

Technical Data Sheet (TDS)

Issue Date: 27 FEB 2026 **Product Name:** Saccharose (Sucrose) (Food Grade, Anhydrous) **CAS Number:** 57-50-1

1. Product Overview

- **English Name:** Saccharose (Sucrose) (Food Grade, Anhydrous)
- **Chinese Name:** 蔗糖 (无水食品级)
- **CAS No.:** 57-50-1
- **Molecular Formula:** C₁₂H₂₂O₁₁
- **Molecular Weight:** 342.30 g/mol
- **Source:** Extracted and refined from natural raw materials (cane/beet) by food-grade processing (crushing, extraction, purification, crystallization, drying); complies with food GMP and food sweetener production requirements, no chemical synthesis additives.
- **Core Characteristics:** White crystalline powder/granule, odorless, pure mild sweet taste (relative sweetness=1.0, the reference standard for food sweeteners); the most common natural food sweetener; multi-functional food additive (sweetener, bulking agent, humectant, crystallization regulator); highly soluble in water, stable in neutral/weakly alkaline systems; non-toxic, fully metabolized in the human body for energy; meets national/international food safety standards, unrestricted use in most foods, the most widely used sweetener in the global food industry.

2. Technical Specifications (Complies with GB 2760-2021 & International Food Sweetener Standards)

Test Item	Food Grade Specification
Appearance	White crystalline powder/granule, free-flowing, no caking
Assay (Saccharose)	≥ 99.5%
Melting Point	185-187°C (decomposes)
pH Value (25°C, 5% aqueous solution)	5.0-7.0
Loss on Drying (105°C, 2h)	≤ 0.1%
Ash Content	≤ 0.05%
Reducing Sugar (as Glucose)	≤ 0.05%
Heavy Metals (Pb)	≤ 0.5 ppm
Arsenic (As)	≤ 0.1 ppm
Cadmium (Cd)	≤ 0.05 ppm
Mercury (Hg)	≤ 0.01 ppm
Iron (Fe)	≤ 5 ppm
Total Bacterial Count	≤ 50 CFU/g
Yeast & Mold	≤ 10 CFU/g
E. coli / Salmonella	Negative
Water Solubility	Freely soluble in water (≈2000 g/L at 25°C), slightly soluble in ethanol
Temperature Stability	Stable at 0-121°C (no decomposition)
pH Stability	Stable at pH 5.0-8.0 (slight hydrolysis at pH<4.0)
Hygroscopy	Moderately hygroscopic (caking at RH>70%)

3. Core Product Advantages

1. **Natural High Purity:** Extracted from natural cane/beet, no chemical synthesis; assay ≥99.5%, ultra-low impurity/heavy metal content, meets infant food raw material limits; pure sweet taste with no bitter aftertaste, the global reference standard for food sweeteners (relative sweetness=1.0).
2. **Absolute High Safety:** FAO/WHO ADI not specified (no upper limit for normal intake); FDA GRAS certified; no acute/chronic toxicity, no sensitization/mutagenicity/carcinogenicity; fully metabolized in the human body for energy, no residual; safe for all population groups including infants, pregnant women and the elderly.



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3. **Multi-Functional Efficacy:** Integrates **primary sweetener, bulking agent, humectant and crystallization regulator**; one product meets multiple food processing needs; improves food taste, texture and shape retention; acts as a humectant to prevent food drying and hardening; regulates crystallization in candy/confectionery production.
4. **Excellent Solubility & Stability:** Highly soluble in water (2000 g/L at 25°C), dissolves rapidly in cold/hot water; stable in normal food processing (0-121 °C sterilization/baking); stable in neutral/weakly alkaline systems (pH5.0-8.0); no decomposition or discoloration under normal storage conditions.

4. Wide Application Fields

Saccharose is the most common and versatile natural food sweetener, suitable for all types of food and beverage production, as the primary sweetener/bulking agent, applicable to candy, beverage, bakery, dairy, confectionery, seasoning and infant food:

- **Candy & Confectionery Industry:** Hard candy, soft candy, chocolate, toffee, marshmallow; primary sweetener/crystallization regulator, determines sweet taste and product shape, prevents excessive crystallization/hardening, improves mouthfeel.
- **Beverage Industry:** Fruit juice, carbonated drink, sports drink, milk beverage, fruit wine, tea drink; primary sweetener, provides pure sweet taste, balances sour/bitter taste of raw materials, improves beverage flavor.

5. Usage Methods & Recommended Dosage

Food Type	Recommended Addition Dosage	Sweetness Adjustment Note
Hard Candy/Soft Candy/Chocolate	10-80%	Determines product sweetness, higher dosage for hard candy
Fruit Juice/Carbonated Drink/Tea Drink	5-15%	Balance sour/bitter taste, adjust according to fruit raw material taste
Bread/Cake/Pastry	5-20%	Improve sweetness and softness, low dosage for savory bakery
Yogurt/Ice Cream/Cheese	3-10%	Balance fermented sour taste, improve smooth mouthfeel
Soy Sauce/Salad Dressing/Condiment Sauce	1-8%	Balance salty/sour taste, enhance flavor coordination
Canned Fruit/Fruit Puree/Jam	5-30%	Enhance fruit sweet taste, prevent drying and discoloration
Infant Rice Flour/Baby Fruit Puree	1-5%	Improve palatability, meet infant taste needs (low dosage)

6. Packaging, Storage & Transportation

- **Small Batch:** 1kg/5kg/10kg – Food-grade aluminum foil bags (sealed, moisture-proof, oxygen-free) with inner plastic lining for small-scale production, infant food and laboratory use.
- **Standard Batch:** 25kg – Food-grade HDPE plastic drums/cartons (sealed, dust-proof, moisture-proof) with inner plastic film for medium/large-scale food production.
- **Bulk Batch:** 500kg/1000kg – Food-grade FIBC bulk bags (moisture-proof PE liner, sealed valve) for large-scale industrial production and export.

7. Safety & Quality Assurance

- The product is food-grade, non-toxic, non-irritating; no mandatory PPE for small-scale use; wear non-slip food-grade safety shoes for bulk handling to prevent slipping from spilled powder/granule; FFP1 dust mask is optional for heavy dust generation (only to prevent dust inhalation).
- Follow food hygiene operation standards: wash hands with soap and water after handling; use dedicated food-grade equipment/containers; keep the operating area dry to avoid caking of spilled powder; infant food production uses sterile dedicated equipment to avoid cross-contamination.