

## Material Safety Data Sheet (MSDS)

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### **Section 1. Chemical Product and Company Identification**

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Product Name                      PetroDrill Diesel Oil Base Mud  
Synonyms                            Oil Base Mud, OBM, Invert

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Supplier

GEO Drilling Fluids, Inc.  
1431 Union Ave.  
Bakersfield, CA 93305

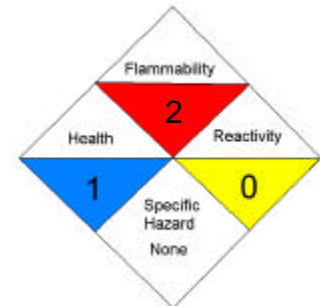
Material Uses                      Oil & Gas Well Drilling Fluid                      Revised:                      12/14/2007

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24 Hour Emergency                      GEO Drilling Fluids  
Number                                      (661) 325-5919                      (800) 438-7436

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National Fire Protection  
Association (U.S.A.)




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### **Section 2. Composition and Information on Ingredients**

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Chemical Composition                      Blend of various constituents in various concentrations.

Name	CAS #	% by Weight	Exposure Limits
Barite (Barium Sulfate)	7727-43-7	0-40	None established by OSHA/ACGIH/NIOSH
Calcium Chloride	10043-52-4	1-6	None established by OSHA/ACGIH/NIOSH
Hot Lime	1305-78-8	0.3-0.6	Not listed by NTP, IARC or OSHA for carcinogens. OSHA exposure 5 mg/m <sup>3</sup> 8 hour time weighted average.
Diesel	68476-34-6	38-95	Agency: ACGIH Type: TWA-SKIN 5 mg/m, as mineral oil mist
MUL I	8002-26-4	0.5-1	Not listed by NTP, IARC,NIOSH, or OSHA for carcinogens.
MUL II	67-56-1 64742-47-8	0.03-0.1 0.1-0.3	Greater than 200 ppm by ACGIH & OSHA
MUL THICK	68953-58-2	1-4	Crystalline silica <7.0% in MUL THICK

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### **Section 3. Hazard Identification**

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#### Potential Health Effects

The base oil may cause irritation to the eyes, nose, throat, lungs, and skin after prolonged or repeated exposure. Extreme overexposure or aspiration in the lungs may cause lung damage or death. Overexposure may cause weakness, headache, nausea, confusion, blurred vision, drowsiness and other nervous system effects.

This product contains calcium soap formed by the emulsifiers and lime. This can cause irritation to the skin if allowed to remain in contact for a prolonged period. See Section 8.

**Eye Contact:**

Stearic-palmitic mixtures produced only mild conjunctival erythema in two of six rabbits at the 24 and 48-hour readings. No other signs of irritation were observed. All signs of irritation had subsided completely at the 72-hour reading. Oleic acid produced mild conjunctivitis in five of six rabbits. No other irritative signs were observed and all except one rabbit showed no irritative signs at the 72-hour reading.

**Skin Contact:**

Base Oil: Severe skin irritant. Contact may cause redness, itching, burning, and severe skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). Not actually toxic by skin absorption, but prolonged or repeated skin contact may be harmful.

Exposure to stearic-palmitic acid mixtures caused no signs of irritation or corrosivity at either intact or abraded sites on albino rabbits. Exposure to oleic acid resulted in very slight erythema in six intact and six abraded sites on albino rabbits at the 24-hour reading only. No edema was observed at either observation.

Primary irritation index for stearic, palmitic and oleic acids was 0.0 - 0.5.

75 mg of stearic acid applied intermittently to human skin over a 3-day period resulted in mild irritation. 500 mg of stearic acid applied to rabbit skin over a 24-hour period resulted in moderate irritation. 15 mg of oleic acid intermittently applied to human skin over a 3-day period resulted in moderate irritation. 500 mg of oleic acid applied to rabbit skin in an open draize test resulted in mild irritation.

## SECTION V – EMERGENCY FIRST AID PROCEDURE

**For overexposure by swallowing:** If victim is conscious and able to swallow, quickly have victim drink water or milk to dilute. Do not give Sodium Bicarbonate, fruit juices or vinegar. Never give anything by mouth if victim is unconscious or having convulsions. Induce vomiting only if advised by physician or poison control center. **Call physician or poison control center immediately.**

**For overexposure by skin contact:** Immediately flush skin with plenty of water while removing contaminated clothing. Wash contaminated clothing before reuse.

