



Material Safety Data Sheet (MSDS) – Sodium Bicarbonate

Section 1: Identification of the Substance and Supplier

Parameter	Information
Product Name	Sodium Bicarbonate
Chemical Name	Sodium Hydrogen Carbonate
Synonyms	Baking Soda, Bicarbonate of Soda
Chemical Formula	NaHCO ₃
CAS Number	144-55-8
EC Number	205-633-8
Molecular Weight	84.01 g/mol
Supplier	Basekim
Website	https://basekim.com
Recommended Uses	Food processing, water treatment, detergents, chemical manufacturing, feed production, industrial applications
Emergency Contact	Refer to the supplier's verified SDS and local emergency services

Section 2: Hazards Identification

GHS Classification: Not classified as hazardous under the UN GHS criteria for sodium bicarbonate as a substance.

GHS Label Elements:

- Hazard Pictograms: None required
- Signal Word: None required
- Hazard Statements: None required
- GHS Precautionary Statements: None required by classification

Potential Health Effects:

- Eye Contact: Dust may cause mild irritation, redness, or discomfort.
- Skin Contact: Prolonged exposure may cause dryness or minor mechanical irritation.
- Inhalation: Airborne powder may irritate the respiratory tract and cause coughing.
- Ingestion: Small incidental exposure generally presents low acute toxicity; excessive ingestion may cause gastrointestinal disturbances or systemic effects.



Environmental Hazards:

Normal industrial handling presents a low environmental hazard. However, large releases may alter the pH or sodium content of receiving waters.

Section 3: Composition and Information on Ingredients

Component	CAS Number	Concentration
Sodium Bicarbonate	144-55-8	Typically $\geq 99.0\%$
Other Constituents	Grade-dependent	Balance

Actual composition depends on the selected commercial grade and manufacturer.

Chemical Formula: NaHCO_3

Molecular Weight: 84.01 g/mol

Chemical Family: Inorganic sodium salts

Section 4: First Aid Measures

Inhalation

Move the affected person to fresh air. Keep the person comfortable and allow normal breathing. Seek medical attention if coughing, irritation, or breathing difficulties persist.

Skin Contact

Wash the affected skin with water and mild soap. Remove contaminated clothing if necessary. Seek medical advice if irritation develops or continues.

Eye Contact

Rinse the eyes carefully with clean water for several minutes. Remove contact lenses if present and easy to remove. Continue rinsing and seek medical attention if discomfort persists.

Ingestion

Rinse the mouth with water. Give a small amount of water to drink if the person is fully conscious and able to swallow. Do not induce vomiting. Seek medical advice after substantial ingestion or if symptoms develop.



Most Important Symptoms

- Temporary eye irritation
- Respiratory discomfort following dust inhalation
- Gastrointestinal discomfort following excessive ingestion

Medical Advice: Healthcare professionals should provide treatment according to the patient's symptoms and exposure circumstances.

Section 5: Firefighting Measures

Flammability

Sodium bicarbonate is non-combustible and does not normally present a fire hazard.

Suitable Extinguishing Media

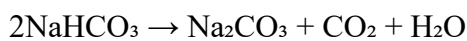
Use extinguishing media suitable for the surrounding fire, including:

- Water spray
- Dry chemical powder
- Carbon dioxide
- Foam

Specific Fire Hazards

Heating causes sodium bicarbonate to decompose and release carbon dioxide and water vapor while forming sodium carbonate.

The decomposition reaction follows:



In a fire, packaging and surrounding materials may create additional hazards.

Firefighter Protection

Firefighters should use appropriate protective equipment and self-contained breathing apparatus when surrounding fire conditions require respiratory protection.



Section 6: Accidental Release Measures

Personal Precautions

Avoid generating or inhaling airborne dust.

Wear appropriate protective equipment, including safety glasses and gloves.

Provide adequate ventilation during cleanup operations.

Environmental Precautions

Prevent large quantities from entering waterways, drainage systems, or sensitive environmental areas.

