



# SODIUM BICARBONATE

## Safety Data Sheet

### 1. Product Identification

**Synonyms:** Sodium Hydrogen Carbonate, Baking Soda  
**CAS No:** 144-55-8  
**Chemical Formula:** NaHCO<sub>3</sub>  
**Recommended Use:** Food ingredient, pharmaceutical, water treatment  
**Supplier:** Terra Systems, Inc.  
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### 2. Hazards Identification

#### Emergency Overview

**Caution:** None  
**Health Rating:** 0 - None  
**Flammability Rating:** 0 - None  
**Reactivity Rating:** 0 - None  
**Contact Rating:** 0 - None  
**Protective Equipment:** Goggles; Proper Gloves  
**Storage Color Code:** Green (General Storage)

#### Potential Health Effects

**Inhalation:** Not expected to be a health hazard. If heated, may produce vapors or mists that irritate the mucous membranes and cause irritation, dizziness, and nausea. Remove to fresh air. Possible irritant.

**Ingestion:** Not expected to be a health hazard via ingestion. Material is practically non-toxic. Small amounts (1-2 tablespoonfuls) swallowed during normal handling operations are not likely to cause injury as long as the stomach is not overly full; swallowing larger amounts may cause injury.

**Skin Contact:** Not a skin irritant.

**Eye Contact:** Not an eye irritant.

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**Chronic Exposure:**

Based on published studies on its effects in animals and humans, sodium bicarbonate is not teratogenic or genotoxic. Only known subchronic effect is that of a marked systemic alkalosis. Not classified as carcinogenic by NTP, IARC, OSHA, ACGIH or NIOSH.

**Aggravation of Pre-existing Conditions:**

No information found.

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### 3. Composition/Information on Ingredients

Ingredient	Synonyms	CAS #	Percent	Hazardous
Sodium Bicarbonate	Baking soda	144-5-8	100	No

White crystalline powder; no odor.

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### 4. First Aid Measures

**Inhalation:** Not expected to require first aid measures. Remove to fresh air. Get medical attention for any breathing difficulty.

**Ingestion:** If large amounts were swallowed, do not induce vomiting. Give water to drink if person is conscious and get medical advice.

**Skin Contact:** Not expected to require first aid measures. Wash exposed area with soap and water. Get medical advice if irritation develops.

**Eye Contact:** Check for and remove contacts. Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

**Note to Physician:** Large doses may produce systemic alkalosis and expansion in extracellular fluid volume with edema.

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### 5. Fire Fighting Measures

**Fire:** Not combustible. Not considered to be a fire hazard. Isolate from heat and open flame.

**Explosion:** Not considered to be an explosion hazard.

**Fire Extinguishing Media:** Use extinguishing media suitable against surrounding fire or the cause of the fire.

**Special Information:** Carbon Dioxide may be generated making necessary the use of a self-contained breathing apparatus (SCBA) and full protective equipment (Bunker Gear). Carbon dioxide is an asphyxiant at levels over 5% w/w. Sodium oxide, another thermal decomposition product existing at temperatures above

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1564°F is a respiratory, eye, and skin irritant. Avoid inhalation, eye and skin contact with sodium oxide dusts

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## 6. Accidental Release Measures

Scoop up into dry, clean containers. Wash away small uncontaminated amounts of residue with water.

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## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material are not hazardous when empty since they do vapors or harmful substances; observe all warnings and precautions listed for the product. Do not store above 49 C (120 F). Keep container tightly closed and upright when not in use to prevent leakage.

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## 8. Exposure Controls/Personal Protection

<b>Airborne Exposure Limits:</b>	None established.
<b>Ventilation System:</b>	Not expected to require any special ventilation.
<b>Personal Respirators (NIOSH Approved):</b>	Dust mask required if total dust level exceeds 10 mg/m <sup>3</sup> .
<b>Skin Protection:</b>	Wear protective gloves and clean body-covering clothing.
<b>Eye Protection:</b>	Use chemical safety glasses when handling bulk material or when dusts can be generated. Provide readily accessible eye wash stations and safety showers.

