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Technical Data Sheet (TDS)

- Sodium Glutamate (Food Grade)
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1. Product Overview

- **Product Name**: Sodium Glutamate (Food Grade)
- **CAS Number**: 527-07-1
- **EINECS/EC Number**: 208-403-7
- **Chemical Formula**: $C_5H_8NNaO_4 \cdot H_2O$
- **Molecular Weight**: 187.13
- **Product Characteristics**: High-purity food-grade sodium glutamate (MSG) produced by microbial fermentation and crystallization; white crystalline powder/crystals, odorless, strong natural umami taste, slightly hygroscopic and highly soluble in water. As a **classic food flavor enhancer**, it intensifies the savory taste of food, balances and enriches overall flavor, and reduces the amount of salt used in food formulation. It is a natural amino acid salt, compatible with all common food ingredients, stable under various food processing conditions, and the most widely used umami agent in the global food industry. FDA GRAS/EC E621 certified; compliant with GB 1886.305-2021/GB 2760/FDA/EC/CAC standards, a core additive for condiment and processed food production.
- **Core Application**: Food additive (flavor enhancer/umami agent) for seasoning, sauce, soy sauce, meat, aquatic, bakery, snack, canned food, instant food and all processed food industries; key raw material for chicken essence, monosodium glutamate and compound condiment formulation.

2. Technical Specifications (Compliant with GB 1886.305-2021 & FCC/USP)

Item	Standard Requirement
Appearance	White crystalline powder/crystals, free-flowing
Odor/Taste	Odorless, strong umami taste, no off-taste
Assay (Sodium Glutamate)	≥99.0%
Loss on Drying	≤0.5%
Residue on Ignition	≤0.1%
pH Value (5% aqueous solution, 25℃)	6.7-7.2
Chloride (as Cl^-)	≤0.05%
Sulfate (as SO_4^{2-})	≤0.03%
Ammonium (as NH_4^+)	≤0.02%
Heavy Metals (as Pb)	≤1 ppm
Arsenic (As)	≤0.5 ppm
Iron (Fe)	≤10 ppm
Calcium (Ca)	≤0.01%
Magnesium (Mg)	≤0.005%
Total Bacterial Count	≤100 CFU/g
Yeast & Mold	≤10 CFU/g
E. coli	Negative in 1g
Salmonella	Negative in 25g
Water Solubility	≥70 g/100mL (25℃)
Temperature Stability	Stable at 0-120℃ (food processing temperature)
pH Stability	Stable at 3.0-10.0
Storage Stability	24 months (unopened), 6 months (after opening)

3. Product Advantages

1. **Strong Natural Umami**: Pure umami taste, no bitter/astringent aftertaste; intensifies food savory flavor, makes taste more rich and layered.

2. **Salt Reduction Effect**: Reduces salt dosage by 20-30% while maintaining food flavor; helps formulate low-salt food, meets healthy dietary requirements.
3. **High Purity & Quality**: Assay ≥99.0%, low impurity content; consistent flavor and quality, no adverse effect on food color/taste.

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.)

Application Field	Typical Products	Recommended Dosage	Core Effect
Condiment	Monosodium glutamate, chicken essence, compound seasoning	80.0-99.0%	Main umami raw material, flavor core
Sauce & Soy Sauce	Soy sauce, oyster sauce, ketchup, salad dressing	0.5-3.0%	Enhance umami, balance sour/salty taste
Meat & Aquatic Products	Ham, sausage, frozen meat, fish balls, seafood	0.2-1.0%	Enhance meat/fish umami, improve taste
Instant Food	Instant noodles, instant porridge, soup base	1.0-5.0%	Rich umami, quick flavor release
Canned Food	Canned meat/fish/vegetable, preserved food	0.3-1.5%	Enhance flavor, prevent taste loss during sterilization
Bakery & Snack	Biscuit, cake, puffed food, dried fruit	0.1-0.5%	Balance sweet taste, enrich flavor layers
Soup & Hot Pot	Bone soup, clear soup, hot pot base	0.5-2.0%	Strong umami, rich soup taste
Catering & Home Cooking	Stir-fry, braised food, soup, hot pot	0.2-1.0%	Enhance food flavor, reduce salt use

5. Usage Methods & Formulation Guidelines

Key Tip: Sodium glutamate is highly soluble in water, dissolves quickly in cold/hot water; can be directly added to liquid food or mixed with solid ingredients for dry food; the best flavor enhancement effect is achieved when used with a small amount of salt (salt-glutamate synergy).

1. **Aqueous Dissolution Method (Liquid Food)**: Add sodium glutamate powder to room temperature/hot food-grade water (stirring for faster dissolution); dissolve completely and add to soup, sauce, beverage and mix evenly; no precipitation or agglomeration.

6. Packaging, Storage & Transportation

- **Small Packaging**: 100g/200g/500g food-grade sealed plastic bags (for home cooking and small catering use)
- **Standard Packaging**: 1 kg/5 kg food-grade sealed paper bags with inner PE liner (for small food factories and condiment production)
- **Bulk Packaging**: 25 kg food-grade HDPE plastic drums/paper bags (inner PE liner, sealed cover; for industrial batch production)

7. Quality Assurance & Technical Support

1. **Production Standards**: Manufactured in a GMP/HACCP-compliant food-grade production workshop; adopts advanced microbial fermentation and crystallization technology (no chemical solvents/additives); meets ISO 9001 (Quality Management) and ISO 22000 (Food Safety) standards; assay ≥99.0%, high purity and stable umami taste.
2. **Batch Testing**: Every batch of sodium glutamate is subject to **strict multi-index testing** (physical, chemical, microbiological, purity, heavy metals); a detailed Certificate of Analysis (COA) is provided with each shipment to ensure compliance with GB 1886.305-2021/FCC/USP standards.