Safety Data Sheet (MSDS)

- Sodium Bicarbonate (Food Grade)

(Compliant with GB/T 16483, GB/T 17519; Adapts to GHS Rev.9, IMDG, IATA Standards)**Revision Date: 28 FEB 2026**

SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Identifiers

- Product Name: Sodium Bicarbonate (Food Grade)
- Product Number: SB-20260228
- Brand: SIGALD
- CAS-No.: 144-55-8
- EINECS/EC-No.: 205-633-8
- MDL Number: MFCD00003552
- Synonyms: Baking Soda; Sodium Hydrogen Carbonate; Food Grade Acidity Regulator1.2 Details of the supplier of the safety data sheet
- Company: NEWAY SINOPHC TECH. LIMITED
- Address: RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE
- Telephone: +86-021-50350029
- Fax: +86-021-503500291.3 Emergency telephone
- Emergency Phone #: +86-021-50350029 (CHEMTREC)1.4 Relevant Identified Uses and Uses Advised Against
- Identified Uses: Food additive (leavening agent, acidity regulator, antacid, bulking agent) for bakery, confectionery, beverage, dairy, meat, seasoning and processed food industries; also used in food cleaning and pH adjustment.
- Uses Advised Against: Avoid excessive inhalation of dust for asthmatic individuals; no restricted uses for food-grade application.

SECTION 2: Hazards Identification

2.1 GHS ClassificationNot a hazardous substance or mixture (GHS 0 category); mild eye/respiratory irritation may occur from bulk dust inhalation (no formal GHS classification); mild skin irritation in sensitive individuals with prolonged contact.2.2 GHS Label Elements

- Hazard Pictograms: None
- Signal Word: None
- Hazard Statements: None
- Precautionary Statements:
  - P261: Avoid breathing dust
  - P304+P340: If inhaled: Move person to fresh air and keep comfortable for breathing
  - P337+P313: If eye irritation persists: Get medical advice/attention
  - P264: Wash skin thoroughly after handling2.3 Physical and Chemical HazardsNo physical/chemical hazards; non-combustible, no explosion risk, no oxidative properties; slightly

hygroscopic, stable under normal food processing and storage conditions; soluble in water, insoluble in ethanol and organic solvents; decomposes to sodium carbonate, CO_2 and water at high temperature (>50℃).2.4 Health Hazards

- No acute/chronic systemic toxicity at normal food use doses; mild transient eye/respiratory irritation in sensitive individuals from bulk dust contact; mild skin dryness/irritation with prolonged direct contact (easily relieved by washing).
- Acts as a mild antacid in the human body, neutralizes excess gastric acid; excessive oral ingestion may cause mild gastrointestinal discomfort (bloating, belching) due to CO_2 production, with no long-term adverse effects.
- Natural inorganic salt, widely used in food and daily chemical industry with confirmed food safety.2.5 Environmental Hazards
- Low environmental risk; biodegradable (dissociates into sodium and bicarbonate ions, absorbed by nature); no toxic effects on aquatic/terrestrial organisms at normal release levels.
- No acute aquatic toxicity (Zebrafish LC_{50} ,96h >20000 mg/L); no bioaccumulation potential (inorganic salt, rapid ion dissociation); no soil/water pollution at normal use.2.6 Other HazardsSlight hygroscopicity may cause minor caking under high humidity; dust may form slippery surfaces when wet; no other hazards for food-grade application.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Pure inorganic salt
- Chemical Name: Sodium Bicarbonate
- Formula: $NaHCO_3$
- Molecular Weight: 84.01
- CAS-No.: 144-55-8

Component	Classification	Concentration (w/w)	CAS No.	Hazard Statements
Sodium Bicarbonate	Non-hazardous	≥99.0%	144-55-8	None
Water	Non-hazardous	≤0.2%	7732-18-5	None
Inorganic Salts (trace)	Non-hazardous	≤0.8%	-	None

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- **Inhalation**: Move victim to fresh air, keep airway open. Rinse mouth with water; no special treatment if no discomfort. Consult a doctor if coughing/irritation persists for more than 2 hours.
- **Skin Contact**: Brush off residual powder, rinse affected area with running water for 3-5 minutes. Apply mild moisturizer if dryness/irritation occurs; no further treatment needed.
- **Eye Contact**: Rinse eyes cautiously with plenty of running water for 5-10 minutes (hold eyelids open). Remove contact lenses if present and easy to do. Consult a doctor only if mild irritation persists.
- **Ingestion**: Rinse mouth with water, drink plenty of plain water (do not induce vomiting). Relieve bloating by slow walking if needed; consult a doctor if severe gastrointestinal discomfort (nausea, abdominal pain) occurs.4.2 Most Important Symptoms and Effects

