Sodium Bicarbonate ($NaHCO_3$)

Food Grade (EU E500(ii) · USP · FCC) · Animal Feed Rumen Buffer Grade · Industrial DSI Grade

Effective Date: 23 Nov 2026
CAS: 144-55-8 · **EC:** 205-633-8
Supplier Tel: +44 744 913 9023

ASSAY ($NaHCO_3$)	GHS CLASSIFICATION	SIGNAL WORD	FOOD ADDITIVE CODE	TRANSPORT STATUS
99.0% – 100.5%	Not Classified	None (Non-Haz)	E500(ii) / GAS	Non-DG (All Modes)

NON-HAZARDOUS (GHS) **Not Classified as Dangerous Under UN GHS, EU CLP (EC) 1272/2008, or OSHA HazCom**

No GHS hazard pictograms or signal words required. Non-flammable inorganic buffer salt with very low acute toxicity. Airborne fine powder may cause slight, reversible mechanical eye/throat dust irritation. Reacts with acids releasing CO_2 gas.



NFPA 704
Health: 1 (Dust Irrit.)
Flamm.: 0 (Non-Flamm.)
Reactivity: 0

SECTION 1 Identification of the Substance & of the Supplier

1.1 & 1.2 SUBSTANCE IDENTIFIER & RELEVANT USES

Product Name: Sodium Bicarbonate (Food E500(ii)/USP/FCC, Feed & Technical Grades)

Synonyms: Sodium Hydrogen Carbonate, Baking Soda, Bicarbonate of Soda, E500(ii)

Identified Uses: Food leavening & beverages, pharmaceuticals/dialysis, dairy & poultry rumen buffering, flue gas DSI scrubbing, textiles, tanning & BC dry chemical fire extinguishers.

Uses Advised Against: Mixing with strong mineral acids in closed unvented containers.

1.3 & 1.4 SUPPLIER DETAILS & EMERGENCY CONTACT

Supplier Role: Global Commodity Supplier / Distributor (Commercial Desk)

Supplier Name: Beroil Energy Group

Office Address: 4-6 Middlesex St., E1 7JH, London, United Kingdom

Email / Phone: info@beroilenergy.com · +44 744 913 9023

Emergency Line: +44 744 913 9023 (Commercial) · Dial local emergency services (999 / 112 / 911) or Port Fire/Poison Center for major warehouse emergencies.

SECTION 2 Hazards Identification

2.1 GHS / CLP Classification: Substance is **not classified as hazardous** under UN GHS, EU CLP, or OSHA 29 CFR 1910.1200.

2.3 Other Hazards: Thermal decomposition starts gradually above 50 °C, releasing carbon dioxide (CO_2) and water vapor. Massive ingestions of strong salt loads may cause gastrointestinal discomfort or alkalosis. Not PBT/vPvB.

2.2 Label Elements & Hygiene Guidance: Signal Word: **None** · Pictogram: **None**.

· Minimize dust clouds when pouring bags into hoppers or dough mixers.

· Wear safety glasses/dust goggles and particulate mask where dust levels are elevated.

· Store sealed below 30 °C in odor-free dry food/feed-safe warehouses.

SECTION 3 Composition / Information on Ingredients

3.1 SUBSTANCE CHEMICAL NAME	CAS NO.	EC NO.	CONC. (% W/W)	HAZARD CLASSIFICATION (CLP/GHS)
Sodium Bicarbonate ($NaHCO_3$)	144-55-8	205-633-8	**99.0% – 100.5%**	Not classified (Non-hazardous inorganic buffer salt; Food E500(ii))
Moisture / Trace Chloride / Insolubles	—	—	≤ 0.25% LoD · ≤ 0.04% Cl	Pb ≤ 2 ppm · As ≤ 1–2 ppm · Fe ≤ 20 ppm (Food Grade FCC/USP)

SECTION 4 First-Aid Measures

INHALATION

Move affected person to fresh air. Gently blow nose and rinse mouth/throat with water. Seek medical advice if dust coughing persists.

SKIN CONTACT

Brush off dry crystals and wash exposed area with mild soap and water. No corrosive effect expected on intact skin.

