

Technical Data Sheet (TDS)

- **Product Name:** Composite Bioenzymes
- **English Name:** Composite Bioenzymes
- **CAS Number:** N/A
- **Formula:** Blend of Protease, Amylase, Cellulase, Lipase (biological enzymes)
- **Molecular Weight:** Variable (10,000-100,000 Da)
- **Product Characteristics:** High-efficiency composite biological enzyme preparation with synergistic effects of multiple enzymes. It can efficiently decompose proteins, starches, celluloses, and lipids. Environmentally friendly, biodegradable, non-toxic, and non-corrosive. Stable under recommended storage and use conditions, suitable for various industrial and environmental scenarios.

2. Technical Specifications (Complies with Industrial Standards)

Item	Specification
Appearance	Light yellow to brownish yellow transparent liquid
Total Enzyme Activity	≥ 100,000 U/mL
pH Value (25°C)	5.5-7.5
Active Component Content	10.0-15.0%
Moisture Content	85.0-90.0%
Heavy Metals (Pb)	≤ 10 ppm
Heavy Metals (As)	≤ 2 ppm
Total Bacterial Count	≤ 100 CFU/mL
E. coli	Negative
Viscosity (25°C)	50-200 mPa·s
Density (25°C)	1.02-1.08 g/cm ³
Temperature Stability	Stable at 20-50°C (enzyme activity retention ≥ 90%)
pH Stability	Stable at pH 5.0-8.0 (enzyme activity retention ≥ 90%)

3. Product Advantages

1. **Synergistic High Efficiency:** Multiple enzymes work together to decompose various organic substances, efficiency 30-50% higher than single-enzyme preparations.
2. **Environmentally Friendly:** Fully biodegradable, no secondary pollution; replaces chemical agents to reduce environmental burden.
3. **Wide Adaptability:** Stable under pH 5.0-8.0 and temperature 20-50°C, suitable for complex industrial and environmental conditions.
4. **Non-Toxic & Safe:** Non-toxic, non-corrosive, no harm to humans, animals, or equipment.
5. **Versatile Applications:** Suitable for multiple scenarios such as wastewater treatment, detergent, food processing, and textile industry.

4. Application Fields

- **Wastewater Treatment:** Municipal sewage, industrial wastewater (food processing, printing and dyeing, papermaking), decomposition of organic pollutants (COD, BOD).
- **Detergent Industry:** Laundry detergent, dishwashing liquid, enzyme-added cleaning products (stain removal, deodorization).



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- **Food Processing:** Enzymatic hydrolysis of proteins/starch, fruit and vegetable cleaning, brewing industry.
- **Textile Industry:** Fabric desizing (starch decomposition), bio-polishing, fiber modification.
- **Other Fields:** Paper pulp bleaching, soil remediation (organic matter decomposition), feed additive (improving digestion).

5. Usage Methods

- **Dosage** (Adjust according to specific application scenarios):
 - Wastewater Treatment: 50-200 ppm (based on COD concentration)
 - Detergent Formulation: 0.5-2.0% (of total formulation weight)
 - Food Processing: 100-500 ppm
 - Textile Desizing: 200-500 ppm
- **Addition Method:** Add directly or dilute with water (1:10-1:50 ratio) to the target system; stir evenly.
- **Use Conditions:** Control pH 5.0-8.0 and temperature 20-50°C for optimal enzyme activity; avoid contact with strong acids, strong bases, or high temperature.

6. Packaging & Storage

- **Packaging Specifications:**
 - 25 kg HDPE plastic drums (net weight)
 - 200 kg HDPE plastic drums (net weight)
 - 1000 kg IBC totes (net weight)
 - Custom packaging available upon request.
- **Storage Conditions:**
 - Recommended storage temperature: 2-8°C (refrigerated storage, extend shelf life to 6 months).
 - Short-term storage (≤ 1 month): $\leq 30^\circ\text{C}$, avoid direct sunlight and high temperature.
 - Keep containers tightly closed to prevent contamination and moisture loss.
 - Store separately from strong acids, strong bases, and oxidizing agents; avoid mixing.
- **Shelf Life:** 6 months (2-8°C storage); 3 months ($\leq 30^\circ\text{C}$ storage).
- **Transportation:**
 - Non-hazardous goods; transport by ordinary chemical vehicles.
 - Transport at $\leq 30^\circ\text{C}$; avoid collision, leakage, direct sunlight, and high temperature.

7. Safety & Protection

- The product is non-toxic and non-hazardous. Avoid direct contact with eyes for sensitive individuals.
- Wear safety glasses and nitrile rubber gloves during large-scale handling or prolonged contact.
- In case of eye contact, rinse with plenty of water for 5-10 minutes; consult a doctor if irritation persists.
- Do not ingest; if accidentally swallowed, rinse mouth with water and consult a doctor if discomfort occurs.

8. Quality Assurance

- The product is manufactured in accordance with ISO 9001 and ISO 14001 quality and environmental management system standards.
- Each batch of product is tested and accompanied by a Certificate of Analysis (COA) to ensure compliance with industrial standards.
- We provide technical support for product application, including dosage adjustment, use condition optimization, and problem-solving.