Cleaning Methods

1. Restrict unnecessary access to the affected area.
2. Collect spilled powder using suitable mechanical equipment or vacuum systems with appropriate dust filtration.
3. Avoid dry sweeping methods that generate excessive airborne dust.
4. Transfer recovered material into suitable labeled containers.
5. Clean remaining residue with water when appropriate.
6. Dispose of contaminated material according to applicable regulations.

Do not return contaminated material to food, feed, or pharmaceutical production.

Section 7: Handling and Storage

Safe Handling

- Avoid creating airborne dust.
- Use adequate workplace ventilation.
- Prevent contact with eyes.
- Maintain proper industrial hygiene.
- Wash hands after handling.
- Use clean handling equipment.
- Keep containers closed when not in use.

Storage Conditions

Store sodium bicarbonate in a cool, dry, well-ventilated warehouse.



Protect the product from moisture, excessive heat, and incompatible chemicals.

Use tightly closed packaging and maintain appropriate warehouse conditions to minimize caking.

Incompatible Materials

Avoid contact with:

- Strong acids
- Reactive alkali-metal alloys
- Certain reactive metals
- Incompatible ammonium compounds

Chemical reactions with incompatible materials may release heat or gases.

Section 8: Exposure Controls and Personal Protection

Occupational Exposure Limits

No substance-specific occupational exposure limit is established universally for sodium bicarbonate.

Applicable national or local limits for airborne dust or particulates may apply.

Engineering Controls

Use local exhaust ventilation in areas where workers handle or transfer large quantities of powder.

Install suitable dust-control systems for bulk loading and mechanical processing.

Personal Protective Equipment

Eye Protection: Safety glasses or protective goggles where dust exposure may occur.

Hand Protection: Suitable protective gloves for routine industrial handling.

Respiratory Protection: Use appropriately selected particulate respiratory protection when ventilation cannot adequately control airborne dust.

Skin Protection: Wear suitable industrial work clothing.



Hygiene Measures

Avoid eating, drinking, or smoking in dusty handling areas.

Wash hands after use and before breaks.

Maintain clean working conditions.

Section 9: Physical and Chemical Properties

Property	Typical Value
Physical State	Solid
Appearance	Fine white crystalline powder
Odor	Odorless
Molecular Formula	NaHCO_3
Molecular Weight	84.01 g/mol
pH (1% Aqueous Solution)	Approximately 8.2–8.4
True Density	Approximately 2.1–2.2 g/cm ³
Water Solubility (20°C)	Approximately 9.3–9.6 g/100 mL
Melting Point	Not applicable; decomposes
Boiling Point	Not applicable
Flash Point	Not applicable
Flammability	Non-combustible
Explosive Properties	Not classified as explosive
Oxidizing Properties	Not classified as oxidizing
Vapor Pressure	Not applicable to the solid under normal conditions
Thermal Stability	Gradual decomposition with heating

Values may vary slightly according to analytical conditions and product grade.

Section 10: Stability and Reactivity

Reactivity

Sodium bicarbonate reacts with acids and releases carbon dioxide.



Chemical Stability

The substance remains stable under normal dry storage and handling conditions.

Hazardous Reactions

Contact with incompatible chemicals may generate heat or gases.

Reactions with acids release carbon dioxide and can generate pressure in closed containers.

Conditions to Avoid

- Excessive heating
- Moisture exposure during extended storage
- Contact with incompatible substances
- Uncontrolled reactions inside sealed vessels

Hazardous Decomposition Products

Heating produces sodium carbonate, carbon dioxide, and water vapor.

Polymerization

Hazardous polymerization does not occur.

Section 11: Toxicological Information

Acute Toxicity

Sodium bicarbonate generally demonstrates low acute toxicity under ordinary handling conditions.

However, excessive ingestion can cause significant health effects, including disturbances of electrolyte and acid-base balance.

Skin Irritation

The substance is not generally classified as a skin irritant, although prolonged powder contact may cause mechanical discomfort.



