

Technical Data Sheet (TDS)

Revision Date: 05 FEB 2026

1. Product Overview

- Product Name: Biotin
- English Name: Biotin
- CAS Number: 58-85-5
- MDL Number: MFCD00005629
- Formula: C₁₀ H₁₆ N₂O₃S
- Molecular Weight: 244.31 g/mol
- **Product Characteristics:** High-purity vitamin B7 (Vitamin H), a water-soluble B-complex vitamin with biological activity. It is an essential coenzyme for carboxylase enzymes, involved in fatty acid synthesis and carbohydrate metabolism. Non-toxic, stable under normal conditions, compatible with most food/pharmaceutical/cosmetic ingredients. Widely used in food fortification, pharmaceuticals, cosmetics and feed additives.

2. Technical Specifications (Complies with USP/FCC/Industrial Standards)

| Item | Specification |
|----------------------------------|--|
| Appearance | White to off-white crystalline powder |
| Assay (Purity) | ≥ 98.0% (HPLC) |
| Melting Point | 228-232°C (decomposition) |
| Loss on Drying | ≤ 0.5% |
| Residue on Ignition | ≤ 0.1% |
| Heavy Metals (Pb) | ≤ 5 ppm |
| Heavy Metals (As) | ≤ 1 ppm |
| Total Bacterial Count | ≤ 10 CFU/g |
| E. coli | Negative |
| Solubility | Slightly soluble in water/ethanol; soluble in dilute alkalis |
| pH (1% aqueous suspension, 25°C) | 5.0-7.0 |
| Bulk Density | 0.8-1.0 g/cm ³ |
| Temperature Stability | Stable at 0-40°C (purity retention ≥ 98%) |

3. Product Advantages

1. **High Purity:** ≥98% assay, meets USP/FCC international standards, low impurity content.
2. **Biological Activity:** Natural active form (D-Biotin), high bioavailability for humans/animals.
3. **Safety:** Non-toxic, non-irritating, no side effects for normal use doses.
4. **Stability:** Good thermal/light stability under recommended storage conditions, long shelf life.
5. **Compatibility:** Reacts with dilute alkalis to form soluble salts; compatible with most food/pharmaceutical/cosmetic raw materials.
6. **Eco-friendly:** Fully biodegradable, no environmental pollution, meets global environmental standards.

4. Application Fields

- **Food Industry:** Fortification of dairy products, cereals, beverages, baked goods, nutritional supplements (vitamin B complex).
- **Pharmaceutical Industry:** Raw material for multivitamin preparations, dietary supplements, medications for biotin deficiency.



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- **Cosmetic Industry:** Hair care (anti-hair loss, hair strengthening), skin care (moisturizing, anti-aging) products.
- **Feed Industry:** Feed additive for poultry, livestock, aquaculture (promotes growth, improves reproductive performance).

5. Usage Methods

- **Food Fortification:** 0.01-0.1 mg/100g (dairy/cereals); 0.5-2 mg/unit (nutritional supplements).
- **Pharmaceuticals:** 1-5 mg per tablet/capsule (multivitamin preparations).
- **Cosmetics:** 0.001-0.01% (w/w) in hair/skin care products (dissolve in dilute alkali first).
- **Feed Additive:** 0.05-0.2 mg/kg (poultry/livestock feed); 0.1-0.3 mg/kg (aquaculture feed).
- **Formulation Tip:** Dissolve in 1-5% NaOH solution for aqueous formulations to improve solubility; avoid mixing with strong acids for long-term storage.

6. Packaging & Storage

Packaging Specifications

- 100 g/bottle, 500 g/bottle, 1 kg/bottle (laboratory/small batch use)
- 5 kg/drum, 25 kg/drum (industrial use)
- 100 kg/IBC tote (bulk use)
- Custom packaging available upon request.

Storage Conditions

- Store in a cool, dry, dark warehouse at $\leq 25^{\circ}\text{C}$; keep container tightly closed; protect from moisture and direct sunlight.
- Separate from noxious/odorous substances; no special incompatibility with common packaging materials (HDPE, glass).
- **Shelf Life:** 24 months (unopened, under specified storage conditions); 6 months after opening (sealed and refrigerated).

Transportation

- Non-hazardous goods; transport by ordinary vehicles.
- Avoid moisture, direct sunlight, high temperature ($>30^{\circ}\text{C}$) and collision during transport.
- No special transport requirements; comply with general cargo transport regulations.

7. Safety & Protection

- The product is non-toxic and non-hazardous for normal use; avoid dust inhalation for large-scale handling.
- Wear dust mask, safety glasses and nitrile gloves during operation; wash hands thoroughly after handling.
- In case of eye contact, rinse with plenty of water; no irritation expected for normal contact.
- No special disposal requirements; comply with local solid waste disposal regulations.

8. Quality Assurance

- Manufactured in accordance with ISO 9001 quality management system and GMP standards.
- Each batch of product is tested and accompanied by a Certificate of Analysis (COA) to ensure compliance with USP/FCC/industrial standards.
- Provide technical support for product application, including formulation optimization and dosage adjustment.
- Product can be customized for purity (98%/99%/99.5%) and particle size according to customer requirements.