

MATERIAL SAFETY DATA SHEET

PermeOx® Plus



MSDS Ref. No.: 1305-79-9-2

Date Approved: 04/30/2006

Revision No.: 14

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200; the Canada's Workplace Hazardous Materials Information System (WHMIS) and, the EC Directive, 2001/58/EC.

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: PermeOx® Plus

SYNONYMS: PermeOx-Solid Peroxygen, Calcium Superoxide, Calcium Peroxide

GENERAL USE: Permeox is a solid peroxygen chemical designed for environmental applications. The product provides controlled release of oxygen in-situ which permeates throughout the substrate.

MANUFACTURER

FMC CORPORATION
FMC Peroxygens
1735 Market Street
Philadelphia, PA 19103
(866) 860-4760 (General Information)

EMERGENCY TELEPHONE NUMBERS

(716) 879-0400 (Plant/Other)
(303) 595-9048 (Medical - U.S. - Call Collect)

For leak, fire, spill, or accident emergencies, call:
(800) 424-9300 (CHEMTREC - U.S.A.)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

- Odorless, off-white fine granular solid.
- Oxidizer.
- Contact with combustibles may cause fire.
- Under fire conditions product may decompose releasing oxygen that intensifies fire.
- Deluge container with water at safe distance or in protected area.
- Severely irritating to the eyes.

POTENTIAL HEALTH EFFECTS: Airborne dust may be irritating to eyes, nose, throat and lungs. No significant long term inhalation hazard; irritation usually subsides after exposure ceases.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt.%	EC No.	EC Class
Calcium Peroxide	1305-79-9	>75	215-139-4	Not classified
Calcium Hydroxide	1305-62-0	<25	215-137-3	Not classified

4. FIRST AID MEASURES

EYES: Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See a medical doctor or ophthalmologist immediately.

SKIN: Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

INGESTION: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention.

NOTES TO MEDICAL DOCTOR: Modest irritation is the only expected effect. No serious consequences are expected, except perhaps in the case of direct eye contact. Contaminated external surfaces should be flooded with water, and direct eye contact deserves ophthalmologic evaluation. If ingested, gastrointestinal irritation but not caustic burns are to be expected; dilution with water indicated as may be gastric evacuation via emesis or lavage if large doses or severe irritation is evident. Demulcents should be helpful. No systemic effects are expected though human toxicity data is sparse.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Deluge with plenty of water.

FIRE / EXPLOSION HAZARDS: Under fire conditions, may decompose and release oxygen gas. Mixtures with polysulfide polymers may ignite.

FIRE FIGHTING PROCEDURES: Use flooding quantities of water. Use water spray to keep fire exposed containers cool.

FLAMMABLE LIMITS: Non-combustible

SENSITIVITY TO IMPACT: Oxidizable materials can be ignited by grinding and may become explosive.

SENSITIVITY TO STATIC DISCHARGE: Not available

6. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: Confine spill and place into container; dilute with a large quantity of water for disposal. Do not return product to the original container. Runoff to sewer may create fire or explosion hazard (do not flush powdered material to sewer).

7. HANDLING AND STORAGE

HANDLING: Avoid contact by using personal protective equipment. Use respiratory protective equipment when release of airborne dust is expected. If compounded with organics or combustible materials be sure to exclude moisture.

STORAGE: Keep material dry. Store in a clean cool place. Do not store near or expose to heat sources i.e., steam pipes, radiant heaters, hot hair vents or welding sparks. Avoid contact with reducing agents. Reacts with moisture. Keep container tightly closed when not in use.

COMMENTS: VENTILATION: Provide mechanical general and/or local exhaust ventilation to prevent release of dust into work environment. If ventilation is inadequate or not available, use dust respirator and eye protection.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH	OSHA	Supplier
Calcium Hydroxide	5 mg/m ³ (TWA)	5 mg/m ³ (TWA)	5 mg/m ³ (TWA)

ENGINEERING CONTROLS: Provide mechanical local exhaust ventilation to prevent release of dust into the work area. If release is expected use respiratory protection.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Chemical goggles or face shield.

RESPIRATORY: Use approved dust respirator with full face piece.

PROTECTIVE CLOTHING: Long sleeve shirt, impervious apron or clothing.
Rubber or neoprene footwear.

