

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Potassium Sorbate (Food Grade)
- English Name: Potassium Sorbate
- CAS Number: 590-00-1
- Formula: C₆ H₇ KO₂
- Molecular Weight: 150.22 g/mol
- **Product Characteristics:** Food-grade Potassium Sorbate is a white odorless crystalline powder, a highly efficient and low-toxic food preservative derived from sorbic acid and potassium hydroxide. It inhibits the growth and reproduction of mold, yeast and aerobic bacteria by interfering with the metabolic process of microorganisms, with excellent antifungal and antiseptic effects (optimal at pH 4.0-6.0). Highly soluble in water, stable under normal food processing and storage conditions, FAO/WHO approved ADI 0-25 mg/kg bw, compliant with GB 2760-2021 standards. It is the most widely used food preservative in the global food industry, also applicable to cosmetics and feed preservation.

2. Technical Specifications (Complies with GB 1886.30-2015 / FCC / FAO/WHO)

Item	Specification (Food Grade)
Appearance	White to off-white free-flowing crystalline powder/granule, odorless
Assay (C ₆ H ₇ KO ₂)	≥ 99.0%
Moisture Content	≤ 1.0%
pH Value (25°C, 5% aqueous solution)	7.0-8.5
Free Acid (as sorbic acid)	≤ 0.5%
Free Alkali (as K ₂ CO ₃)	≤ 0.2%
Heavy Metals (Pb)	≤ 0.5 ppm
Arsenic (As)	≤ 0.1 ppm
Sulfate (as SO ₄)	≤ 0.01%
Chloride (as Cl)	≤ 0.01%
Decomposition Temperature	≥ 270°C
Water Solubility	143 g/100mL (20°C)
Hygroscopy	Slightly hygroscopic
Microbiological Limit	Total bacterial count ≤ 1000 CFU/g; Yeast & Mold ≤ 100 CFU/g

3. Product Advantages

1. **High Efficiency & Broad-Spectrum Antiseptic:** Inhibits mold, yeast and most aerobic bacteria; no effect on lactic acid bacteria (beneficial bacteria), suitable for fermented food; long antiseptic period (2-6 months for food products).
2. **Low Toxicity & High Safety:** FAO/WHO approved ADI 0-25 mg/kg bw; no mutagenicity, carcinogenicity or reproductive toxicity; excreted rapidly in human body, no accumulation; the safest food preservative recognized internationally.
3. **Good Solubility & Processability:** Highly soluble in water (143 g/100mL at 20°C), easy to prepare aqueous solution; stable in food processing (pasteurization, boiling, cold storage); no effect on food color, flavor and texture.
4. **Wide pH Adaptability:** Effective in pH 2.5-6.5 food systems (optimal at pH 4.0-6.0); suitable for acidic, neutral and slightly alkaline food, wider adaptability than benzoate preservatives.
5. **Good Compatibility:** Compatible with all common food additives (sugar, salt, starch, citric acid, other preservatives such as sodium benzoate); synergistic effect with nisin to improve antiseptic effect.

6. **Eco-Friendly & Biodegradable:** Fully biodegradable in environment; no persistent pollution; no adverse effects on aquatic/terrestrial organisms; meets global environmental protection standards.

4. Application Fields

Food-grade Potassium Sorbate is a broad-spectrum food preservative (complies with GB 2760-2021 dosage limit), suitable for **all types of food and beverage** that need antifungal and antiseptic treatment; also used in cosmetics and feed:

- **Beverage Industry:** Fruit juice, carbonated beverage, tea beverage, dairy beverage, wine, fruit vinegar; antiseptic and antifungal, extend shelf life by 2-4 months.
- **Dairy Industry:** Yogurt, cheese, milk powder, cream, dessert; inhibit mold and yeast, retain the activity of beneficial lactic acid bacteria.
- **Pastry & Bakery Industry:** Cake, bread, moon cake, biscuit, pastry filling; prevent mold growth, extend shelf life at room temperature by 1-3 months.
- **Sauce & Condiment Industry:** Soy sauce, vinegar, salad dressing, tomato sauce, hot pot base, pickled vegetables; antiseptic and antifungal, avoid mildew and deterioration.
- **Canned Food Industry:** Fruit canned, vegetable canned, meat canned, aquatic canned; inhibit microbial growth, maintain food quality and flavor.
- **Snack Food Industry:** Candy, jelly, dried fruit, potato chips, instant food; antifungal preservative, extend shelf life of pre-packaged snacks.
- **Cosmetic/Feed Industry:** Cosmetic lotion, cream, shampoo (low-concentration); livestock/poultry feed, aquatic feed (antifungal preservative, non-food grade).

5. Usage Methods

Food Type	Recommended Dosage	Optimal pH Range
Fruit Juice/Beverage	0.02-0.05%	3.5-5.5
Yogurt/Dairy Dessert	0.03-0.06%	4.0-6.0
Cake/Bread/Pastry	0.05-0.10%	4.5-6.5
Soy Sauce/Vinegar/Condiment	0.05-0.15%	3.0-5.0
Canned Food/Fruit Jelly	0.04-0.08%	3.5-5.5
Pickled Vegetables/Dried Fruit	0.06-0.12%	3.0-4.5

6. Packaging & Storage

- **Small Batch:** 1kg/5kg/10kg – Aluminum foil vacuum bags (moisture-proof/oxygen-free) with outer carton; for small-scale food processing and retail.
- **Standard Batch:** 25kg – Moisture-proof paper bags with plastic inner lining / sealed HDPE plastic drums; 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.
- **Custom Packaging:** 200g/500g food-grade small vacuum bags available upon request (household/small-batch use).

7. Safety & Protection

- **Personal Protection:** Wear FFP1 dust mask, chemical protective goggles and nitrile rubber gloves during bulk handling (weighing/packaging); avoid dust inhalation and direct contact with skin/eyes.
- **Workplace Safety:** Operate in a well-ventilated area with local exhaust ventilation; do not eat, drink or smoke in the workplace; wash hands and face thoroughly with soap after handling.
- **Emergency Treatment:**
 - Skin contact: Rinse with plenty of running water for 5-10 minutes; apply mild emollient if irritation occurs.