SAFETY DATA SHEET
TersOx™ Buffer

Revision date: 2019-06-14
Version 1.0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: TersOx™ Buffer

Synonyms: Sodium bicarbonate, Sodium carbonate

Product Form: Mixture

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
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Wake Forest, NC 27587
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Contact Person
David F. Alden
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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

OSHA Regulatory Status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Serious eye damage/eye irritation	Category 2B
Specific target organ toxicity (single exposure)	Category 2
Oxidizing Solids	Category 1

GHS Label elements, including precautionary statements

Label elements
Hazard Pictograms



Signal word Danger

Hazard Statements Causes skin irritation (H315)
Causes eye irritation (H320)
May be corrosive to metals (H290)

Precautionary statements - Prevention
P234 – Keep only in original container
P264 – Wash thoroughly after handling
P280 – Wear protective gloves

Precautionary statements - Response
P302 + P352 - IF ON SKIN: Wash with soap and plenty of water.
P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 – If skin irritation occurs: Get medical advice/attention.
P337 - P313 – If eye irritation persists: Get medical advice/attention.
P362 + P364 – Take off contaminated clothing and wash it before reuse.
P390 – Absorb spillage to prevent material damage.

Precautionary statements - Storage
P406 – Store in corrosive resistant container

Precautionary Statements - Disposal
P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards
N/A

Unknown acute toxicity
0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Formula Mixture Na_2CO_3 and $NaHCO_3$

Hazardous components

Chemical Name	CAS Number	Concentration (wt. %)
Sodium Carbonate	497-19-8	N/A
Sodium Bicarbonate	144-55-8	N/A
Other inorganic calcium compounds		

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

4. FIRST AID MEASURES

General Information	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Eye Contact	Mild to severe irritant to the eyes. May cause redness, irritation and/or conjunctivitis. In case of contact with eyes, flush eyes with low pressure water for at least 15 minutes holding eyelids open. If irritation persists, seek medical attention.
Skin Contact	Mild to severe irritant of the skin. May cause intense destruction of abraded skin. It is recommended that prolonged direct contact with skin be avoided. In case of contact with skin, wash skin with water for 15 minutes. Remove contaminated clothing and wash.
Inhalation	May cause irritation, sore throat and coughing if inhaled. Avoid inappropriate handling which may result in dust generation. If inhaled, remove from contaminated area to fresh air. Report situation. Seek medical attention if allergic response exhibited.
Ingestion	Ingestion of material may cause corrosion of gastric mucosa with sore throat and pain. May cause distention of the stomach, possible rupture. Renal injury will occur over 1g/kg. If swallowed, drink 2-4 glasses of water. Induce vomiting or perform gastric lavage if large amounts are ingested. Get medical attention.
Most important symptoms and effects, both acute and delayed	Corrosion of gastric mucosa if ingested.
Indication of any immediate medical attention and special treatment needed	Treat symptomatically

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Dry chemical, carbon dioxide, chemical foam or water fog
Unsuitable extinguishing media	Dry chemical. Foam.
Explosion Data	
Sensitivity to Mechanical Impact	Not sensitive.
Sensitivity to Static Discharge	Not sensitive.
Specific Hazards Arising from the chemical or mixture	Contain water runoff. Negligible hazard when exposed to flame.
Special Fire Fighting	Self-contained breathing apparatus recommended for fire fighters if

Procedures	large amount is present.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Provide sufficient ventilation
Environmental Precautions	None
Methods for Containment and Clean Up	Spilled product should be removed immediately to avoid formation of dust. Contain spill, sweep up avoiding airborne dust. Provide sufficient ventilation. Avoid wash down except for small traces.

7. HANDLING AND STORAGE

Precautions for safe handling	• Avoid formation of dust. Provide adequate ventilation of the room when handling this product.
Hygiene measures	• Provide eyewash capability.
Conditions for safe storage, including any incompatibilities	• None

8. EXPOSRE CONTROL / PERSONAL PROTECTION

Control parameters

Exposure guidelines, ingredients with workplace control parameters.

