

SAFETY DATA SHEET

TersOx™ Powder



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Version 1.3
SDS # 14A

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifier

Product Name: TersOx™ Powder

Synonyms: Calcium Peroxide, Calcium Superoxide, and TersOx™ Peroxygen

Product Form: Mixture

1.2 Recommended use of the chemical and restrictions on use

Recommended Use: For use in stimulating biological activity in soils and sludges
Remediation of contaminated groundwater and soils

Restrictions on Use: Use as recommended by the label

1.3 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

1.4 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)
+1-919-638-7892 (Tersus Outside office hours)
+1-800-424-9300 (Chemtrec 24 Hour Service – Emergency Only)

2. HAZARD IDENTIFICATION

2.1 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 1
Specific target organ toxicity (single exposure)	Category 3
Oxidizing Solids	Category 2

2.2 GHS Label elements, including precautionary statements

2.2.1 Label elements

Hazard Pictograms



2.2.2 Signal word **DANGER!**

2.2.3 Hazard Statements Causes serious eye damage (H318)
May cause respiratory irritation (H335)
May intensify fire; oxidizer (H272)

2.2.4 Precautionary Statements (Prevention)

P280 - Wear eye protection/ face protection
P261 - Avoid breathing dust.
P271 - Use only outdoors or in a well-ventilated area
P210 - Keep away from heat
P220 - Keep/Store away from clothing/combustible materials
P221 - Take any precaution to avoid mixing with combustibles P362 + P364 –
Take off contaminated clothing and wash it before reuse.

2.2.5 Precautionary Statements (Response)

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 - Call a POISON CENTER or doctor if you feel unwell
P370 + P378 - In case of fire: Use water spray for extinction

2.2.6 Precautionary Statements (Storage)

P403 - Store in a well-ventilated place

2.2.7 Precautionary Statements (Disposal)

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

2.3 Other Hazards

Reacts with moisture to liberate oxygen

2.4 Unknown Acute Toxicity

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical Formula CaO₂

3.2 Hazardous Components

Chemical Name	CAS Number	Concentration (wt. %)
Calcium peroxide	1305-79-9	75
Calcium hydroxide	1305-62-0	25

Synonyms are provided in Section 1.

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

4. FIRST AID MEASURES**4.1 General Information**

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

4.2 Eye Contact

Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

4.3 Skin Contact

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

4.4 Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

4.5 Ingestion

If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.6 Important symptoms and effects (acute and delayed)

Corneal lesions and irreversible damage if contact with the eyes.

4.7 Indication of any immediate medical attention and special treatment needed

Treat symptomatically

5. FIRE-FIGHTING MEASURES**5.1 Suitable Extinguishing Media**

Flood with water

5.2 Unsuitable Extinguishing Media

Dry chemical. Foam.

5.3 Explosion Data**5.3.1 Sensitivity to Mechanical Impact**

Not sensitive.

5.3.2 Sensitivity to Static Discharge

Not sensitive.

5.4 Specific Hazards Arising from the Chemical or the Mixture

Decomposes under fire conditions to release oxygen that intensifies the fire.

5.5 Special Fire Fighting Procedures

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Move containers from fire area if you can do it without risk.

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal Precautions**

Put on appropriate personal protective equipment (see Section 8).

6.2 Environmental Precautions

Do not allow spills to enter drains or waterways. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3 Methods for Containment and for

Oxidizer. Eliminate all sources of ignition. Evacuate unprotected personnel from equipment recommendations found in Section 8.

Clean Up

Never exceed any occupational exposure limit. Shovel or sweep material into plastic bags or vented containers for disposal. Do not return spilled or contaminated material to inventory. Flush remaining area with water to remove trace residue and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs. Do not touch or walk-through spilled material. Keep away from combustibles (wood, paper, oils, etc.). Do not return any product to container because of the risk of contamination.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid contact by using personal protective equipment.
Use respiratory protective equipment when release of airborne dust is expected. exclude moisture.
Avoid dust formation.

Ensure adequate ventilation

Keep away from heat and sources of ignition.

Use only clean and dry utensils.

Never return unused material to storage receptacle.

Keep away from incompatible products

When using do not eat, drink or smoke.

Wash hands before breaks and at the end of workday.

Handle in accordance with good industrial hygiene and safety practice.

Do not ingest.

Eye wash bottles or eye wash stations in compliance with applicable standards.

7.2 Hygiene Measures**7.3 Conditions for Safe Storage (with any incompatibilities)**

Keep only in the original container.

Store in a receptacle equipped with a vent.

Keep in a well-ventilated place.

Keep in a dry place.

Keep in properly labeled containers.

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Keep away from incompatible products.

Avoid dust formation.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control parameters

Exposure guidelines, ingredients with workplace control parameters.

8.1.1 Exposure

CAS No.	Ingredient	Source	Value
1305-62-0	Calcium hydroxide (Ca(OH) ₂)	OSHA	TWA 15 mg/m ³ (total) 5 mg/m ³ (resp)
		ACGIH	TWA: 5 mg/m ³
		NIOSH	TWA 5 mg/m ³
		Supplier	No Established Limit
1305-79-9	Calcium peroxide (Ca(O ₂))	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

8.1.2 Carcinogen Data

CAS No.	Ingredient	Source	Value
1305-62-0	Calcium hydroxide	OSHA	Select Carcinogen: No

CAS No.	Ingredient	Source	Value
	(Ca(OH) ₂)	NTP	Known: No Suspected: No
		IARC	Group 1: No Group 2a: No Group 2b: No Group 3: No Group 4: No;
1305-79-9	Calcium peroxide (Ca(O ₂))	OSHA	Select Carcinogen: No
		NTP	Known: No Suspected: No
		IARC	Group 1: No Group 2a: No Group 2b: No Group 3: No Group 4: No;

8.2 Exposure Control

8.2.1 Appropriate 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.

8.2.2 Eye/Face Protection

Wear chemical safety goggles and a full-face shield while handling this product.