**For overexposure by eye contact:** Immediately flush eyes with plenty of cool water for at least 15 minutes. Do not let victim rub eyes. **Get medical attention immediately.**

**For overexposure by inhalation:** Immediately remove victim to fresh air. If Victim has stopped breathing give artificial respiration, preferably by mouth-to-mouth. **Get medical attention immediately.**

## SECTION VI - PHYSICAL DATA

Boiling Point:	Approx. 182° C at 1 mm Hg pressure
Melting point:	Not determined
Vapor pressure:	1 mm hg pressure at 180°deg c (approx.)
Specific gravity:	0.89 at 25/20° C

Solubility in water: Negligible  
 Appearance and color: Black viscous liquid at 25° C

## SECTION VII – FIRE AND EXPLOSION HAZARDS

Flash Point & Method Used: 125° F (52° C) C.O.O.  
 Flammable limits in air, % by Volume Lower: 0.6%  
 Flammable limits in air, % by Volume Upper: 7%  
 NFPA Rating: 2 (Combustible)  
 HMIS Rating: Health (2\*) Fire (2) Reactivity (0)

### Special Fire Fighting Procedures & Precautions

(Individuals should perform only those fire fighting procedures for which they have been trained). Water or foam may cause frothing when applied to flammable liquids having flash points above 212° F (100° C). The remark is included only as a precaution and does not mean that water or foam should not or could not be used in fighting fires in such liquids. The frothing may be quite violent and could endanger the life of the firefighter particularly when solid streams are directed into the hot burning liquid. On the other hand, water spray carefully applied has frequently been used with success in extinguishing such fires by causing the frothing to occur only on the surface. This foaming action blankets and extinguishes the fire. (NFPA 325M-1984)

### Unusual Fire & Explosion Hazards

Firefighters should wear self-contained breathing apparatus in the positive-pressure mode with a full facepiece when there is a possibility of exposure to smoke, fumes or hazardous decomposition products.

## SECTION VIII - REACTIVITY

Stability: Generally stable  
 Hazardous polymerization: None likely  
 Conditions & materials to avoid: Avoid contact with strong oxidizing agents and strong alkalis.  
 Hazardous decomposition products: Decomposition may produce carbon monoxide and CO<sub>2</sub>.

## SECTION IX - EMPLOYEE PROTECTION

**Control measures:** Handle in the presence of adequate ventilation.  
**Respiratory protection:** Where exposure is likely to exceed acceptable criteria (see sections II and IV), use NIOSH/OSHA approved respiratory equipment. Respirators should be selected based on the form and concentration of contaminant in air and in accordance with OSHA (29 CFR 1910.134).  
**Protective clothing:** Wear gloves and protective clothing which is impervious to the product for the duration of anticipated exposure if there is potential for prolonged or repeated skin contact.  
**Eye protection:** Wear safety glasses meeting the specifications of ANSI Standard Z87.1 where no contact with the eye is anticipated. Chemical safety goggles meeting the

specifications of ANSI Standard Z87.1 should be worn whenever there is the possibility of splashing or other contact with the eyes

## **SECTION X - ENVIRONMENTAL PROTECTION**

**Environmental Precautions:** Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill response plan should be developed and implemented.

**Spill Or Leak Precautions:** Wear appropriate respiratory protection and protective clothing as described in Section IX. Contain spilled material. Transfer to secure containers. Where necessary, collect using absorbent media. In the event of an uncontrolled release of this material, the user should determine if the release is reportable under applicable laws and regulations.

**Waste Disposal:** All recovered material should be packaged, labeled, transported, and disposed or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Avoid landfilling of liquids. Reclaim where possible.

## **SECTION XI - REGULATORY CONTROLS**

### **Department of Transportation:**

Dot classification: Not Regulated

Dot proper shipping name:

Other dot information:

## **SECTION XII - PRECAUTIONS: HANDLING, STORAGE AND USAGE**

Store in a cool, dry, well-ventilated area. Store away from heat and moisture, and out of sunlight. Area should be protected from contamination by corrosive fumes. Should be stored away from fire hazard areas. Storage area should not contain drain to which toxicants could be flushed. Containers should be sealed as tightly as possible. Inspect periodically for deficiencies. A spill control plan should be provided. Isolate from acids and acid fumes, corrosives, fire hazards, heat and moisture. Container is hazardous when emptied. Since emptied containers retain product residues, all hazard precautions described on this MSDS must be observed.

Keep in closed or covered containers and do not store near heat or open flames.

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which GEO Drilling Fluids, Inc. bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.