- Acute: Mild transient eye/respiratory irritation from bulk dust; mild skin dryness with prolonged contact; bloating/belching from excessive oral ingestion.
- Delayed: No known delayed toxic effects based on comprehensive toxicological testing.4.3 Indication of Immediate Medical AttentionNo immediate medical attention required for normal food-grade handling/ingestion; consult a doctor only if irritation symptoms persist or excessive intake causes severe discomfort.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- **Suitable**: All common fire-extinguishing media (water spray, CO_2, dry chemical powder, foam).
- **Unsuitable**: None (no significant fire hazards associated with the product).5.2 Special Hazards Arising from the Substance or Mixture
- Non-combustible under normal conditions; decomposes at high temperature (>100℃) to produce non-toxic sodium carbonate, carbon dioxide and water; no hazardous gases or combustion products produced during fire or normal heating.
- Dust may form explosive mixtures in air at **extremely high concentrations** (no food processing/storage risk).5.3 Advice for Firefighters
- Wear standard fire-fighting gear (self-contained breathing apparatus if dust concentration is high); fight fire from upwind.
- Cool exposed containers with water spray if near fire (prevent thermal expansion); avoid dust inhalation during firefighting.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions

- Wear N95 dust mask and disposable food-grade nitrile gloves for large spills; ensure good ventilation in the spill area (prevent dust accumulation).
- No open flames/sparks required (no fire risk); no special PPE for small spills.6.2 Environmental Precautions
- No special environmental precautions; the product is non-toxic and dissolves in water naturally. Sweep up spilled powder to avoid entry into drains (no clogging risk).6.3 Methods and Materials for Containment and Cleaning Up
- **Small Spill**: Sweep into a sealed HDPE container for reuse; wipe the area with a dry cloth then a damp cloth (prevents slippery surfaces); dispose of waste as general non-hazardous waste.
- **Large Spill**: Collect with a dust-free vacuum cleaner or shovel into sealed food-grade drums for reuse; no need for neutralization (mild alkaline, non-corrosive).
- **Note**: Avoid wetting the powder during initial cleanup (prevents slippery surfaces).6.4 Reference to Other SectionsSee Section 13 for waste disposal; Section 8 for PPE details.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

- Operate in a well-ventilated area with dust collection equipment (prevent dust inhalation/accumulation).
- Use dry food-grade equipment/tools (HDPE, stainless steel) for weighing/mixing; avoid generating excessive dust.
- Avoid prolonged direct skin contact; wash hands thoroughly after handling.
- Hygiene Measures: Do not eat/drink/smoke in the processing area; keep processing equipment clean.7.2 Conditions for Safe Storage
- **Storage Type**: Store in a cool, dry, well-ventilated food-grade warehouse; temperature ≤25℃, relative humidity ≤60% (prevents hygroscopic caking and decomposition).
- **Containers**: Sealed food-grade HDPE plastic drums or paper bags with inner PE liner; label clearly with product name, batch number and "Keep Dry" mark.
- **Incompatibilities**: Strong acids (reacts to produce CO_2 gas), strong oxidizing agents, acidic food additives; store separately from these materials.
- **Separation**: Store separately from odorous substances (no odor absorption); keep away from high-temperature equipment (>50℃).
- **Shelf Life**: **24 months** (unopened, in specified storage conditions); 6 months after opening (seal tightly after each use to avoid moisture and contamination).7.3 Specific End UseOnly for food production as leavening agent and acidity regulator; compliant with GB 2760/FDA/EC dosage limits (GMP for all food categories).