Exposure

CAS No.	Ingredient	Source	Value
497-19-8	Sodium carbonate (Na_2CO_3)	OSHA	No Established Limit
		ACGIH	No Established Limit
144-55-8	Sodium bicarbonate ($NaHCO_3$)	OSHA	PEL 10 mg/m^3 (total)
		ACGIH	TLV: 10 mg/m^3

Exposure Control

Appropriate engineering controls	Provide adequate ventilation. Where reasonably practicable this should be achieved using local exhaust ventilation and good general extraction. If these are not enough to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
Eye/face protection	Safety glasses with side shield or face shield, or chemical goggles.
Respiratory protection	Dust mask or respirator for particle removal (NIOSH)
Skin	Wear long-sleeve shirt, trousers, safety shoes, gloves (rubber or vinyl)
Hygiene measures	Maintain good housekeeping. Avoid dusty conditions. Wash hands and exposed skin after contact. Avoid contact with food or food preparation surfaces. If exposure of food surfaces occurs, wash with germicidal detergent or chlorine bleach. Remove and wash contaminated clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	White crystalline powder
Odor	None

Odor threshold	Not determined
pH	Does Not Apply
Melting point / freezing point	260 °C (550 °F)
Initial boiling point and boiling range	Not Measured
Flash Point	Not Measured
Evaporation rate (Ether = 1)	1
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	2.2-2.5 at 25 °C
Solubility in Water	7% at 0°C
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured

10. STABILITY AND REACTIVITY

Reactivity
- Stable under normal conditions

Possibility of hazardous reactions
- None known

Conditions to avoid
- Exposure to strong acid can cause violent reaction with evolution of heat and carbon dioxide.
- Exposure to hot aluminum can cause explosive reaction with evolution
- Exposure to ammonium and silver nitrate can cause explosive reaction upon heating
- Exposure to aromatic amine and a chloronitro compound can cause a reaction with evolution of heat.
- Exposure to 2,4 dinitrotoluene can increase explosiveness.
- Exposure to flourine can cause violent ignition.
- Exposure to burning lithium releases radioactive sodium.
- Exposure to phosphorus pentoxide can cause a highly exothermic reaction.
- Exposure to hot sodium sulfide can cause an explosive reaction on exposure to water.
- Exposure to sulfuric acid can cause a violent eruption.
- Exposure to 2,4,6 trinitrotoluene can reduce explosion temperature.
- Exposure to zinc can be corrosive.

Incompatible materials
- None known

Hazardous decomposition products
- None known

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Mild
Serious eye damage/irritation	---	Mild
Respiratory sensitization	---	Large amounts will require medical attention.
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. ECOLOGICAL INFORMATION

Aquatic Ecotoxicity
Product degrades in time releasing plant nutrients. Increases pH of media.
Persistence and degradability
Readily biodegradable

Bioaccumulative potential
Information not available.

Mobility in Soil
Information not available.

Other adverse effects
Information not available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of in accordance with current Federal, State, and Local regulations.

14. TRANSPORTATION INFORMATION

DOT

Proper Shipping Name Chemicals not otherwise indexed (NOI) non-hazardous.

UN Number

Mixture not classified as Hazardous according to Regulation (EC) 1272/2008.

15. REGULATORY INFORMATION

Regulatory Overview
All ingredients used are listed on the USEPA TSCA Inventory list.
OSHA: Not hazardous under 29 CFR 1910.1200

16. OTHER INFORMATION

Mixture classified as not dangerous according to Regulation (EC) 1272/2008.

Observe employment restrictions for people.

Product is not listed with IARC, NTP, ACGIH or OSHA as a carcinogen.

Components not precisely identified are proprietary or non-hazardous. All chemical ingredients appear on the EPA TSCA inventory.

The information contained in this Safety Data Sheet, as of the issue date, is believed to be true and correct. However, the accuracy or completeness of this information and any recommendations or suggestions are made without warranty or guarantee. Since the conditions of use are beyond the control of our company, it is the responsibility of the user to determine the conditions of safe use of this product. The information in this sheet does not represent analytical specifications; for this information contact Tersus Environmental.

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End of Safety Data Sheet

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