AQUABOND
Chemistry for Tomorrow

Technical Data Sheet

Sodium Bicarbonate ($NaHCO_3$)

High-Purity, Multi-Application Grade

1. Product Identification

- Product Name: Sodium Bicarbonate
- Synonyms: Baking Soda, Sodium Hydrogen Carbonate
- Chemical Formula: $NaHCO_3$
- Molecular Weight: 84.01 g/mol
- CAS Number: 144-55-8
- EC Number: 205-633-8
- UN Number: Not classified as hazardous
- HS Code: 2836.50 (Sodium hydrogen carbonate)
- ECCN: EAR99 (Non-controlled, general-purpose chemical)

2. Product Description

Sodium Bicarbonate is a white, crystalline, mildly alkaline inorganic salt widely used across food, pharmaceutical, environmental, and industrial applications. Its ability to neutralize acids, buffer pH, and release CO_2 upon decomposition makes it a highly versatile functional ingredient.

This grade is designed for broad-spectrum use, offering consistent performance in both consumer and industrial environments.

3. Typical Specifications

Parameter	Typical Value
Purity ($NaHCO_3$)	≥ 99.0%
pH (1% solution)	8.2 – 8.4
Moisture	≤ 0.25%
Loss on Drying	≤ 0.20%
Bulk Density	0.90 – 1.10 g/cm³
Particle Size	Fine powder or granular (customizable)
Solubility	96 g/L at 20°C (water)
Appearance	White crystalline powder
Odor	Odorless

Values may vary slightly depending on grade and particle size.

Sodium Bicarbonate ($NaHCO_3$)

4. Functional Properties

- Buffering Agent: Maintains stable pH in food, pharma, and water systems.
- Acid Neutralizer: Reacts with acids to form CO_2, water, and salts.
- Leavening Agent: Releases CO_2 during heating or acid reaction.
- Mild Abrasive: Effective for cleaning without scratching.
- Deodorizing Action: Adsorbs and neutralizes odors.

5. Applications

Food & Beverage

- Leavening agent in baked goods
- pH regulator
- Effervescent beverages and tablets
- Food additive (E500(ii))

Pharmaceutical & Medical

- Antacid formulations
- Hemodialysis buffer
- Urinary alkalinizer
- Tablet excipient

Household & Consumer

- Cleaning and scrubbing agent
- Laundry booster
- Odor neutralizer
- Personal care formulations

Industrial & Environmental

- Flue gas desulfurization (dry sorbent injection)
- Water treatment pH control
- Fire suppression (dry chemical extinguishers)
- Chemical manufacturing and neutralization

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6. Packaging Options

22.68/25 kg bags (multi-wall paper or polyethylene)
Custom packaging available upon request
All packaging is moisture-protected and suitable for long-term storage.

7. Storage & Handling

- Store in a cool, dry, well-ventilated area
- Keep container tightly sealed
- Protect from moisture and humidity (hygroscopic)
- Avoid contact with strong acids
- Use standard industrial hygiene practices
- Shelf life is typically 24–36 months under proper storage conditions.

8. Safety Information

- Classified as non-hazardous under normal use
- Low toxicity; avoid excessive ingestion
- May cause mild eye irritation if contacted directly
- Refer to SDS for full safety and regulatory details

9. Regulatory Compliance

- FDA: GRAS (21 CFR 184.1736)
- EU: E500(ii) food additive
- Codex Alimentarius: Compliant
- REACH: Registered
- Kosher & Halal: Available upon request
- ECCN: EAR99 (U.S. Export Administration Regulations)
- HS Code: 2836.50 (Globally recognized classification)

10. Additional Documentation

- SDS (Safety Data Sheet)
- Certificate of Analysis (COA)
- Food-grade, pharma-grade, and industrial-grade variants available