8.2.3 Respiratory Protection

For many conditions, no respiratory protection may be needed; however, in dusty or unknown atmospheres or when exposures exceed limit values, wear a NIOSH approved respirator.

8.2.4 Skin Protection

Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Chemical-resistant (Recommended materials: PVC, neoprene or rubber).

8.2.5 Hand Protection

Wear suitable gloves. Suitable material:

PVC
Neoprene
Natural Rubber

8.3 Hygiene Measures

When using do not eat, drink or smoke.
Wash hands before breaks and at the end of workday.
Handle in accordance with good industrial hygiene and safety practice.
Do not ingest.
Eye wash bottles or eye wash stations in compliance with applicable standards.

8.4 Other Work Practices

Ensure showers and eyewash stations are available. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Appearance	White-yellow Solid
Odor	None
Odor threshold	Not determined
pH	Approximately 12

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	Insoluble
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Self-accelerating decomposition with oxygen release starting from 275°C
Viscosity (cSt)	Not Measured
Bulk Density	500-650 g/L

10. STABILITY AND REACTIVITY

<u>10.1 Reactivity</u>	Decomposes when moist. Decomposes on heating.
<u>10.2 Chemical Stability</u>	Stable under normal circumstances.
<u>10.3 Possibility of Hazardous Reactions</u>	Contact with combustible material may cause fire. Contact with flammables may cause fire or explosions. Risk of explosion if heated under confinement. Fire or intense heat may cause violent rupture of packages.
<u>10.4 Conditions to Avoid</u>	Exposure to moisture. To avoid thermal decomposition, do not overheat.
<u>10.5 Incompatible Materials</u>	Water, acids, bases, salts of heavy metals, reducing agents, organic materials, and flammable substances.
<u>10.6 Hazardous Products</u>	Oxygen

11. TOXICOLOGICAL INFORMATION

11.1 Acute Toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Calcium peroxide (Ca(O ₂)) (1305-79-9)	No data available	No data available	No data available	No data available	No data available
Calcium hydroxide (Ca(OH) ₂) (1305-62-0)	7,340.00, Rat - Category: NA	No data available	No data available	No data available	No data available

When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	2	Causes skin irritation.
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	3	May cause respiratory irritation.
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. ECOLOGICAL INFORMATION

12.1 Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Calcium peroxide (Ca(O ₂)) - (1305-79-9)	Not Available	Not Available	Not Available
Calcium hydroxide (Ca(OH) ₂) - (1305-62-0)	33.884, Clarias gariepinus	Not Available	Not Available

12.2 Persistence and Degradability

Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative Potential

Does not bioaccumulate.

12.4 Mobility in Soil

Information not available.

12.5 Other Adverse Effects

Information not available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Methods

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). Dispose of in accordance with local regulations.

13.2 US EPA Waste Number

D001

13.3 Contaminated Packaging

Empty remaining contents. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORTATION INFORMATION

14.1 DOT

UN/ID no

UN 3085

Proper Shipping Name OXIDIZING SOLID, CORROSIVE, N.O.S

Hazard class	5.1
Packing Group	II

14.2 TDG

UN/ID no	UN 3085
Proper Shipping Name	OXIDIZING SOLID, CORROSIVE, N.O.S
Hazard class	5.1
Packing Group	II

14.3 ICAO/IATA

Oxidizers are prohibited from aircraft.

14.4 IMDG/IMO

UN/ID no	UN 3085
Proper Shipping Name	OXIDIZING SOLID, CORROSIVE, N.O.S
Hazard class	5.1
Packing Group	II

14.5 ADR/RID

UN/ID no	UN 3085
Proper Shipping Name	OXIDIZING SOLID, n.o.s. (Calcium Peroxide)
Hazard class	5.1
Packing Group	II

Subsidiary risk: Class 8 Corrosive Substances-

14.6 Other Information

This material is shipped in 25 kg bags or 50 kg fiber drums.



15. REGULATORY INFORMATION

15.1 Regulatory Overview

The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

15.2 U.S. Federal Regulations**15.2.1 SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

15.2.2 SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	No
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

15.2.3 Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

15.3 WHMIS Hazard Class

C - Oxidizing materials

E - Corrosive material

16. OTHER INFORMATION

16.1 NFPA (National Fire Protection Association)

- Health 2
- Flammability 0
- Instability or Reactivity 0
- Special Notices OX Oxidizer

16.2 HMIS (Hazardous Materials Identification System (Paint & Coating))

- Health 2 moderate
- Flammability 0 minimal
- Reactivity 1 slight
- PPE Determined by User, dependent on local conditions

16.3 Key or Legend for Abbreviations Used in the SDS

- PEL Permissible exposure limit
- TWA 8-hour, time-weighted average
- ACGIH American Conference of Governmental Industrial Hygienists
- OSHA Occupational Safety and Health Administration
- NTP National Toxicology Program
- IARC International Agency for Research on Cancer
- NIOSH National Institute for Occupational Safety and Health

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End of Safety Data Sheet