

Technical Data Sheet (TDS)

- Sodium Chloride (Food Grade)

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1. Product Overview

- **Product Name:** Sodium Chloride (Food Grade)
- **CAS Number:** 7647-14-5
- **EINECS/EC Number:** 231-598-3
- **Chemical Formula:** NaCl
- **Molecular Weight:** 58.44
- **Chemical Name:** Sodium Chloride
- **Product Characteristics:** High-purity food-grade sodium chloride ($\geq 99.5\%$) processed by refined crystallization; white crystalline powder/crystals, odorless, pure salty taste, non-hygroscopic and **extremely stable** under all food processing conditions. As the most basic and essential food additive, it acts as **flavor enhancer, salting agent, preservative aid, texture modifier and electrolyte supplement**; it enhances food taste, inhibits microbial growth, improves food texture and maintains food system stability. It is an essential nutrient for the human body, compatible with all food ingredients and processing technologies, and widely used in all processed food production. FCC/USP certified; compliant with GB 5461-2021/GB 2760/FDA/EC/CAC standards, the core basic additive for food industry.
- **Core Application:** Food additive (flavor enhancer/salting agent) for meat, aquatic products, dairy, bakery, confectionery, sauce, seasoning, beverage, canned food and all processed food industries; brining agent for cured food, dough conditioner for bakery, electrolyte supplement for functional beverage.

2. Technical Specifications (Compliant with GB 5461-2021 & FCC/USP)

Item	Standard Requirement
Appearance	White crystalline powder/crystals, free-flowing
Odor/Taste	Odorless, pure salty, no off-taste
Assay (NaCl)	$\geq 99.5\%$
Moisture	$\leq 0.5\%$
Insoluble Matter in Water	$\leq 0.01\%$
Sulfate (as SO_4^{2-})	$\leq 0.02\%$
Calcium (Ca^{2+})	$\leq 0.01\%$
Magnesium (Mg^{2+})	$\leq 0.005\%$
Potassium (K^+)	$\leq 0.01\%$
Heavy Metals (as Pb)	≤ 0.5 ppm
Arsenic (As)	≤ 0.1 ppm
Cadmium (Cd)	≤ 0.01 ppm
Mercury (Hg)	≤ 0.001 ppm
Iron (Fe^{3+})	$\leq 0.002\%$
Total Bacterial Count	≤ 10 CFU/g
E. coli	Negative in 25g
Salmonella	Negative in 25g
Water Solubility (25°C)	≥ 36 g/100mL
Hygroscopy	Non-hygroscopic
pH Value (5% aqueous solution)	6.5-7.5
Temperature Stability	Stable at 0-150°C (food processing temperature)
Storage Stability	Unlimited (unopened), 12 months (after opening)

3. Product Advantages

1. **Pure Salty Taste:** High purity ($\geq 99.5\%$) with no bitter/astringent off-taste; enhances the natural flavor of food without masking other tastes, the most classic food flavor enhancer.
2. **Extreme Stability:** Inorganic ionic compound, no decomposition/oxidation/hydrolysis under all food processing conditions (heating, freezing, acid/alkaline); stable storage with unlimited shelf life for unopened packaging.

4. Application Fields & Recommended Dosage

(Adjust dosage according to food type, flavor requirement and processing technology; all dosages are w/w based on food raw materials, comply with GMP dosage limits for all food categories, and meet dietary sodium intake guidelines.)

Application Field	Typical Products	Recommended Dosage	Core Effect
Meat & Aquatic Products	Ham, sausage, bacon, cured fish, frozen meat	1.0-3.0%	Brining, water retention, antiseptis, flavor enhancement
Sauce & Seasoning	Soy sauce, vinegar, ketchup, salad dressing, salt sauce	3.0-10.0%	Flavor base, antiseptis, stabilize emulsion
Bakery	Bread, cake, pastry, cookie, dough	0.3-1.0%	Dough conditioner, enhance gluten strength, flavor balance
Dairy Products	Cheese, yogurt, butter, milk beverage	0.1-0.5%	Flavor enhancement, texture improvement, antiseptis aid
Confectionery & Dessert	Candy, jelly, ice cream, pastry filling	0.05-0.2%	Flavor balance (sweet-salty contrast), texture improvement
Beverage	Functional beverage, sports drink, vegetable juice	0.05-0.3%	Electrolyte supplement, flavor enhancement, taste balance
Canned Food	Fruit/vegetable cans, meat/aquatic cans	0.5-2.0%	Antiseptis, flavor enhancement, prevent food spoilage
Snack Food	Potato chips, nuts, dried fruit, instant noodles	0.5-2.0%	Flavor enhancement, antiseptis, taste improvement

5. Usage Methods & Formulation Guidelines

Key Tip: Sodium chloride has high water solubility and universal compatibility; it can be dissolved in water for liquid/semi-solid food or dry mixed with solid ingredients; add at the early stage of processing to fully play its flavor enhancement and antiseptis effects, avoid excessive addition to meet dietary guidelines.

1. **Aqueous Dissolution Method:** For liquid/semi-solid food (beverage, sauce, marinade, dairy), dissolve sodium chloride in room temperature food-grade deionized water (10-20% stock solution) with stirring; add the stock solution to food and mix evenly (rapid dissolution, no precipitation).

6. Packaging, Storage & Transportation

- **Small Packaging:** 1 kg/5 kg food-grade sealed plastic bags/paper bags (for small food factories, catering and household use)
- **Standard Packaging:** 25 kg food-grade HDPE plastic drums/sealed paper bags (for industrial batch production)
- **Bulk Packaging:** 500 kg/1000 kg food-grade jumbo bags (for large food factories with bulk handling)

7. Quality Assurance & Technical Support

1. **Production Standards:** Manufactured in a GMP/HACCP-compliant food-grade production workshop; adopts advanced refined crystallization and purification technology, no harmful additives; meets ISO 9001 (Quality Management) and ISO 22000 (Food Safety) standards; NaCl content $\geq 99.5\%$, pure taste with no off-taste.
2. **Batch Testing:** Every batch of sodium chloride is subject to **strict multi-index testing** (physical, chemical, microbiological, purity, heavy metals, trace elements); a detailed Certificate of Analysis (COA) is provided with each shipment to ensure compliance with GB 5461-2021/FCC/USP standards.