SAFETY DATA SHEET
TersOx™ Buffer - Sodium Bicarbonate

Revision date: 2019-06-17
Version 1.0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Trade Name: TersOx™ Buffer - Sodium Bicarbonate

Chemical Name: Sodium Bicarbonate

CAS No: 144-55-8

Formula: $NaHCO_3$

Synonyms: Baking soda, Sodium Hydrogen Carbonate, bicarb (laboratory slang), bicarbonate of soda, nahcolite

Product Form: Substance

Recommended use of the chemical and restrictions on use

Recommended Use: For use in buffering acid buildup in soil, sludge, and groundwater bioremediation

Restrictions on Use: Use as recommended by the label

Details of the supplier and of the safety data sheet

Supplier
Tersus Environmental, LLC
1116 Colonial Club Rd
Wake Forest, NC 27587
Phone: +1-919-453-5577
Email: info@tersusenv.com

Contact Person
David F. Alden
Phone: +1-919-453-5577 x2002
Email: david.alden@tersusenv.com

Emergency telephone number

For leak, fire, spill or accident emergencies, call:

+1-919-453-5577 (Tersus Office Hours, 8:00 AM to 5:00 PM Eastern)
+1-800-424-9300 (Chemtrec 24 Hour Service – Emergency Only)
+1-703-527-3887 (Chemtrec Outside United States 24 Hour Service – Emergency Only)
+1-919-638-7892 Gary M. Birk (Outside office hours)

2. HAZARD IDENTIFICATION

Classification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazard	Not classified.
OSHA defined hazard	Not classified.

GHS Label elements, including precautionary statements

Label elements

Signal word Not classified

Hazard statement Not classified in accordance with international standards for workplace safety.

Hazard Statements H320 Causes eye irritation.

Precautionary statements

Prevention

If medical advice is needed, have product container or label at hand. Keep out of Children. Read label before use.

Response

P264 - Wash exposed skin thoroughly after handling.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337+P313 - If eye irritation persists: Get medical advice/attention.

Storage

Sore away from incompatible materials.

Disposal

Dispose of waste and residues in accordance with local authority requirements.

Other Hazards

None known.

Unknown Acute Toxicity

None known.

Supplemental Information

NFPA Ratings (scale 0-4)

WHMIS NFPA/HMIS Rating System

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Formula $NaHCO_3$

Hazardous components

Chemical Name	CAS Number	Concentration (wt. %)
Sodium Hydrogen Carbonate	144-55-8	>99

Synonyms are provided in Section 1.
Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

General Information	Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Skin Contact	Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
Inhalation	Allow victim to breathe fresh air. Allow the victim to rest.
Ingestion	Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.
Most important Symptoms and Effects, both Acute and Delayed	Causes eye irritation.
Indication of any Immediate Medical Attention and Special Treatment Needed	If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	Do not use a heavy water stream.
Explosion Data	
General Fire Hazards	Wear protective eyewear, gloves, and clothing. Refer to section 8.
Special Protective Equipment and Precautions for Firefighters	
Specific Methods	
Specific Hazards Arising from the Chemical or Mixture	Thermal decomposition can lead to release of irritating gases and vapors.
Special Fire Fighting Procedures	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Refer to protective measures listed in sections 7 and 8.
Environmental Precautions	Avoid discharge into drains, water courses or onto the ground.
Methods for Containment and Clean Up	Do not flush into surface water or sanitary sewer system. Prevent any mixture with an acid into the sewer/drain (gas formations). Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Keep in properly labelled containers. Keep in suitable, closed containers for disposal. Treat recovered material as described in the section "Disposal considerations".

7. HANDLING AND STORAGE

Precautions for Safe Handling	• Keep away from Incompatible products
Hygiene Measures	
Conditions for Safe Storage, including any Incompatibilities	• Keep in a dry place. Store in original container. • Keep container closed. • Keep away from Incompatible products.

8. EXPOSRE CONTROL / PERSONAL PROTECTION

Personal Protective Equipment

Gloves. Safety glasses.

Exposure Control

Appropriate Engineering Controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Eye/face Protection	Wear chemical safety goggles with side shields.
Occupational Exposure limits	No exposure limits noted for ingredient(s).
Biological Limit Values	No biological exposure limits noted for the ingredient(s).

Individual Protection Measures, such as Personal Protective Equipment

The following are recommendations for Personnel Protective Equipment (PPE). The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910. 132 to determine the appropriate PPE for use while performing any task involving potential exposure to this product.

