

## Technical Data Sheet (TDS)

**Revision Date:** 05 FEB 2026

### 1. Product Overview

- Product Name: Ascorbic Acid
- English Name: Ascorbic Acid (L-Ascorbic Acid)
- CAS Number: 50-81-7
- MDL Number: MFCD00064237
- Formula: C<sub>6</sub> H<sub>8</sub> O<sub>6</sub>
- Molecular Weight: 176.12 g/mol
- **Product Characteristics:** High-purity Vitamin C, a water-soluble essential vitamin with strong antioxidant activity. It is an important nutrient for humans/animals, and also acts as a food antioxidant, color fixative and preservative. Non-toxic in normal doses, mild acidic, stable under cool/dry/dark conditions, degrades in light/heat/alkali. Widely used in food, pharmaceutical, cosmetic and feed industries.

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

Item	Specification
Appearance	White to off-white crystalline powder
Assay (Purity)	≥ 99.0% (Iodometric Titration)
Melting Point	190-192°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	Freely soluble in water; slightly soluble in ethanol
pH (5% aqueous solution, 25°C)	2.0-2.5
Bulk Density	1.5-1.7 g/cm <sup>3</sup>
Temperature Stability	Stable at 0-30°C (purity retention ≥ 98%); degrades at >60°C
Light Stability	Degrades in direct sunlight (protect from light)

### 3. Product Advantages

1. **High Purity:** ≥99% assay, meets USP/FCC international standards, low impurity and heavy metal content.
2. **Multi-functional:** Essential vitamin for organisms, strong antioxidant, food preservative/color fixative, cosmetic skin care ingredient.
3. **Safety:** Non-toxic in normal doses, approved as food/feed/pharmaceutical additive worldwide.
4. **Good Solubility:** Freely soluble in water, easy to formulate into aqueous solutions.
5. **Cost-effective:** High purity with competitive price, suitable for large-scale industrial application.
6. **Eco-friendly:** Fully biodegradable, no environmental pollution, meets global environmental standards.

### 4. Application Fields

- **Food Industry:** Fortification of dairy, cereals, beverages, candies, canned food; antioxidant/color fixative for meat, seafood, fruit and vegetable products.
- **Pharmaceutical Industry:** Raw material for multivitamin preparations, Vitamin C tablets/capsules, injection formulations; treatment for scurvy.



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- **Cosmetic Industry:** Skin care products (antioxidant, anti-aging, whitening), hair care products (moisturizing, anti-dandruff); concentration 0.1-5% (w/w).
- **Feed Industry:** Feed additive for poultry, livestock, aquaculture (improves immunity, promotes growth); dosage 50-200 mg/kg feed.
- **Industrial Field:** Antioxidant for rubber, plastics, coatings; photographic developer; water treatment antioxidant.

## 5. Usage Methods

- **Food Fortification:** 50-200 mg/100g (beverages/cereals); 0.01-0.1% (w/w) as antioxidant.
- **Pharmaceuticals:** 50-1000 mg per tablet/capsule; 500 mg/100 mL for injection.
- **Cosmetics:** 0.1-5% (w/w) in formulations; add at low temperature (<40°C) to avoid degradation.
- **Feed Additive:** 50-200 mg/kg (poultry/livestock feed); 100-300 mg/kg (aquaculture feed).
- **Formulation Tip:** Add antioxidant (e.g., sodium metabisulfite) and chelating agent (e.g., EDTA) to aqueous formulations to improve stability; avoid mixing with strong alkalis/oxidants.

## 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 (sealed HDPE/glass containers).

### Storage Conditions

- Store in a cool, dry, dark warehouse at  $\leq 25^{\circ}\text{C}$ ; keep container tightly closed; protect from moisture, light and heat.
- Separate from strong oxidizing agents, strong alkalis and heavy metal salts; avoid direct sunlight during storage/transport.
- **Shelf Life:** 24 months (unopened, specified storage conditions); 3 months after opening (sealed, cool storage).

### 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 has mild skin/eye irritation; wear **dust mask, safety glasses and nitrile gloves** for large-scale handling.
- Avoid dust inhalation and direct skin/eye contact; operate in a well-ventilated area.
- In case of skin contact: Rinse with plenty of running water for 10-15 minutes; apply emollient if irritation occurs.
- In case of eye contact: Rinse with plenty of running water for 10-15 minutes; consult an ophthalmologist if irritation persists.
- 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/GB standards.
- Provide professional technical support for product application, including formulation optimization, stability improvement and dosage adjustment.
- Food/pharmaceutical/feed/industrial grade products are available to meet different application requirements.