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## 9. Physical and Chemical Properties

<b>Appearance:</b>	White crystalline.
<b>Molecular Weight:</b>	84.02
<b>Odor:</b>	None.
<b>Solubility:</b>	86 g/L at 20 C.
<b>Bulk Density:</b>	9.94 g/cm <sup>3</sup> or 62 pounds/ft <sup>3</sup>
<b>pH:</b>	8.2 (1% aqueous solution)
<b>% Volatiles by volume @ 21C (70F):</b>	Negligible.
<b>Boiling Point:</b>	Not applicable.
<b>Melting Point:</b>	Not applicable.
<b>Flash Point (F):</b>	Not applicable.
<b>Autoignition Temperature:</b>	Not flammable, will not support combustion.
<b>Decomposition Temperature:</b>	50 C.
<b>Vapor Density (Air=1):</b>	No information found.

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**Vapor Pressure (mm Hg):** Not applicable.  
**Evaporation Rate (BuAc=1):** No information found.  
**Partition Coefficient (octanol/water):** No information found.

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## 10. Stability and Reactivity

**Stability:** Stable under ordinary conditions of use and storage.  
**Reactivity:** Not reactive under ordinary conditions. Reacts with acids to yield carbon dioxide.

### Hazardous Decomposition

**Products:** Carbon dioxide may form when heated to decomposition at >100 C. If heated to >850 C, yields sodium oxide which should inhalation, eye and skin contact should be avoided.

**Hazardous Polymerization:** Will not occur.

**Incompatibilities:** Strong acids.

**Conditions to Avoid:** Incompatibles. Isolate from heat and open flame.

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## 11. Toxicological Information

**Toxic Dose:** 4,220 mg/kg (oral rat).

**Inhalation:** High concentrations of dust may cause transient irritation to upper respiratory tract.

**Ingestion:** Ingestion of small amounts is unlikely to cause any adverse effects. Ingestion of (excessive amounts) may cause vomiting, nausea, convulsions

**Skin:** Repeated or prolonged contact may cause mild irritation and/or drying (defatting) of skin.

**Eyes:** The material was minimally irritating to unwashed eyes and practically non-irritating to washed eyes (rabbits).

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## 12. Ecological Information

**Environmental Fate:** No information found.

**Environmental Toxicity:** 4,100 mg/L EC50 Daphnids. 7,100 mg/L LC50 Bluegills. 7,700 mg/L: LCt0 Rainbow trout.

**Persistence:** This product is expected to persist in the environment. It is inorganic and not subject to biodegradation.

**Soil Mobility:** This compound will move with groundwater until it reacts with acid.

**Bioaccumulation Potential:** This product is not expected to bioaccumulate

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### 13. Disposal Considerations

Bury in a secured landfill in accordance with all local, state and federal environmental regulations. Empty containers may be incinerated or discarded as general trash.

### 14. Transport Information

Not regulated.

### 15. Regulatory Information

CLEAN AIR ACT SECTION 611: Material neither contains nor is it manufactured with ozone depleting substances (ODS).

FEDERAL WATER POLLUTION CONTROL ACT (40 CFR 401.15): Material contains no intentionally added or detectable (contaminant) levels of EPA priority toxic pollutants.

FOOD AND DRUG ADMINISTRATION: Generally Recognized As Safe (GRAS) direct food additive (21 CFR 184.1736).

US DEPARTMENT OF AGRICULTURE: List of Proprietary Substances - Permitted Use Codes 3A, J1, A1, G1, and L1.

CERCLA REPORTABLE QUANTITY: None

OSHA: Not hazardous under 29 CFR 1910.1200

RCRA: Not a hazardous material or a hazardous waste by listing or characteristic.

SARA TITLE III:

Section 302, Extremely Hazardous Substances: None

Section 311/312, Hazardous Categories: Non-hazardous

Section 313, Toxic Chemicals: None

Sodium Bicarbonate is reported in the EPA TSCA Inventory List.

Contains no VOCs.

NSF STANDARD 60: Corrosion and Scale Control in Potable Water. Max use 200 mg/l.

### 16. Other Information

**NFPA Ratings:**

Health: **0** Flammability: **0** Reactivity: **0**

**Date Prepared:**

July 18, 2014

**Revision Information:**

SDS Section(s) changed since last revision of document include: None.

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