Respiratory Protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Skin	
Hand Protection	Wear suitable chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
General Hygiene	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
Other Work Practices	Wear suitable protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Appearance	White crystalline, powder
Odor	ODORLESS

Odor threshold	Not determined
pH	8.6 (concentration 52g/L)
Melting Point / Freezing Point	Not Measured
Initial Boiling Point and Boiling Range	Not Measured
Flash Point	Not Measured
Evaporation Rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower Flammability or Explosive Limits	
Lower Explosive Limit:	Not Measured
Upper Explosive Limit:	Not Measured
Vapor Pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	Not Measured
Solubility in Water	96 g/L in water (20 °C), slightly soluble in alcohol
Partition Coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition Temperature	Not Measured
Decomposition Temperature	>60 °C
Viscosity (cSt)	1.2 mPa.s
Relative Density/ Density	2.22
Bulk Density	0.5 - 1.2 kg/dm^3 (31-75 lb/ft^3)

10. STABILITY AND REACTIVITY

Reactivity	• The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical Stability	• Stable under recommended storage conditions.
Conditions to Avoid	• Keep at temperature not exceeding: 60 °C (140 °F)
Incompatible Materials	• Strong oxidizers and acids
Hazardous Decomposition Products	• Carbon oxides and sodium oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Not classified

Classification	Hazard Description
Acute toxicity (oral)	LD50- Rat > 4000 mg/kg
Acute toxicity (dermal)	LD50 - Remarks: no data available.
Acute toxicity (inhalation)	LC50-Rat > 4.74 mg/L
Skin corrosion/irritation	Rabbit, mild skin irritation
Serious eye damage/irritation	Rabbit, Mild eye irritation
Respiratory sensitization	Not classified
Skin sensitization	No data available
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not Classified
STOT-repeated exposure	Not Classified
Aspiration hazard	Not classified

12. ECOLOGICAL INFORMATION

Aquatic Ecotoxicity
Fishes, Oncorhynchus mykiss, LC50, 96 h, 7,700 mg/l
Fishes, Oncorhynchus mykiss, NOEC, 96 h, 2,300 mg/l
Fishes, Lepomis macrochirus, LC50, 96 h, 7,100 mg/l
Fishes, Lepomis macrochirus, NOEC, 96 h, 5,200 mg/l
Crustaceans, Daphnia magna, EC50, 48 h, 4,100 mg/l
Crustaceans, Daphnia magna, NOEC, 48 h, 3,100 mg/l

Persistence and Degradability
Abiotic degradation - Water, hydrolyses Result: acid/base equilibrium as a function of pH Degradation products: carbonic acid/bicarbonate/carbonate Biodegradation- Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative Potential
No data available.

Mobility in Soil
No data available.

Other Adverse Effects
No data available.

Remarks
Ecological injuries are not known or expected under normal use.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	Dispose in a safe manner in accordance with local/national regulations.
Local Disposal Regulations	Dispose in accordance with all applicable regulations.
Hazardous Waste Code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from Residues/ unused Products	Contact waste disposal services. If recycling is not practicable, dispose of in compliance with local regulations. Dilute with plenty of water. Neutralize with acid. In accordance with local and national regulations
Contaminated Packaging	To avoid treatments, as far as possible, use dedicated containers. Clean container with water. Dispose of rinse water in accordance with local and national regulations. The empty and clean containers are to be reused in conformity with regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

14. TRANSPORTATION INFORMATION

DOT

Not regulated as dangerous goods.
DOT information on packaging may be different from that listed.
It is recommended that ERG Guide number 111 be used for all non-regulated material.

15. REGULATORY INFORMATION

U.S. Federal Regulations
This product is not known to be a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910. 1200.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)
Not regulated.
US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required
Not regulated.
CERCLA Hazardous Substance List (40 CFR 302)
Not listed.

US State Regulations
US. New Jersey Worker and Community Right-to-Know Act
Not listed.
US. Pennsylvania Worker and Community Right-to-Know Law
Not listed.
US. California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)
This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. OTHER INFORMATION

NFPA (National Fire Protection Association) - Classification

- Health 0
- Flammability 0
- Instability or Reactivity 0

HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification

- Health 0 minimal
- Flammability 0 minimal
- Reactivity 0 minimal

Disclaimer: This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. All recommendations for the use of our products, weather given by us, orally or to be implied from data or lab tests results by us, are based on the current state of our knowledge at the time those recommendations are made. When additional information is obtained, these recommendations may be updated. They may also be influenced by circumstances outside our control. Notwithstanding, such recommendation the user is responsible that the product as supplied by us is suitable to the process or purpose he intends to use it. The user of the product is solely responsible for compliance with all laws and regulations applying to the use of this product. Since we cannot control the application, use or processing of the product, we do not accept responsibility. Therefore, the user should assure that the intended use of the product will not infringe in any party’s intellectual property right.

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End of Safety Data Sheet