Eye Irritation

Airborne particles may cause mild mechanical eye irritation.

Respiratory Effects

Dust inhalation may cause temporary respiratory irritation, including coughing.

Skin Sensitization

Available information does not indicate that sodium bicarbonate requires classification as a skin sensitizer.

Carcinogenicity

The substance is not classified as a carcinogen under standard GHS hazard criteria.

Reproductive Toxicity

Available information does not indicate a requirement for reproductive toxicity classification.

Repeated Exposure

Long-term exposure to excessive airborne dust should be minimized through good industrial hygiene.

Section 12: Ecological Information

Ecotoxicity

Sodium bicarbonate generally presents low environmental toxicity under normal use conditions.

Large releases may change the alkalinity and ionic composition of water.

Persistence and Degradability

The substance is inorganic and therefore does not undergo biodegradation in the same manner as organic compounds.

In water, it participates in the carbonate-bicarbonate equilibrium.



Bioaccumulative Potential

Significant bioaccumulation is not expected.

Mobility in Soil

The substance dissolves in water, allowing sodium and bicarbonate ions to move through aqueous environments.

Additional Environmental Information

Avoid uncontrolled discharge of industrial quantities into waterways.

Follow local environmental regulations for wastewater and solid-material disposal.

Section 13: Disposal Considerations

Product Disposal

Dispose of unused or contaminated sodium bicarbonate according to local, regional, and national regulations.

Do not release large quantities directly into drains or natural waterways without assessing their environmental effects.

Packaging Disposal

Empty bags completely before recycling or disposal.

Follow applicable waste-management requirements for packaging materials.

Waste Classification

Waste classification depends on contamination, quantity, and local regulations.

Uncontaminated sodium bicarbonate does not normally require hazardous-waste classification solely because of its chemical identity.



Section 14: Transport Information

Transport Parameter	Classification
UN Number	Not assigned
UN Proper Shipping Name	Not regulated as dangerous goods
ADR/RID	Not regulated
IMDG	Not regulated
IATA/ICAO	Not regulated
Transport Hazard Class	Not applicable
Packing Group	Not applicable
Marine Pollutant	No
Special Precautions	Protect packaging from moisture and physical damage

These classifications apply to sodium bicarbonate as a substance under normal commercial transportation conditions. Check the actual formulation and destination requirements before shipping.

Section 15: Regulatory Information

GHS Classification

Sodium bicarbonate does not meet the standard UN GHS criteria for classification as a hazardous substance.

European Union

- EC Number: 205-633-8
- CAS Number: 144-55-8
- CLP Classification: Not classified as hazardous for the pure substance

Food Applications

Suitable food-grade material may serve as food additive E500(ii), subject to applicable specifications and national regulations.



Pharmaceutical Applications

Pharmaceutical-grade material must comply with the relevant pharmacopeial and regulatory requirements.

Other Regulatory Requirements

Manufacturers and importers must evaluate the regulatory requirements of each destination country before commercial use or distribution.

Section 16: Other Information

Document Title: Sodium Bicarbonate Material Safety Data Sheet

Chemical Name: Sodium Hydrogen Carbonate

CAS Number: 144-55-8

Supplier Reference: Basekim

Document Date: October 19, 2026

Document Status: General technical reference draft

Safety Summary

Sodium bicarbonate is a non-combustible, mildly alkaline inorganic compound that generally presents low risk during appropriate industrial handling.

Workers should minimize dust exposure, protect their eyes, maintain adequate ventilation, and store the product away from incompatible substances.

Disclaimer

This document provides general chemical safety information based on publicly available references. It does not replace a manufacturer-issued, product-specific Safety Data Sheet.



Actual impurity profiles, exposure controls, regulatory classifications, and supplier emergency contact details must be verified for the supplied grade and destination market before official issue.

Industrial users should review the manufacturer's current SDS, technical documentation, and applicable occupational safety regulations before using the product.