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CALCIUM PEROXIDE (CPO) SAFETY DATA SHEET

1. Product Identification

Product Identifiers: Calcium Peroxide or CPO
Synonyms: Calcium Dioxide, Calcium Superoxide
Recommended Use: Treatment of groundwater contaminated with petroleum hydrocarbons and other aerobically degradable compounds and in situ chemical oxidation of soil and groundwater.
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2. Hazards Identification

2.1 Classification of the substance or mixture

Hazardous Products Regulations (WHMIS 2015)

Oxidizing solids, Category 1 H271: May cause fire or explosion; strong oxidizer.
Serious eye damage, Category 1 H318: Causes serious eye damage.
Specific target organ systemic toxicity – single exposure, Category 3 H335: May cause respiratory irritation. (Respiratory system)

2.2 Label elements, including precautionary statements Pictogram



Signal word Danger

Hazard statements

H271 May cause fire or explosion; strong oxidizer.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.



Precautionary Statements

Prevention

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P220 Keep away from clothing and other combustible materials.
- P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P283 Wear fire resistant or flame-retardant clothing.

Response

- P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
- P305 + P310+P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
- P306 + P360 IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
- P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
- P371 + P380 + P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Storage

- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P420 Store separately.

Disposal

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

2.3 Other hazards which do not result in classification

- H401: Toxic to aquatic life.
- Oxidizing
- Contact with combustible material may cause fire.
- Irritating to respiratory system and skin.
- Risk of serious damage to eyes.

3. Composition/Information on Ingredients

Ingredient	Chemical Formula	CAS #	Percent by Weight
Calcium Peroxide	CaO ₂	1305-79-9	Min 75%
Calcium Hydroxide	Ca(OH) ₂	1305-62-0	Max 25.0%



4. First Aid Measures

Inhalation:	Effects. Inhalation of dust may cause shortness of breath, tightness of chest, a sore throat, and cough. May irritate upper respiratory tract, mucous membranes, and risk of nose bleeding. Remove to fresh air. Get medical attention for any breathing difficulty.
Ingestion:	Symptoms include severe irritation, nausea, abdominal pain, vomiting, diarrhea. Rinse mouth with water. Do not induce vomiting. Loosen clothing. If victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.
Skin Contact:	Effects include irritation and itching. Repeated exposure may cause skin dryness or cracking. Wash exposed area with soap and water. Remove and wash contaminated clothing before reuse. Get medical advice if irritation develops.
Eye Contact:	Effects include redness, lachrymation, swelling of tissue. Call a physician or poison control center immediately. Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally.

5. Fire Fighting Measures

Fire:	May be combustible at high temperature.
Explosion:	Non-explosive.
Fire Extinguishing Media:	Water or water spray. No unsuitable extinguishing media.
Special Hazards:	Oxidizing. Oxygen released in thermal decomposition may support combustion. Contact with flammables may cause fire or explosions. Risk of explosion if heated under confinement.
Special Protective Equipment	In the event of fire, wear self-contained breathing apparatus and protective clothing. Use personal protective equipment. Cool containers/tanks with water spray.

6. Accidental Release Measures

Clean-up personnel may require protective clothing. Keep away from incompatible products. Sweep up to prevent slipping hazard. Do not mix waste streams during collection. Avoid dust formation. Should not be released to environment. Flush trace residues to sewer with plenty of water. Containerized waste may be sent to an approved waste disposal facility.

7. Handling and Storage

Keep in tightly closed original container, stored in a cool, dry, ventilated area at temperatures not exceeding 40 °C (104 °F). Avoid dust formation. Protect against physical damage. Keep away from heat and sources of ignition. Avoid dust formation. Use only clean and dry utensil. Never return unused material to storage receptacle. Keep away from incompatible products. Suitable packaging materials include stainless steel, plastic materials, carton + polyethylene.



8. Exposure Controls/Personal Protection

Airborne Exposure Limits:	Time weighted average ceiling 5 mg/m ³ .
Ventilation System:	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume, or mist, use ventilation to keep exposure to below exposure limit.
Personal Respirators (NIOSH Approved):	Respirator with a particle filter (EN 143) with a P2 filter recommended. Effective dust mask. Safety glasses, lab coat, dust respirator, boots, gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product.
Skin Protection:	Wear protective gloves of PVC, neoprene, or natural rubber, and clean body-covering dust impervious protective suit.
Eye Protection:	Use chemical safety goggles and/or a full-face shield e. Provide readily accessible eye wash stations and safety showers.

9. Physical and Chemical Properties

Appearance:	Light yellow or white powder.
Odor:	Odorless.
Bulk Density:	500-650 g/L
Solubility:	Insoluble in cold or hot water.
pH 3% Solution:	Approximately 12.0
Decomposition Temperature:	Self-accelerating decomposition with oxygen release starting at 275 °C.
Viscosity @23 C (73 F):	Not applicable
Partition Coefficient (octanol/water):	Not applicable.

10. Stability and Reactivity

Stability:	Stable under ordinary conditions of use and storage. Potential for exothermic hazard. .
Reactivity:	Decomposes when moist or heated.
Hazardous Decomposition Products:	Oxygen which supports combustion
Hazardous Polymerization:	Will not occur.
Incompatibilities:	Water, acids or bases, salts of heavy metals, reducing agents, organic materials, flammable substances

11. Toxicological Information

Acute oral toxicity (LD50):	>5,000 mg/kg rat
Acute inhalation toxicity	LD50 Min 4,580 mg/kg rat
Acute dermal toxicity	LD50 Min 2,000 mg/kg rabbit
Acute toxicity (other routes)	Dust is irritating to eyes, nose, throat, and lungs



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of administration)	
Skin corrosion/irritation	No skin irritation rabbit
Serious eye damage/irritation	Risk of serious damage to eyes.
Carcinogenicity:	No known carcinogenic chemicals in this product.

12. Ecological Information

Environmental Fate:	No information found.
Environmental Toxicity:	EC50 -48 h. 6.8 mg/L <i>Daphnia magna</i> (water flea) semi-static test. Toxic to aquatic invertebrates.
Degradability:	Not available.
Soil Mobility:	No data available.
Bioaccumulation Potential:	Not available.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use, or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

DOT (US)	UN Number 1457 Class 5.1 Packing group: II
Proper shipping name:	Calcium Peroxide
Marine pollutant:	No
Poison inhalation hazard:	No
Oxidizers are prohibited from aircraft.	

15. Regulatory Information

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

SARA Section	Yes
SARA (313) Chemicals	No
EPA TSCA Inventory	Appears
Canadian WHMIS Classification	C, D2B
Canadian DSL	Appears



EINECS Inventor

Appears

16. Other Information

HMIS Rating

Health: **2** Chronic Health Hazard: * Flammability: Physical Hazard 1

NFPA Rating:

Health: **2** Fire Hazard: **0** Reactivity Hazard: **1** Special hazard OX

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Revision Information:

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

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