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

- No official occupational exposure limits (OEL) for food-grade sodium bicarbonate; follow general industrial dust limit (10 mg/m³ TWA) for bulk handling (national occupational health standards).
- No PEL/REL established by US OSHA/NIOSH (non-hazardous substance).8.2 Exposure Controls
- **Engineering Controls**: Local exhaust ventilation (air exchange rate ≥6 times/hour) for bulk handling/loading/unloading; closed mixing systems to minimize dust release.
- **Personal Protective Equipment (PPE)**:
  - **Respiratory Protection**: N95 dust mask (for bulk dust handling; no respirator required for normal use).
  - **Eye/Face Protection**: Food-grade safety glasses (recommended for large-scale dust handling to avoid eye contact).
  - **Skin Protection**: Disposable food-grade nitrile gloves (optional for normal handling; mandatory for large-quantity processing/prolonged contact).
  - **Other**: Dust-proof food-grade overalls and non-slip shoes (for industrial processing).8.3 Environmental Exposure Controls
- No special environmental exposure controls; use closed transfer systems to prevent dust release; no wastewater/air pollution associated with handling.

SECTION 9: Physical and Chemical Properties

Property	Details (25℃, 1 atm)
Physical State	White crystalline powder
Color	Pure white
Odor	Odorless
Taste	Slightly alkaline, mild salty
Melting Point	Decomposes at 50℃ (no melting)
Boiling Point	Not applicable (solid, decomposes)
Flammability	Non-combustible (NFPA Flammability: 0)
Flash Point	Not applicable
Autoignition Temperature	>300℃
Vapor Pressure	<0.0001 kPa (25℃)
Vapor Density	Not applicable (solid)
Relative Density (Water=1)	2.16
pH Value (5% aqueous solution)	8.0-9.5
Water Solubility	96 g/L (25℃), soluble; solubility increases with temperature
Solubility	Insoluble in ethanol, methanol, ether, benzene
Hygroscopy	Slightly hygroscopic
Bulk Density	0.9-1.2 g/cm³
Corrosivity	Non-corrosive to metal/plastic/glass (food-grade materials); mild alkaline to soft metals (aluminum) with prolonged contact
Decomposition	Decomposes at >50℃: $2NaHCO_3 \rightarrow Na_2CO_3 + CO_2\uparrow + H_2O$

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: **Highly stable** under normal food processing and storage conditions (≤25℃, dry); stable in neutral/alkaline food systems, reacts with acids to produce CO_2 gas (core leavening effect).10.2 Possibility of Hazardous Reactions:

- Reacts with **strong acids** (HCl, H_2SO_4) to produce large amounts of CO_2 gas (may cause splashing if mixed in large quantities); no hazardous reactions with food-grade weak acids (citric acid, acetic acid) at normal dosage.
- Decomposes at high temperature (>50℃) to form non-toxic sodium carbonate, CO_2 and water (normal in baking/heating processes).10.3 Conditions to Avoid: High humidity (caking), high temperature (>50℃, decomposition), contact with strong acids/strong oxidizing agents.10.4 Incompatible Materials: Concentrated strong acids (HCl, H_2SO_4), strong oxidizing agents (hydrogen peroxide, potassium permanganate), acidic industrial chemicals; no incompatible materials for common food-grade ingredients.10.5 Hazardous Decomposition Products: Non-toxic sodium carbonate, carbon dioxide and water (decomposes >50℃); no toxic gases produced at food processing temperatures.10.6 Hazardous Polymerization: Will not occur under any conditions (inorganic salt, no polymerization).

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

- **Acute Toxicity**: Oral (Rat, LD_{50}) >4220 mg/kg; Dermal (Rabbit, LD_{50}) >20000 mg/kg; Inhalation (Rat, LC_{50}) >5000 mg/m³/4h – **Practically non-toxic**.
- **Skin Corrosion/Irritation**: Mild irritation (Rabbit, 24h prolonged contact); no corrosion, irritation reversible by washing (GHS 0 category for normal use).
- **Serious Eye Damage/Eye Irritation**: Mild transient eye irritation from bulk dust (GHS 0 category); no irreversible eye damage.
- **Respiratory Irritation**: Mild transient respiratory irritation from bulk dust (GHS 0 category).
- **Germ Cell Mutagenicity**: Negative (Ames test, chromosome aberration test; no genotoxicity).
- **Carcinogenicity**: IARC Group 3 (not classifiable as to carcinogenicity to humans; no evidence of carcinogenicity).
- **Reproductive Toxicity**: No reproductive/developmental toxicity (rat feeding test at 10000 mg/kg/day; safe for maternal/fetal health).
- **Specific Target Organ Toxicity**: No single/chronic target organ toxicity at normal dietary levels; mild antacid effect in the stomach, no adverse metabolic effects.11.2 Additional InformationSodium bicarbonate is an inorganic salt approved by FAO/WHO, FDA, EFSA and CFSA as a safe food additive; no adverse health effects at normal food application doses; suitable for all population groups including children, the elderly and pregnant women.

