Technical Data Sheet (TDS)

- Sodium Diacetate (Food Grade)
Issue Date: 28 FEB 2026 | Version: 1.0

1. Product Overview

- **Product Name**: Sodium Diacetate (Food Grade)
- **CAS Number**: 126-96-5
- **EINECS/EC Number**: 204-814-9
- **Chemical Formula**: $C_4H_7NaO_4$
- **Molecular Weight**: 142.09
- **Product Characteristics**: High-purity food-grade sodium diacetate is a white crystalline powder with high water solubility and weak acidic properties, with a slight acetic acid odor. As a **multi-functional food additive**, it has four core functions: (1) Preservative/Mold Inhibitor: Inhibits the growth of mold, yeast and spoilage bacteria by releasing acetic acid, with broad-spectrum antimicrobial effect; (2) Acidity Regulator: Adjusts the pH of food systems to enhance food stability and flavor; (3) Humectant: Prevents food from drying and hardening, maintains food texture; (4) Anticaking Agent: Improves the flowability of powder food, prevents caking. It is a low-toxicity, environmentally friendly food additive, stable at high temperature food processing, and suitable for various food categories. FDA GRAS/EU E262(ii) certified; compliant with GB 1886.184-2016/GB 2760-2021 standards, widely used in grain, bakery, meat and other food industries.

2. Technical Specifications (Compliant with GB 1886.184-2016 & FCC/USP)

Item	Standard Requirement (Food Grade)
Appearance	White crystalline powder, free-flowing, no caking
Odor/Taste	Slight acetic acid odor, slightly acidic and salty, no off-taste
Assay (Sodium Diacetate, dry basis)	≥98.0%
Loss on Drying (105℃, 2h)	≤2.0%
pH Value (10% aqueous solution, 25℃)	4.5-5.5
Acetic Acid Content	39.0-41.0%
Sodium Acetate Content	58.0-60.0%
Chloride (as Cl^-)	≤0.01%
Sulfate (as SO_4^{2-})	≤0.01%
Heavy Metals (as Pb)	≤1 ppm
Arsenic (As)	≤0.5 ppm
Iron (Fe)	≤5 ppm
Insoluble Matter in Water	≤0.01%
Water Solubility (25℃)	≥110 g/100mL
Total Bacterial Count	≤100 CFU/g
Yeast & Mold	≤10 CFU/g
E. coli	Negative in 1g
Salmonella	Negative in 25g
Temperature Stability	Stable at 0-120℃ (food processing temperature); degrades >150℃
pH Stability	Stable at pH 3.0-8.0 (preservative efficacy retention ≥90%)
Storage Stability	24 months (unopened), 6 months after opening

3. Product Advantages

1. **Broad-Spectrum Antimicrobial**: Inhibits mold, yeast and most spoilage bacteria (E. coli, Staphylococcus aureus); effective for both acidic and neutral food systems, suitable for various food categories.

2. **High Temperature Stability**: Stable at 0-120℃, no decomposition or loss of efficacy during food processing (baking, boiling, sterilization); suitable for high-temperature processed food.

4. Application Fields & Recommended Dosage

Comply with **GB 2760-2021 (China)**, EC 1333/2008 (EU) and FDA 21 CFR 173.310 (US) standards; adjust dosage according to food type, storage conditions and shelf life requirements (all dosages are **w/w** based on food raw materials).

Application Field	Typical Products	Recommended Dosage	Core Effect
Grain & Oil	Rice, wheat, corn, flour, edible oil	0.05-0.2%	Mold inhibition, anti-corrosion, extend storage period
Bakery & Pastry	Bread, cake, biscuit, moon cake, steamed bun	0.1-0.5%	Mold inhibition, humectant, maintain soft texture
Processed Meat	Ham, sausage, bacon, preserved meat, lunch meat	0.2-0.8%	Antimicrobial, acidity regulation, improve flavor
Dairy Products	Yogurt, cheese, milk powder, dairy beverage	0.05-0.3%	Inhibit yeast/mold, stabilize pH, extend shelf life
Condiment & Sauce	Soy sauce, vinegar, salad dressing, compound seasoning	0.1-0.4%	Antimicrobial, acidity regulation, enhance flavor stability
Canned Food	Canned fruit/vegetable/meat/fish	0.1-0.6%	Preservative, mold inhibition, prevent spoilage during storage
Beverage	Fruit juice, plant beverage, carbonated beverage	0.02-0.1%	Acidity regulation, stabilize flavor, inhibit microbial growth
Snack Food	Potato chips, biscuits, candy, dried fruit	0.05-0.3%	Mold inhibition, anticaking, maintain product texture

5. Usage Methods & Formulation Guidelines

Key Tip: Can be used as solid powder or aqueous solution; add at the early stage of food processing for uniform dispersion; avoid mixing with strong alkaline ingredients to prevent neutralization reaction (loss of efficacy).

1. **Aqueous Solution Preparation**: Weigh the required amount of sodium diacetate, dissolve in **food-grade deionized water** to prepare a 10-20% aqueous solution (1:4-1:9 powder:water); stir until completely dissolved (no undissolved particles). Suitable for liquid/semi-solid food (beverage, sauce, dairy).

6. Packaging, Storage & Transportation

- **Small Packaging**: 1 kg/5 kg food-grade sealed paper bags with inner PE liner (for small food factories and household use)
- **Standard Packaging**: 25 kg food-grade HDPE plastic drums (sealed, dust-proof, moisture-proof; for industrial batch production)
- **Bulk Packaging**: 500 kg/1000 kg food-grade jumbo bags (inner PE liner, sealed; for large-scale food production)
- **Custom Packaging**: Customized weight and packaging form available according to customer requirements (vacuum packaging for high-humidity areas).
- **Labeling Requirements**: Each package is marked with product name, CAS number, net weight, dosage limit, storage conditions, "Slight Skin/Eye Irritation" and food grade certification.

7. Safety Operation & Protection

1. **Operation Personnel**: Ordinary operators can operate after simple training; no professional hazardous chemical operation certificate required.
2. **Personal Protection**: Wear N95 dust mask, safety goggles and nitrile rubber gloves during dry operation (weighing, mixing); wear gloves only for aqueous solution handling.
3. **Operation Area**: Operate in a well-ventilated area with dust collection equipment; set up a dedicated operation post to avoid dust flying; place a washbasin and neutral soap near the post for hand washing.