EYE CONTACT

Flush eyes immediately with lukewarm gentle running water for 10–15 minutes while holding eyelids apart. Remove contact lenses if present; consult doctor if mild mechanical irritation persists.

INGESTION

Rinse mouth thoroughly with water and drink 1–2 glasses of water if conscious. Practically non-toxic at low amounts; consult physician if extreme gram-per-kg ingestion causes vomiting or abdominal bloating (CO_2 generation).

4.2 & 4.3 Symptoms & Medical Treatment: Transient mechanical eye/throat irritation only. Symptomatic supportive care.

SECTION 5 Fire-Fighting Measures

5.1 Flammability & Extinguishing Media: Strictly non-combustible; sodium bicarbonate itself acts as a fire-suppressant powder (smothers fires by releasing CO_2). Use any appropriate media for surrounding warehouse/packaging fires.

5.2 Special Fire Hazards: Above 50–100 °C, releases benign carbon dioxide (CO_2) and steam, converting to sodium carbonate. Avoid confined CO_2 buildup in poorly ventilated smoldering zones.

5.3 Firefighter PPE: Wear standard bunker turnout gear and SCBA in enclosed warehouse fires.

SECTION 6 Accidental Release Measures

6.1 Personal Precautions: Minimize dust dispersion during cleanup; wear safety glasses, basic gloves, and an N95/FFP2 dust mask if sweeping fine powder.

6.2 Environmental Precautions: Sweep dry material cleanly before washing floors to prevent unneeded pH rise or high sodium load in surface streams.

6.3 Clean-Up Methods: Vacuum or gently shovel dry material into clean covered drums. Product from clean floor spills may be diverted to non-food industrial/neutralization uses; flush minor traces with water.

SECTION 7 Handling and Storage

7.1 PRECAUTIONS FOR SAFE HANDLING

Ensure local exhaust or good general ventilation at bag-emptying and blending stations. Prevent contamination of Food/Feed lots by foreign odors or chemicals. Wash hands before meals.

7.2 STORAGE CONDITIONS & INCOMPATIBILITIES

Store tightly sealed in cool (< 30 °C), dry, odor-free sanitary storage (12-month shelf life) away from steam lines and high humidity.
Incompatible Materials: Strong acids (vigorous CO_2 foaming & pressure buildup), monoammonium phosphate, and sodium-potassium alloys.

SECTION 8 Exposure Controls / Personal Protection

8.1 OCCUPATIONAL EXPOSURE LIMITS (OELS)

Substance-Specific OEL: No chemical-specific OSHA PEL or ACGIH TLV established.

· Applied Limits (Inert Nuisance Dust): **OSHA PEL:** 15 mg/m³ (total) / 5 mg/m³ (respirable). **ACGIH / UK WEL:** 10 mg/m³ (inhalable) / 3–4 mg/m³ (respirable).

8.2 ENGINEERING CONTROLS & HYGIENE

Provide dust extraction at hopper charging points and food-grade sanitary eyewash stations nearby. Follow standard GMP hygiene rules for Food Grade lots.

EYE / FACE PROTECTION	HAND PROTECTION	RESPIRATORY PROTECTION	SKIN & BODY PROTECTION
Safety glasses with side shields (EN 166) or dust goggles for heavy dumping.	Clean food-grade nitrile or rubber work gloves during extended bag handling.	NIOSH N95 / EN 149 FFP2 dust mask if fine dust exceeds 10 mg/m³.	Clean closed workwear / GMP sanitary apron and safety footwear.

SECTION 9 Physical and Chemical Properties

PROPERTY	VALUE / DESCRIPTION	PROPERTY	VALUE / DESCRIPTION
Appearance & Odor	White crystalline powder / fine crystals; completely odorless	**Molecular Formula / Weight**	$NaHCO_3$ / 84.01 g/mol
pH (1% / 0.1M Aqueous @ 25 °C)	8.0 – 8.6 (typical 8.2 – 8.4 freshly prepared)	**Melting / Decomposition Pt.**	Decomposes > 50 °C (no true melting point)
True Density / Bulk Density	2.20 g/cm³ / ~900–1,100 kg/m³	**Flash Point / Flammability**	Not applicable — Non-combustible solid
Water Solubility (@ 20 °C)	~96 g/L (increases to ~165 g/L @ 60 °C)	**Partition Coeff. / Vapor Press.**	Inorganic (Log Kow N/A) · Negligible vapor pressure

SECTION 10 Stability and Reactivity

10.1–10.3 Stability: Chemically stable below 30 °C under dry storage; mild alkaline amphoteric buffer.

