50 Oral (Rat) > 5000 mg/kg (estimated base on ingredients).
- **Carcinogenicity:** None of the ingredients are listed as carcinogens by IARC, NTP, or OSHA.

12. Ecological Information

- **Ecotoxicity:** Not toxic to aquatic environments, earthworms, honeybees, birds, or non-target plants. *Bacillus firmus* is a naturally occurring soil bacterium.
- **Persistence and Degradability:** Fully biodegradable. Active microbes integrate safely into the natural soil ecology.
- **Bioaccumulative Potential:** No bioaccumulation potential.
- **Mobility in Soil:** Highly mobile in liquid form; binds to organic material and soil particles over time.

13. Disposal Considerations

- **Waste Treatment:** Product is non-hazardous. Small volumes can be heavily diluted with water and disposed of via the sanitary sewer or applied directly to soil. Large quantities should be disposed of according to local, regional, and national environmental laws.
- **Container Disposal:** Rinse empty packaging thoroughly with water before recycling or disposing of in regular trash.

14. Transport Information

- **UN Number:** Not applicable / Not regulated.
- **UN Proper Shipping Name:** Not regulated.
- **Transport Hazard Class:** Not applicable.
- **Packing Group:** Not applicable.
- **Environmental Hazards:** Not a marine pollutant.
- **Special Precautions:** Protect from freezing and extreme heat during transport to maintain live biological cell viability.

15. Regulatory Information

- **TSCA Inventory:** All components are either exempt or listed.
- **SARA 302/313:** Contains no chemicals subject to Section 302 emergency planning or Section 313 toxic chemical release reporting.
- **California Proposition 65:** This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or reproductive harm.
- **International Regulations:** Often registered or exempted under specific biological/microbial pesticide laws rather than industrial chemical regulations (e.g., US EPA biopesticide registration rules apply if marketed explicitly as a nematicide).

16. Other Information

- **NFPA 704 Rating:** Health: 0 | Flammability: 0 | Instability: 0 | Special: None
- **HMIS Rating:** Health: 0 | Flammability: 0 | Physical Hazard: 0
- **Revision Date:** August 11, 2026.
- **Disclaimer:** The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. It is intended solely as guidance for safe handling, use, processing, storage, transportation, and disposal.