SECTION 12: Ecological Information

12.1 Toxicity:

- Aquatic: Zebrafish LC_{50} (96h) >20000 mg/L, Daphnia EC_{50} (48h) >20000 mg/L – **Non-toxic**; no adverse effects on aquatic organisms at any normal use level.
- Terrestrial: No toxic effects on soil microorganisms/plants; bicarbonate ions act as a carbon source for soil microbes, slightly adjust soil pH (no negative environmental impact).12.2 Persistence and Degradability: **Non-persistent**; dissociates rapidly into sodium and bicarbonate ions in water/soil, absorbed by natural ecosystems or degraded by microbes; no environmental persistence.12.3 Bioaccumulative Potential: Log Kow = -3.0 (estimated) – **No bioaccumulation potential** (highly water-soluble inorganic salt, no adsorption to biological tissues/organisms).12.4 Mobility in Soil: High mobility (soluble in water); no leaching risk to groundwater (ions are naturally filtered/absorbed by soil).12.5 PBT/vPvB Assessment: Not classified as PBT/vPvB (non-persistent, non-toxic, no bioaccumulation); meets all environmental safety criteria.12.6 Other Adverse Effects: No known long-term ecological effects; mild alkaline property may slightly adjust water/soil pH at excessive release (no pollution at normal use).

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- **Uncontaminated Product Waste**: Reuse directly (no quality degradation if dry); expired/contaminated waste can be disposed of as general solid waste (non-hazardous) or

dissolved in water for biological wastewater treatment (mild alkaline, no impact on treatment systems).

- **Packaging Waste**: Rinse containers thoroughly with water (meet food hygiene standards); recycle/dispose of as non-hazardous plastic/paper waste (no residual hazards).13.2 Disposal Compliance: Comply with China General Solid Waste Pollution Control Law, Food Safety Law and local environmental regulations; no hazardous waste disposal procedures required.

SECTION 14: Transport Information

14.1 UN Number: None (non-hazardous substance)14.2 UN Proper Shipping Name: None (not a hazardous good)14.3 Transport Hazard Class(es): None14.4 Packaging Group: None14.5 Environmental Hazards: IMDG Marine Pollutant: **No**; ADR/RID: No14.6 Special Precautions for User

- Transport in sealed food-grade packaging (HDPE drums, paper bags) to prevent dust release, hygroscopic caking and contamination.
- Use covered dry transport vehicles; avoid rain, snow, moisture and high temperature (>50℃) during transport (maintain relative humidity ≤60%).
- Secure containers to prevent tipping/collision; avoid rough handling (prevents packaging damage and dust release).
- Do not mix with strong acids, strong oxidizing agents or acidic industrial chemicals in the same vehicle; transport with other non-hazardous food additives/raw materials is allowed.
- No special transport documentation required (non-hazardous food additive); comply with general food raw material transport regulations.

SECTION 15: Regulatory Information

15.1 National/International Regulations

- **China**: Compliant with GB 2760 (National Food Safety Standard for Food Additives), GB 1886.2-2021 (Food Additive Sodium Bicarbonate); classified as non-hazardous chemical; approved for use in **all food categories** with GMP dosage limits.
- **EU**: Compliant with EC 1333/2008; E500(ii) (food additive code); REACH registered (no SVHC); approved for food use with GMP dosage limits.
- **US**: TSCA listed (CAS 144-55-8); FDA GRAS (21 CFR Part 184.1736); approved for use in all food and beverage categories with no dosage limit (GMP).
- **International**: Compliant with Codex Alimentarius Commission (CAC) standards; FCC/USP certified (food grade); approved by FAO/WHO JECFA; recognized as a safe food additive worldwide.15.2 Other Regulations: Comply with local food safety, occupational health and environmental regulations; food production use must meet GMP/HACCP standards.

SECTION 16: Other Information

- **Further Information**: This MSDS is for **Food Grade Sodium Bicarbonate (CAS 144-55-8)**, compliant with GB/T 16483, GB/T 17519 and GHS Rev.9. It applies to safe handling, storage, transport and disposal of the product for food production use. The supplier is not liable for damage caused

by improper industrial use (non-food) or non-compliance with storage/handling precautions (e.g., mixing with strong acids).

- **Revision Date**: 28 FEB 2026
- **Version**: V1.0