

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Sodium Bicarbonate
- English Name: Sodium Bicarbonate; Baking Soda; Sodium Hydrogen Carbonate
- CAS Number:144-55-8
- Formula:NaHCO₃
- Molecular Weight:84.01 g/mol
- Product Characteristics: White fine crystalline powder, odorless, slightly salty taste, non-hygroscopic. Dual-purpose inorganic salt for food/industry, weakly alkaline, non-flammable, soluble in water (slow dissolution, slightly endothermic). Decomposes at > 50°C to produce CO₂, reacts with acids to release gas rapidly. Low toxicity, mild irritation, suitable for food processing, chemical synthesis, medical and environmental protection.

2. Technical Specifications

Item	Specification (Food/Industrial Dual Grade)
Appearance	White fine crystalline powder
Purity (NaHCO ₃ Content)	≥ 99.5%
Moisture Content	≤ 0.2%
Insoluble Matter in Water	≤ 0.01%
Chloride (as Cl ⁻)	≤ 0.05%
Sulfate (as SO ₄ ²⁻)	≤ 0.03%
Heavy Metals (Pb)	≤ 0.5 ppm
Arsenic (As)	≤ 0.1 ppm
pH Value (5% aqueous solution, 25°C)	8.0-9.5
Solubility (25°C)	9.6 g/100 mL water
Decomposition Temperature	> 50°C (releases CO ₂)
Melting Point	Decomposes before melting
Density (20°C)	2.159 g/cm ³

3. Product Advantages

1. Food/Industrial Dual Grade: Meets food safety standards, can be used in both food processing and industrial production, high cost performance.
2. High Purity & Low Impurity: Strict control of heavy metals, chloride and sulfate, no harmful substances.
3. Mild Alkalinity: Weak alkaline, no strong corrosion, suitable for pH adjustment of food and mild industrial systems.
4. Good Gas Release Property: Rapid reaction with acids to produce CO₂, high gas yield, stable performance.
5. Thermal Decomposition: Controlled decomposition temperature, suitable for food leavening and industrial gas generation.

4. Application Fields



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- Food Industry: Leavening agent for bread, cake, steamed bun and pastry; acid neutralizer for dairy products and beverages; preservative for pickled foods.
- Pharmaceutical Industry: Raw material for antacid drugs (neutralize gastric acid); effervescent tablet and oral liquid excipient.
- Chemical Synthesis: Precursor for sodium carbonate, sodium percarbonate and foam fire extinguisher production.
- Environmental Protection: Flue gas desulfurization (FGD) in power plants; neutralization of acidic industrial wastewater (mild alkaline, no secondary pollution).
- Daily Chemicals: Production of toothpaste, shower gel and laundry detergent (mild cleaning and deodorizing).
- Laboratory Research: Analytical reagent, buffer solution preparation, and gas generation experiment.

5. Usage Methods

- Food Processing: Dosage 0.5-2.0% (based on raw material weight); mix evenly with flour or raw materials, avoid high temperature storage ($\leq 40^{\circ}\text{C}$).
- Industrial Use: Dosage 5-30% concentration (dilute with water for wastewater neutralization/desulfurization); mix with acid in a 1:1 molar ratio for gas generation.
- Optimal Conditions: Avoid high temperature ($> 50^{\circ}\text{C}$) for long-term storage; operate in well-ventilated areas for industrial use; no special equipment requirements (plastic/glass/metal all available).

6. Packaging & Storage

- Packaging: 1kg/5kg food-grade HDPE sealed bags, 25kg woven bags with food-grade plastic inner lining (marked with food grade logo).
- Storage: Cool, dry, well-ventilated warehouse ($\leq 40^{\circ}\text{C}$); sealed packaging, prevent high temperature and moisture, separate from acids and food raw materials.
- Shelf Life: 24 months (food grade)/36 months (industrial grade) (unopened, under specified storage conditions).
- Transportation: Non-hazardous goods; food grade is transported in food contact packaging vehicles, avoid mixing with toxic and harmful substances.

7. Safety & Protection

- Low toxicity, mild irritation: No special protective measures for food processing; wear nitrile rubber gloves and safety glasses for industrial large-scale operation.
- Avoid dust inhalation and direct contact with eyes; rinse with plenty of water in case of contact; no special first aid measures for accidental ingestion (food grade is edible in small amounts).
- No fire risk; avoid storage near high temperature equipment (prevent decomposition).

8. Quality Assurance

- Manufactured under ISO 9001 and ISO 22000 food safety management system, in line with GB 1887-2014 food grade sodium bicarbonate standard.
- Each batch is equipped with a food grade COA, with complete testing indicators and traceable data.
- Provide technical support for food formula optimization, industrial application dosage and process design.