CALCIUM PEROXIDE (CPO)
TECHNICAL DATA SHEET

Terra Systems Calcium Peroxide (CPO) is an oxygen-generating compound, which is added to the vadose zone or groundwater for enhanced aerobic bioremediation at sites typically contaminated with petroleum hydrocarbons (BTEX, PAHs, TPH), fuel oxygenates and related compounds (MTBE, TBA). CPO provides the necessary supplemental supply of oxygen for the aerobic microorganisms in the vadose zone and/or aquifer.

Key Communication Points

- Calcium Peroxide (CPO) is an oxygen releasing compound used to promote the aerobic biodegradation in groundwater and soil for in situ bioremediation and for chemical oxidation.
- Proven effective for the remediation of hydrocarbon contaminants like petroleum hydrocarbons (BTEX, PAHs, TPH), fuel oxygenates and related compounds (MTBE, TBA).
- Suitable for sites with low to moderate levels of contamination.
- Slow release formulation provides a slow release of oxygen for up to 12 months
- The formula is CaO_2 with a molecular weight of 72.08. Calcium peroxide contains 75% calcium oxide and 25% calcium hydroxide ($Ca(OH)_2$.
- Contains $\geq$ 16.6% Active Oxygen
- Can increase pH up to 12 due to calcium hydroxide.
- Typically injected directly into the plume as a slurry, into a permeable reactive barrier (PRB) or dispersed into an open pit after excavation and soil removal

How it Works

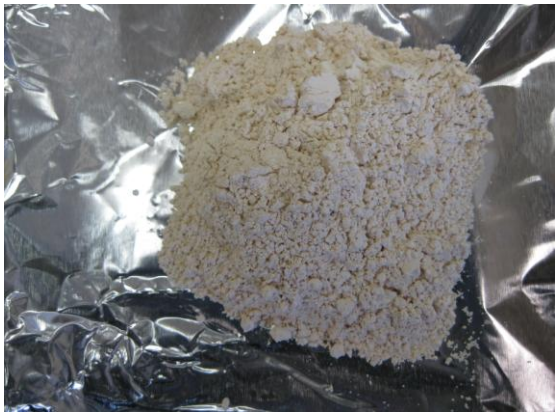
- Aerobic bioremediation requires the addition of oxygen to the vadose zone or aquifer in order for the aerobic microorganisms to breakdown hydrocarbon contaminants like petroleum hydrocarbons (BTEX, PAHs, TPH), fuel oxygenates and related compounds (MTBE, TBA). The CPO is added to water to form an injectable slurry.

$$CaO_2 + 2H_2O \longrightarrow Ca(OH)_2 + H_2O_2$$

(calcium peroxide + water forms calcium hydroxide and hydrogen peroxide)

$$2H_2O_2 \longrightarrow O_2 + 2H_2O$$

(hydrogen peroxide forms oxygen and water)



- Typical application rates are 2 to 6 pound/cubic yard soil
- One pound of CaO_2 yields 0.79 gallons or 3 liters of O_2

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