

Technical Data Sheet (TDS)

Issue Date: 27 FEB 2026 **Product Name:** Succinic Acid (Food Grade) **CAS Number:** 110-15-6

1. Product Overview

- **English Name:** Succinic Acid (Food Grade)
- **Chinese Name:** 琥珀酸
- **CAS No.:** 110-15-6
- **Molecular Formula:** C₄H₆ O₄
- **Molecular Weight:** 118.09 g/mol
- **Source:** Synthesized by food-grade microbial fermentation (*Aspergillus niger*) and high-purity refinement process; complies with food safety production standards and infant food raw material requirements.
- **Product Characteristics:** White free-flowing crystalline powder, odorless, mild sour taste; natural dicarboxylic acid (metabolic intermediate of human TCA cycle); food-grade acidulant, flavor enhancer and preservative; freely soluble in water, stable in food processing environments; non-toxic at standard dosages, fully biodegradable, meets national/international food safety standards, suitable for various food and beverage production.

2. Technical Specifications (Complies with Food Industry Standard GB 2760-2021)

Item	Specification (Food Grade)
Appearance	White to off-white free-flowing crystalline powder
Assay (Succinic Acid, Titration)	≥ 99.5%
Melting Point	185-187°C
pH Value (25°C, 5% aqueous solution)	2.0-3.0
Loss on Drying (105°C, 2h)	≤ 0.2%
Ash Content	≤ 0.05%
Chloride (as Cl ⁻)	≤ 0.005%
Sulfate (as SO ₄ ²⁻)	≤ 0.005%
Density (25°C)	1.57 g/cm ³
Bulk Density	0.7-1.0 g/cm ³
Heavy Metals (Pb)	≤ 1 ppm
Arsenic (As)	≤ 0.5 ppm
Cadmium (Cd)	≤ 0.1 ppm
Mercury (Hg)	≤ 0.01 ppm
Total Bacterial Count	≤ 100 CFU/g
Yeast & Mold	≤ 10 CFU/g
E. coli/Salmonella	Negative
Water Solubility	Soluble in water (≈58 g/L at 25°C)
Temperature Stability	Stable at 0-121°C (assay retention ≥ 99%)
pH Stability	Stable at pH 2.0-7.0 (assay retention ≥ 99%)
Hygroscopy	Slightly hygroscopic
Taste	Mild sour, odorless

3. Product Advantages

1. **Natural & Food Grade:** Microbial fermentation source, consistent with natural succinic acid; assay ≥99.5%, ultra-low impurity/heavy metal content, meets infant food raw material limits; compliant with GB 2760-2021 and FDA GRAS standards.
2. **Multi-Functional Application:** Integrates **acidulant**, **flavor enhancer**, **preservative** and **pH regulator**; enhances food sour taste, improves flavor layering, inhibits microbial growth, adjusts food system pH; one product for multiple food processing needs.



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3. **Physiologically Safe:** Naturally present in human/animal bodies (TCA cycle intermediate), no metabolic burden; no toxic side effects at standard food dosages, safe for infants, pregnant women and the elderly.
4. **Extreme Stability:** Ultra-stable in food processing, no decomposition under high-temperature sterilization (121°C), baking and low-temperature freezing; no reaction with most food raw materials, ensures efficacy retention.
5. **Excellent Processability:** Soluble in water/ethanol, rapid dissolution without precipitation; uniform dispersion in liquid/solid food; mild sour taste, no bitter aftertaste, does not affect food original flavor.
6. **Green & Eco-Friendly:** Microbial fermentation process (low carbon emission); fully biodegradable, no environmental pollution; inhibits food spoilage microorganisms, reduces food waste, meets green food production requirements.
7. **Long Shelf Life:** Slightly hygroscopic, no caking under proper storage; 36 months shelf life for unopened products, stable quality between batches.

4. Application Fields

Succinic Acid is a high-efficiency multi-functional food-grade dicarboxylic acid additive, suitable for various beverage, bakery, confectionery, meat, dairy and seasoning products:

- **Beverage Industry:** Fruit juice, carbonated drink, sports drink, vinegar, fruit wine; acts as acidulant and flavor enhancer, adjusts sour taste, improves flavor stability, extends shelf life.
- **Bakery Industry:** Bread, cake, biscuit, pastry; acts as leavening agent auxiliary, pH regulator, improves product texture and taste, inhibits mold growth.
- **Confectionery Industry:** Candy, chocolate, jelly, jam; acts as acidulant and flavor enhancer, balances sweet/sour taste, improves flavor layering, prevents sugar crystallization.

5. Usage Methods

Food Type	Recommended Addition Dosage
Fruit Juice/Carbonated Drink/Sports Drink	0.05-0.5%
Bread/Cake/Biscuit	0.02-0.2%
Candy/Jam/Jelly	0.1-0.8%
Meat/Aquatic Products (Sausage/Ham)	0.03-0.3%
Yogurt/Cheese/Dairy Drink	0.05-0.4%
Soy Sauce/Sauce/Condiment	0.05-0.6%
Vinegar/Fruit Wine	0.1-1.0%

6. Packaging & Storage

- **Small Batch:** 1 kg / 5 kg / 10 kg: Food-grade aluminum foil bags (sealed, moisture-proof, oxygen-free) – for small-scale food production, health food, infant food and laboratory use.
- **Standard Batch:** 25 kg: Food-grade HDPE plastic drums with inner aluminum foil liner (sealed, dust-proof, moisture-proof) – for medium/large-scale food production and industrial use.
- **Bulk Batch:** 500 kg / 1000 kg: Food-grade FIBC bulk bags with moisture-proof PE liner (food-grade, sealed, moisture-proof valve) – for large-scale industrial production and export.
- **Custom Packaging:** Food-grade customized packaging (500 g/2 kg) available upon request for health food, infant food and small-batch production.

7. Safety & Protection

- The product is food-grade, low-toxic at standard dosages; mild skin/eye irritation in direct high-concentration contact; naturally present in human body, no toxic side effects at normal food intake, safe for humans (including infants/elderly) and animals.
- Wear food-grade PPE (safety goggles, nitrile rubber gloves, FFP1 dust mask, non-slip food-grade safety shoes) during all handling operations; impermeable protective clothing for bulk mixing/transfer.
- Follow food hygiene operation standards: wash hands thoroughly with food-grade hand sanitizer/pure water after handling; do not eat/drink/smoke while operating the product; use dedicated food-grade equipment and containers for handling to avoid cross-contamination; infant food raw material should use sterile dedicated equipment.