

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: 氢氧化钠 - English Name: Sodium Hydroxide - CAS Number: 1310-73-2 - Formula: NaOH - Molecular Weight: 40.00 g/mol - Product Characteristics: High-purity inorganic strong base, white flakes, odorless, highly hygroscopic, highly soluble in water (violently exothermic); excellent alkalizing, saponifying and corrosive properties; industrial-grade product meets GB/T 209-2018 and ASTM E1358 standards, high purity ($\geq 99.0\%$), low impurity content; stable chemical properties under normal storage conditions, widely used in chemical synthesis, textile processing, pharmaceutical and water treatment fields; strong corrosivity requires strict safety protection during use.

2. Technical Specifications (Complies with GB/T 209-2018 & ASTM E1358)

Item	Specification
Appearance	White flakes, no visible mechanical
Purity (NaOH Content)	$\geq 99.0\%$
Sodium Carbonate (Na_2CO_3)	$\leq 0.5\%$
Sodium Chloride (NaCl) Content	$\leq 0.03\%$
Iron (Fe) Content	$\leq 0.001\%$
Heavy Metals (Pb) Content	$\leq 0.0005\%$
Moisture Content	$\leq 0.5\%$
Melting Point ($^{\circ}\text{C}$)	318.4
Boiling Point ($^{\circ}\text{C}$, 101.3 kPa)	1390
Density (20 $^{\circ}\text{C}$, g/cm 3)	2.13

3. Product Advantages

1. Strong Alkaline & Saponifying Properties: High NaOH content ($\geq 99.0\%$), excellent alkalizing and catalytic effects; strong saponifying property, can react with fats, oils and esters to form soap and glycerin; suitable for various chemical synthesis and textile processing scenarios requiring strong alkaline conditions. 2. High Purity & Stable Quality: Low impurity content ($\text{Na}_2\text{CO}_3 \leq 0.5\%$, $\text{NaCl} \leq 0.03\%$, $\text{Fe} \leq 0.001\%$); no visible mechanical impurities, ensuring stable performance in high-precision applications (e.g., pharmaceutical intermediate, food-grade pH adjustment); stable quality batch-to-batch, meets strict industrial standards. 3. Wide Application Range: Effective at 0 -300 $^{\circ}\text{C}$ and pH 7-14; suitable for chemical synthesis (dyes, detergents, pharmaceuticals), textile mercerizing, metal cleaning, water treatment and food processing; compatible with most inorganic reagents (excluding strong acids, metals and halogens) without mutual interference.

4. Application Fields

- Chemical Industry: Core raw material for chemical synthesis; production of dyes, detergents (sodium lauryl sulfate), pharmaceuticals (antibiotics, analgesics), paper pulp, rayon and petrochemical products; catalyst for saponification, neutralization and condensation reactions. - Textile Industry: Mercerizing agent for cotton fabrics (improves fabric luster, strength and dye absorption); scouring agent to remove oil, wax and impurities from textile fibers; dyeing auxiliary to adjust dye bath pH and improve dyeing uniformity. - Metal Processing Industry: Metal cleaning and degreasing agent (removes oil, rust and oxide layers from steel, aluminum, copper surfaces)



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

to improve surface finish and adhesion of coatings; electrolyte for electroplating and electrolysis processes; etching agent for metal parts.

5. Usage Methods

- Dosage (Recommended): - Chemical Synthesis: 5-15% (based on reaction system weight), adjust according to reaction requirements; - Metal Cleaning/Degreasing: 5-10% aqueous solution, soak metal parts for 15-40 minutes at 40-60°C; - Water Treatment (pH Adjustment): 50-200 mg/L (solid), adjust according to wastewater pH (target pH 6-9); - Textile Mercerizing: 20-30% aqueous solution, soak fabrics for 10-20 minutes at room temperature. - Usage: 1. Dissolution: Strictly follow "alkali into water" principle (slowly add NaOH flakes to deionized water while stirring continuously, cool with cold water if necessary to prevent overheating and splashing); 2. Chemical Synthesis: Add diluted NaOH solution to the reaction system slowly, control reaction temperature ($\leq 80^{\circ}\text{C}$) to avoid violent reaction; 3. Metal Cleaning: Immerse metal parts in diluted alkali solution, stir occasionally, rinse with water thoroughly after cleaning; 4. Water Treatment: Add solid NaOH to wastewater system through dosing device continuously, monitor pH in real time. - Optimal Conditions: Use at temperature 0-100°C and pH 7-14; higher temperature accelerates reaction rate (e.g., degreasing, synthesis); avoid using in strong acidic environment (pH <2.0) to prevent neutralization and loss of efficacy.

6. Packaging & Storage

- Packaging Specifications: Industrial-grade: 25 kg/bag (inner food-grade PE bag + outer woven bag), 50 kg/steel drum (with plastic lining), 1000 kg/big bag (moisture-proof); food-grade: 25 kg/bag (double PE lining + outer woven bag); custom packaging available upon request. - Storage Conditions: Store in a cool, dry, well-ventilated dedicated warehouse (temperature 5-30°C, relative humidity $\leq 65\%$); keep container tightly closed, store upright on alkali-resistant shelves; avoid direct sunlight, heat sources (heaters, stoves) and moisture; store separately from strong acids, metals, halogens and food-grade materials (separation distance ≥ 10 meters); stack bags/drums stably (no more than 3 layers for bags, no more than 2 layers for drums) to prevent tipping and leakage; install emergency eyewash stations, safety showers and alkali-neutralizing equipment.

7. Safety & Protection

- The product is a highly corrosive strong base, causes severe skin burns, eye damage and respiratory tract irritation; very toxic to aquatic organisms; oral ingestion may be fatal. - Operators must wear full personal protective equipment: dust respirator (P100/N95), chemical safety goggles, full-face shield, alkali-resistant nitrile gloves (thickness ≥ 1.5 mm) and alkali-resistant protective clothing/boots. - Operate in a well-ventilated workshop with local exhaust ventilation; avoid generating dust during handling and dissolution; no smoking, eating or drinking in the workplace; prepare emergency eyewash stations and safety showers nearby (within 10 meters) and alkali-neutralizing equipment (dilute acetic acid, boric acid). - In case of skin contact: Rinse with plenty of cold running water for at least 15 minutes immediately, seek emergency medical help. - In case of eye contact: Rinse with plenty of cold running water for at least 20 minutes immediately, seek emergency medical help.

8. Quality Assurance

- Manufactured in accordance with ISO 9001 quality management system standards; strictly controls raw materials (sodium chloride, water, electricity), production processes (electrolysis, evaporation, concentration, flaking, packaging) and finished product testing; complies with national standards (GB/T 209-2018) and international standards (ASTM E1358). - Each batch of product is strictly tested with a Certificate of Analysis (COA), covering purity, appearance, Na_2CO_3 content, NaCl content, iron content, heavy metals, moisture and density; ensures product quality is stable and meets customer requirements.