

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: 异抗坏血酸 - English Name: Isoascorbic Acid - CAS Number: 89-65-6 - Formula: $C_6H_8O_6$ - Molecular Weight: 176.13 g/mol - Product Characteristics: High-purity isomer of L-ascorbic acid (vitamin C), white crystalline powder, odorless, highly soluble in water; strong reducing property, excellent antioxidant and anti-corrosion performance; food-grade product meets FCC-VI and USP-NF standards, non-toxic and safe for human consumption; industrial-grade product has stable chemical properties, widely used as reducing agent and antioxidant; lower biological activity than L-ascorbic acid, but better antioxidant effect in some application scenarios.

2. Technical Specifications (Complies with FCC-VI & USP-NF)

Item	Specification
Appearance	White to off-white crystalline powder, odorless
Purity (HPLC)	≥ 99.0%
Melting Point (°C)	168-172 (decomposition)
Moisture Content	≤ 0.5%
Ash Content	≤ 0.1%
Heavy Metals (Pb) Content	≤ 0.0002%
Chloride (Cl ⁻) Content	≤ 0.005%
Specific Rotation ($[\alpha]_{20}^{20}$)	+95° to +105° (10% in water)
pH (1% Aqueous Solution, 25°C)	2.8-3.5

3. Product Advantages

1. Excellent Antioxidant Performance: Strong reducing property, can effectively inhibit oxidation of lipids, proteins and carbohydrates; prevent food browning, discoloration and deterioration, extend product shelf life by 2-3 times compared to non-antioxidant products. 2. High Purity & Safety: Purity ≥99.0%, low impurity content (heavy metals ≤0.0002%, chloride ≤0.005%); food-grade product meets international standards (FCC-VI, USP-NF), non-toxic and safe for human consumption; no side effects at recommended dosage. 3. Wide Application Range: Suitable for food, pharmaceutical, cosmetic and industrial fields; effective at 0-100°C and pH 2.0-7.0; compatible with other food additives (preservatives, colorants) without mutual interference; better antioxidant effect than L-ascorbic acid in some acidic food systems. 4. Stable Chemical Properties: Stable under normal storage and processing conditions; not easily decomposed by heat and light (better stability than L-ascorbic acid in the presence of heavy metal ions); maintains antioxidant activity for a long time in sealed packaging. 5. Cost-Effective: Lower production cost than L-ascorbic acid; same antioxidant effect can be achieved with lower dosage in most scenarios, reducing production costs for enterprises. 6. Environmentally Friendly: Readily biodegradable in natural environment ($BOD_5/COD = 0.6-0.8$); no secondary pollution to water bodies and soil when used in recommended dosage; low aquatic toxicity, no long-term ecological risks.

4. Application Fields

- Food Industry: Antioxidant and preservative for meat products (sausage, ham, bacon) to prevent fat oxidation and discoloration; anti-browning agent for fruits and vegetables (apple, potato, pear) to maintain color and freshness; antioxidant for beverages (juice, carbonated drinks, wine) to prevent flavor degradation and discoloration; preservative for canned food,



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

bakery products and dairy products. - Pharmaceutical Industry: Intermediate for synthesis of vitamin supplements, antiviral drugs and anti-anemia drugs; antioxidant in drug formulations to improve drug stability and extend shelf life; auxiliary ingredient in cosmetic drugs (skin brightener, anti-aging products). - Cosmetic Industry: Antioxidant additive in skin care products (lotion, cream, serum) to inhibit skin oxidation, delay aging and brighten skin tone; anti-discoloration agent in hair care products (shampoo, conditioner) to maintain product color stability. - Industrial Field: Reducing agent in chemical synthesis (reduction of nitro compounds, carbonyl compounds); antioxidant in water treatment systems to prevent pipeline corrosion; stabilizer for electroplating solutions to improve plating quality; antioxidant for rubber and plastic products to extend service life.

5. Usage Methods

- Dosage (Recommended): - Food Industry: 0.02-0.1% (based on product weight); meat products: 0.05-0.1%, fruits and vegetables: 0.02-0.05%, beverages: 0.01-0.03% - Pharmaceutical Industry: 0.5-2.0% (in drug formulations, based on total weight) - Cosmetic Industry: 0.1-1.0% (in skin care products, based on total weight) - Industrial Field: 0.1-5.0% (based on application requirements, e.g., water treatment: 0.1-0.5 mg/L) - Usage: 1. For food: Dissolve in a small amount of warm water (40-60°C) to prepare 10-20% aqueous solution, then add to food system evenly; 2. For pharmaceutical and cosmetic: Mix with other ingredients evenly during formulation, or dissolve in water/ethanol first; 3. For industrial use: Prepare appropriate concentration solution according to process requirements, add to reaction system or water treatment system.

6. Packaging & Storage

- Packaging Specifications: Food-grade: 25 kg kraft paper bags with food-grade PE inner liner (sealed, moisture-proof); Industrial-grade: 25 kg paper bags with PE inner liner or 200 L plastic drums; custom packaging available upon request. - Storage Conditions: Store in a cool, dry, well-ventilated warehouse (temperature 5-30°C, relative humidity ≤65%); keep container tightly closed and upright; avoid direct sunlight, heat sources (e.g., heaters, stoves) and moisture; store separately from strong oxidants, strong alkalis and toxic substances; stack bags/drums stably (no more than 4 layers for bags, no more than 2 layers for drums) to prevent tipping and leakage.

7. Safety & Protection

- The product is a white crystalline powder, causes mild skin irritation and severe eye irritation; inhalation of dust may cause slight respiratory tract discomfort; food-grade product is safe for human consumption at recommended dosage, but excessive ingestion may cause gastrointestinal discomfort (nausea, diarrhea). - Operators must wear personal protective equipment: dust mask (N95 or above), chemical safety goggles, nitrile gloves and dust-proof protective clothing. - Operate in a well-ventilated workshop; avoid generating dust during handling and dosing; no smoking, eating or drinking in the workplace; prepare emergency eyewash stations and safety showers nearby. - In case of skin contact: Rinse with plenty of running water for at least 10 minutes immediately, wash with mild soap; seek medical help if irritation persists.

8. Quality Assurance

- Manufactured in accordance with ISO 9001 quality management system and ISO 22000 food safety management system standards; strictly controls raw materials, production processes (synthesis, crystallization, purification, drying) and finished product testing; complies with international standards (FCC-VI, USP-NF) and national standards (GB 1886.285-2020). - Each batch of product is strictly tested with a Certificate of Analysis (COA), covering purity, appearance, melting point, moisture, ash content, heavy metals, specific rotation and other key indicators; ensures product quality is stable and meets customer requirements. - Provide professional technical support: customize usage schemes based on application scenarios (food, pharmaceutical, industrial); provide on-site guidance for dosing, operation and safety protection; solve user application problems in a timely manner; provide after-sales service and technical consultation.