GLOVES: Rubber or neoprene gloves. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR:	None
APPEARANCE:	Off-white fine granular solid
AUTOIGNITION TEMPERATURE:	Non-combustible
BOILING POINT:	No data available
COEFFICIENT OF OIL / WATER:	Not available
DENSITY / WEIGHT PER VOLUME:	Approximately 27 lb/ft ³
EVAPORATION RATE:	Not applicable (Butyl Acetate = 1)
FLASH POINT:	Not applicable
MELTING POINT:	Decomposes on heating (About 275°C)
ODOR THRESHOLD:	Not available
OXIDIZING PROPERTIES:	Oxidizer
PERCENT VOLATILE:	Not applicable
pH:	(1% solution) @ 25°C: Slurry 10.5 - 11.8
SOLUBILITY IN WATER:	Slightly soluble
SPECIFIC GRAVITY:	Approximately 2.92 (H ₂ O=1)
VAPOR DENSITY:	Not applicable (Air = 1)
VAPOR PRESSURE:	Not applicable

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:	Heat (decomposes at 275°C), moisture, reducing agents. Grinding with organics.
STABILITY:	Stable (decomposition could occur when exposed to heat or moisture)
POLYMERIZATION:	Will not occur
INCOMPATIBLE MATERIALS:	Grinding mixtures with organics (oxidizable materials can be ignited by grinding and may become explosive); heavy metals.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxygen that supports combustion and calcium hydroxide.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Severely irritating to unwashed eyes.
Minimally irritating to washed eyes. (rabbit) [Ref. FMC I88-1053]

SKIN EFFECTS: Non-irritating (rabbit) [Ref. FMC I88-1054]

DERMAL LD₅₀: > 10 g/kg (rat) [FMC Study Number: ICG/T-79.026]

ORAL LD₅₀: > 5 g/kg (rat) [Ref. FMC I88-1052]

INHALATION LC₅₀: > 17 mg/l (1 h) (rat) [Ref. FMC ICG/T-79.026]

TARGET ORGANS: Eyes and respiratory passages

ACUTE EFFECTS FROM OVEREXPOSURE: Dust is irritating to eyes, nose, throat, and lungs.

CHRONIC EFFECTS FROM OVEREXPOSURE: No data available for the product.

CARCINOGENICITY:

NTP:	Not listed
IARC:	Not listed
OSHA:	Not listed
OTHER:	ACGIH: Not listed

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Effect of low concentrations on aquatic life are unknown.
[Ref. NIOSH RTECS No. 79-100]

CHEMICAL FATE INFORMATION: As indicated by chemical properties oxygen is released into the environment.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dissolve in water to allow the release of oxygen and dispose via a treatment system in accordance with governmental agencies regulations. Contact appropriate regulatory agency prior to disposal.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

PROPER SHIPPING NAME:	Calcium Peroxide
PRIMARY HAZARD CLASS / DIVISION:	5.1 (Oxidizer)
UN/NA NUMBER:	UN 1457
PACKING GROUP:	II
LABEL(S):	5.1 (Oxidizer)
PLACARD(S):	5.1 (Oxidizer)
ADDITIONAL INFORMATION:	DOT Marking: Oxidizing solid, n.o.s. (calcium peroxide), UN 1457 Hazardous Substance/RQ: Not applicable 49 STCC Number: 49187717 This material is shipped in 25 lb. plastic pails, and 30 lb. and 100 lb. fiber drums.

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

PROPER SHIPPING NAME:	Calcium Peroxide
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INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) / INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

PROPER SHIPPING NAME:	Calcium Peroxide
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OTHER INFORMATION:

Place spilled product in suitable container and wash residue with plenty of water.

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

SECTION 311 HAZARD CATEGORIES (40 CFR 370):

Fire Hazard, Immediate (Acute) Health Hazard

SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR 370):

The Threshold Planning Quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs; however, this product contains the following ingredients with a TPQ of less than 10,000 lbs.:
None

SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372):

Not listed

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

CERCLA DESIGNATION & REPORTABLE QUANTITIES (RQ) (40 CFR 302.4):

Not applicable

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA INVENTORY STATUS (40 CFR 710):

Listed

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

RCRA IDENTIFICATION OF HAZARDOUS WASTE (40 CFR 261):

Waste Number: Calcium Peroxide, D001

CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM):

Chemical Name: Calcium hydroxide
Product Identification Number: 1457
Hazard Classification / Division: Class D, Div 2, Subdiv. B, Class C (Oxidizer)
Ingredient Disclosure List: Listed

INTERNATIONAL LISTINGS

Calcium peroxide:
Australia (AICS): Listed
China: Listed
Japan (ENCS): (1)-190
Korea: KE-04597
Philippines (PICCS): Listed

Calcium hydroxide:
Australia (AICS): Listed
China: Listed
Japan (ENCS): (1)-181

Korea: KE-04518
Philippines (PICCS): Listed

16. OTHER INFORMATION

HMIS

Health	2
Flammability	0
Physical Hazard	1
Personal Protection (PPE)	J

Protection = J (Safety goggles, gloves, apron & combination dust & vapor respirator)

HMIS = Hazardous Materials Identification System

Degree of Hazard Code:

4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

NFPA

Health	2
Flammability	0
Reactivity	1
Special	OX

SPECIAL = OX (Oxidizer)

NFPA = National Fire Protection Association

Degree of Hazard Code:

4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant

REVISION SUMMARY:

This MSDS replaces Revision #13, dated January 20, 2005.

Changes in information are as follows:

Section 1 (Product and Company Identification)
Section 3 (Composition / Information on Ingredients)
Section 16 (Other Information)

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