10.4 Conditions to Avoid: Excessive heat (> 50 °C) and atmospheric moisture.

10.5 Incompatible Materials: Strong mineral/organic acids (exothermic vigorous CO_2 effervescence), monoammonium phosphate, lime, and moisture.

10.6 Decomposition Products: Carbon dioxide (CO_2), water vapor, and anhydrous sodium carbonate above 50 °C.

SECTION 11 Toxicological Information

11.1 Acute Toxicity (Very Low Toxicity):

· **Oral LD_{50} (Rat):** ~4,220 mg/kg (> 4,000 – 5,000 mg/kg)

· **Inhalation LC_{50} (Rat, 4.5h dust):** > 4.74 mg/L (no mortality observed)

· **Dermal / Irritation:** Non-irritating to skin; minimal/non-irritating to eyes in rabbit tests; non-sensitizing. Not mutagenic, carcinogenic, or reprotoxic. Approved food ingredient (E500(ii)).

SECTION 12 Ecological Information

12.1 Ecotoxicity (Minimal Aquatic Impact): Fish (*Oncorhynchus mykiss*) 96h **LC_{50} > 7,700 mg/L** (Bluegill 7,100–8,250 mg/L); *Daphnia magna* 48h **EC_{50} = 2,350 – 4,100 mg/L**.

12.2–12.5 Fate & Bioaccumulation: Natural inorganic carbonate buffer; dissociates to harmless Na^+ and HCO_3^- ions found in natural water systems. Zero bioaccumulation; not PBT/vPvB.

SECTION 13 Disposal Considerations

13.1 Waste Treatment: Reuse clean product in industrial flue-gas DSI scrubbing or wastewater pH buffering whenever feasible. Dispose of contaminated lots per local sanitary/chemical waste laws (neutralized aqueous effluent where permitted).

Empty Packaging: Shake empty 25/50 kg PE-lined bags and 1 MT FIBCs clean for authorized recycling.

SECTION 14 Transport Information (IMDG / ADR / RID / IATA-ICAO)

TRANSPORT MODE / REGULATION	UN NO.	PROPER SHIPPING NAME	CLASS / PG	MARINE POLLUTANT & CARGO NOTES
Sea / Road / Rail / Air (All Modes)	—	Not Regulated as Dangerous Goods	Non-DG	Marine Pollutant: No · Ship in clean, dry, odor-free food/feed-compatible containers (< 30 °C preferred)

SECTION 15 Regulatory Information

15.1 International Inventories & Food Status: Listed on EU EINECS/REACH (EC 205-633-8), US TSCA (CAS 144-55-8), Canada DSL, China IECSC, and Australia AIIC. Authorized Food Additive **EU E500(ii)**, USP/FCC, and US FDA GRAS (21 CFR 184.1736).

SECTION 16 Other Information

Hazard Statements: None (Non-hazardous under UN GHS criteria).

Key Abbreviations: DSI: Dry Sorbent Injection · FCC: Food Chemicals Codex · GMP: Good Manufacturing Practice · GRAS: Generally Recognized As Safe · LoD: Loss on Drying · USP: United States Pharmacopeia.

Revision History: Rev. 2.0 (23 Nov 2026) — Full 16-section GHS/REACH supplier SDS edition.

Supplier Notice & Disclaimer (Beroil Energy Group): Beroil Energy Group supplies Food, Feed, and Technical Sodium Bicarbonate strictly as global commodity supplier and distributor (not primary chemical producer). Data reflects authoritative OECD/ECHA and food/pharma regulatory references for CAS 144-55-8. Refer to BEG-TDS-NAHCO3 and shipment COA for batch quality guarantees.