

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Sodium Carbonate (Anhydrous)
- English Name: Sodium Carbonate; Soda Ash; Anhydrous Soda
- CAS Number:497-19-8
- Formula:Na₂CO₃
- Molecular Weight:105.99 g/mol
- Product Characteristics: White anhydrous crystalline powder, odorless, slightly hygroscopic. High-purity inorganic alkaline salt, non-flammable, highly soluble in water (exothermic during dissolution), weakly corrosive to mild metals. Chemically stable, reacts with acids to produce CO₂. Suitable for chemical synthesis, glass production, water treatment and detergent manufacturing.

2. Technical Specifications

Item	Specification
Appearance	White crystalline powder/light powder
Purity (Na ₂ CO ₃ Content)	≥ 99.2%
Moisture Content	≤ 0.5%
Insoluble Matter in Water	≤ 0.02%
Chloride (as Cl ⁻)	≤ 0.05%
Sulfate (as SO ₄ ²⁻)	≤ 0.03%
Heavy Metals (Pb)	≤ 0.5 ppm
Iron (Fe)	≤ 0.001%
pH Value (10% aqueous solution, 25°C)	11.5-12.5
Solubility (25°C)	21.5 g/100 mL water
Melting Point	851°C
Boiling Point	Decomposes at high temperature
Density (20°C)	2.532 g/cm ³

3. Product Advantages

1. High Purity & Low Impurity: Strict control of chloride, sulfate and heavy metals, stable product performance.
2. Anhydrous Type: Low moisture content, no caking, easy to store and use, high effective component content.
3. Strong Alkalinity: Mild alkaline, suitable for neutralization of weak acids, pH adjustment without strong corrosion.
4. Good Reactivity: Rapid reaction with acids, high conversion rate, suitable for large-scale industrial synthesis.

4. Application Fields



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- Glass Industry: Main raw material for flat glass, container glass and optical glass production (accounts for the largest consumption).
- Chemical Synthesis: Precursor for sodium silicate, sodium bicarbonate, and sodium phosphate production.
- Water Treatment: pH adjustment of industrial wastewater, removal of calcium/magnesium ions (water softening).
- Detergent Industry: Production of synthetic detergents, soap, and dishwashing liquid (alkaline builder).
- Metallurgical Industry: Ore flotation, metal smelting and refining auxiliary agent.
- Laboratory Research: Analytical reagent, alkaline titrant, and buffer solution preparation.

5. Usage Methods

- Dosage: 5-40% concentration (dilute with water for water treatment/pH adjustment).
- Application: Add slowly to water and stir to dissolve (slight exotherm); avoid direct mixing with concentrated acids to prevent splashing.
- Optimal Conditions: Operate in well-ventilated areas; use plastic or stainless steel equipment (avoid mild steel for long-term contact).

6. Packaging & Storage

- Packaging: 1kg/5kg HDPE bags, 25kg woven bags with plastic inner lining, 50kg paper drums (UN-approved for industrial grade).
- Storage: Cool, dry, well-ventilated warehouse ($\leq 30^{\circ}\text{C}$); sealed packaging, prevent moisture absorption and deliquescence.
- Shelf Life: 24 months (unopened, under specified storage conditions).
- Transportation: Non-hazardous goods; transport by ordinary vehicles, avoid rain, moisture and package damage.

7. Safety & Protection

- Slightly alkaline, mild irritation to skin/eyes: Wear nitrile rubber gloves and safety glasses during operation.
- Avoid dust inhalation and direct contact with mucous membranes; rinse with plenty of water in case of eye/skin contact.
- No open flame required for operation; no special fire prevention measures.

8. Quality Assurance

- Manufactured under ISO 9001 quality management system, in line with GB/T 210-2021 industrial soda ash standard.
- Each batch is equipped with a detailed COA, and all test indicators are traceable.
- Provide technical support for product application, dosage optimization and equipment selection.