



Sodium Bicarbonate – Technical Data Sheet (TDS)

1. Product Identification

Parameter	Description
Product Name	Sodium Bicarbonate
Chemical Name	Sodium Hydrogen Carbonate
Synonyms	Baking Soda, Bicarbonate of Soda
CAS Number	144-55-8
EC Number	205-633-8
HS Code	2836.30
Molecular Formula	NaHCO ₃
Molecular Weight	84.01 g/mol
Chemical Family	Inorganic Sodium Salts
Available Grades	Food Grade, Feed Grade, Industrial Grade
Supplier	Basekim

2. Technical Specifications

The following values illustrate a typical high-purity food-grade specification. They are reference values, not guaranteed specifications for every Basekim shipment.

Parameter	Typical Specification
Appearance	White crystalline powder
Purity (NaHCO ₃)	≥ 99.3%
Sodium Carbonate (Na ₂ CO ₃)	≤ 0.5%
Chloride (Cl ⁻)	≤ 250 mg/kg
Sulfate (SO ₄ ²⁻)	≤ 300 mg/kg
Water-Insoluble Matter	≤ 500 mg/kg
Iron (Fe)	≤ 10 mg/kg
Lead (Pb)	≤ 0.1 mg/kg
Arsenic (As)	≤ 0.1 mg/kg
Mercury (Hg)	≤ 0.1 mg/kg
Moisture	≤ 0.05%
pH (1% Solution)	8.0–8.6



True Density	Approximately 2.2 g/cm ³
Solubility in Water (20°C)	Approximately 9.5–9.6 g/100 mL
Odor	Odorless
Thermal Behavior	Decomposes upon heating
Flammability	Non-combustible

These limits follow a published commercial food-grade specification. Industrial and feed-grade specifications may differ.

3. Physical and Chemical Properties

Sodium bicarbonate appears as a fine, white crystalline powder with mild alkaline properties. It dissolves in water and reacts with acids to produce carbon dioxide.

The chemical remains relatively stable under appropriate dry storage conditions. Extended exposure to moisture and elevated temperatures can affect product quality.

Thermal Decomposition Reaction:



This reaction converts bicarbonate into sodium carbonate while releasing carbon dioxide and water vapor.

4. Main Applications

Food Industry

- Bakery products and baking powder
- Biscuits, cakes, and pastries
- Acidity regulation
- Food-processing formulations
- Carbon dioxide generation in leavening systems

Chemical Industry

- Acid neutralization
- pH regulation
- Chemical formulation
- Production of selected sodium-based compounds



Water Treatment

- Alkalinity adjustment
- pH stabilization
- Industrial process water treatment
- Wastewater treatment

Detergent Industry

- Cleaning powder formulations
- Odor control
- Mild abrasive cleaning
- Household and industrial cleaning products

Animal Feed Industry

- Ruminant feed formulations
- Dietary buffering
- Selected feed applications

Environmental Applications

- Dry sorbent injection
- Flue gas treatment
- Acid gas neutralization
- Industrial emission-control systems

5. Packaging and Supply

Packaging Type	Typical Capacity
PP Woven Bags With PE Liner	25 kg
Industrial Bags	50 kg
Jumbo Bags	500–1,000 kg
Customized Packaging	Subject to availability

Packaging must protect the material against moisture, contamination, and physical damage during transport.

6. Storage Conditions

Store the material in a clean, dry, and well-ventilated warehouse.



- Protect bags from moisture and excessive heat.
- Keep containers properly sealed.
- Avoid direct exposure to incompatible acids.
- Store on clean pallets.
- Prevent product contamination.
- Follow appropriate warehouse hygiene standards.

Shelf Life: Confirm against the manufacturer's original packaging specification. No universal shelf life applies to every commercial grade and packaging system.

7. Handling and Safety

Sodium bicarbonate generally presents low hazards during normal industrial use.

However, workers should prevent excessive dust generation and follow standard occupational hygiene procedures.

Recommended protective equipment includes:

- Safety glasses
- Protective gloves
- Suitable work clothing
- Particulate respiratory protection when dust controls are insufficient

Consult the product-specific Safety Data Sheet (SDS) for complete handling, first-aid, and emergency information.

8. Transportation Information

Parameter	Information
UN Number	Not assigned
ADR/RID	Not regulated as dangerous goods
IMDG	Not regulated as dangerous goods
IATA	Not regulated as dangerous goods
Transport Hazard Class	Not applicable
Packing Group	Not applicable
Marine Pollutant	No

Protect packaging against moisture and damage during transportation.



9. Quality Control

Each production batch should undergo appropriate testing according to its designated grade and customer requirements.

Quality inspections may include:

- Chemical purity testing
- Moisture determination
- Chloride and sulfate analysis
- Heavy metal analysis
- pH measurement
- Particle size distribution
- Visual appearance inspection

Customers should request a Certificate of Analysis (COA) for batch-specific results.

10. Technical Documentation

Depending on the product grade and manufacturer, buyers may request:

- Technical Data Sheet (TDS)
- Safety Data Sheet (SDS/MSDS)
- Certificate of Analysis (COA)
- Certificate of Origin
- Food-grade compliance documentation, where applicable
- Additional regulatory documentation, where available

11. Supplier Information

Company: Basekim

Website: <https://basekim.com>

Product: Sodium Bicarbonate

Available Grades: Food Grade, Feed Grade, and Industrial Grade, subject to confirmation

Supply: Bulk orders and export packaging options subject to quotation



12. Disclaimer

This Technical Data Sheet contains general information and illustrative specifications for sodium bicarbonate. Product characteristics may vary according to manufacturer, grade, and production batch.

Customers must confirm the applicable technical specifications, purity requirements, packaging, and regulatory compliance before placing an order.

This document does not constitute a batch-specific Certificate of Analysis or an officially approved manufacturer specification.