

MATERIAL SAFETY DATA SHEET



MIL-LIME™

Drilling Fluids

1. Product and Company Identification

Material name	MIL-LIME™
Chemical name	Calcium hydroxide
Chemical description	Lime
Supplier	Baker Hughes Drilling Fluids 2001 Rankin Rd. Houston, TX 77073 Emergency telephone number 713-439-8900

2. Composition / Information on Ingredients

Components	CAS #	Percent
CALCIUM HYDROXIDE	1305-62-0	100
Composition comments	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	

3. Hazards Identification

Emergency overview	Harmful in contact with eyes. Risk of serious damage to eyes. Irritating to skin. Prolonged exposure may cause chronic effects.
Potential health effects	
Routes of exposure	Skin contact. Inhalation. Eye contact.
Eyes	Contact may irritate or burn eyes. Eye contact may result in corneal injury. Corrosive to the eyes and may cause severe damage including blindness.
Skin	Contact may irritate or burn skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).
Inhalation	Dusts of this product may cause irritation of the nose, throat, and respiratory tract.
Ingestion	Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
Target organs	Eyes. Respiratory system. Skin.
Chronic effects	Shortness of breath. May cause delayed lung damage. Prolonged skin contact may defat the skin and produce dermatitis. Conjunctiva.
Signs and symptoms	Cough. Discomfort in the chest. Shortness of breath. Defatting of the skin. Rash. Irritation. Conjunctivitis. Corneal damage.

4. First Aid Measures

First aid procedures	
Eye contact	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Skin contact	Remove and isolate contaminated clothing and shoes. Wash off with warm water and soap. Launder contaminated clothing before reuse. Get medical attention immediately.
Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion	Do not induce vomiting. If conscious, drink plenty of water. Do not induce vomiting without medical advice. Get medical attention immediately.
Notes to physician	Symptoms may be delayed.
General advice	Keep victim warm. Keep victim under observation. In case of shortness of breath, give oxygen. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Hazardous combustion products	Carbon monoxide, carbon dioxide, various hydrocarbon fragments as well as thick smoke.
Extinguishing media	
Suitable extinguishing media	Use extinguishing agent suitable for type of surrounding fire.

Protection of firefighters

Protective equipment for firefighters

Firefighters should wear full protective clothing including self contained breathing apparatus.

6. Accidental Release Measures

Personal precautions	Surfaces may become slippery after spillage. Do not touch or walk through spilled material. Wear appropriate protective equipment and clothing during clean-up. For recommended protective clothing and equipment, see section 8 "Exposure Controls and Personal Protection".
Evacuation procedures	Keep unnecessary personnel away.
Environmental precautions	Do not contaminate surface water. Avoid subsoil penetration.
Methods for containment	Stop the flow of material, if this is without risk. Prevent entry into waterways, sewers, basements or confined areas.
Methods for cleaning up	Sweep up or gather material and place in appropriate container for disposal. Avoid the generation of dusts during clean-up.

7. Handling and Storage

Handling	Avoid contact with skin and eyes. Do not use in areas without adequate ventilation.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep this material away from food, drink and animal feed.

8. Exposure Controls / Personal Protection

Exposure guidelines

ACGIH - Threshold Limits Values - Time Weighted Averages (TLV-TWA)

CALCIUM HYDROXIDE 1305-62-0 5 Mg/m3 TWA

ACGIH - Threshold Limits Values - TLV Basis - Critical Effects

CALCIUM HYDROXIDE 1305-62-0 irritation

OSHA - Final PELs - Time Weighted Averages (TWAs)

CALCIUM HYDROXIDE 1305-62-0 15 Mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

Engineering controls	Ensure adequate ventilation, especially in confined areas.
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Personal protective equipment

Eye / face protection	Wear dust goggles. Face-shield.
Skin protection	Use of protective coveralls and long sleeves is recommended. Rubber or plastic boots.
Hand protection	Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
General hygiene considerations	Wash hands before breaks and immediately after handling the product. Avoid contact with the skin and the eyes. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Appearance / Color / Form	Crystalline. White. Solid.
Odor	Odourless.
Clarity	Not available
Odor threshold	Not available
Physical state	Solid
pH	12.4 At 25 °C (saturated solution)
Melting point	1076 °F (580 °C)
Freezing point	Not available
Boiling point	Not available
Flash point	Not applicable
Evaporation rate	1
Flammability limits in air, lower, % by volume	Not available
Flammability limits in air, upper, % by volume	Not available
Vapor pressure	0 HPa at 20 °C
Vapor density	Not available
Specific gravity	2.24

Material name: MIL-LIME™

Material ID: 1119 Version #: 1.0 Revision date: 21-APR-2006 Print date: 21-APR-2006

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Relative density	Not available
Solubility	Soluble in water.
Octanol/H ₂ O coeff	1.7
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Percent volatile	5 % in water
Molecular weight	74.10 g/mol
Molecular formula	Ca(OH) ₂

10. Chemical Stability and Reativity Information

Chemical stability	Stable at normal conditions.
Conditions to avoid	Exposure to moisture.
Incompatible materials	This product reacts with acids. Nitroethane. Nitropropane. Nitromethane. Nitroparaffins. Maleic anhydride.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Component analysis - LD50

Toxicology Data - Selected LD50s and LC50s

CALCIUM HYDROXIDE 1305-62-0 Oral LD50 Rat: 7340 mg/kg

Further information Causes severe irritation of eyes, skin and mucous membranes.

12. Ecological Information

Persistence / degradability	Expected to be slow, but will ultimately degrade in the aquatic environment.
Bioaccumulation / accumulation	Not expected to bioaccumulate.
Partition coefficient	1.7
Mobility in environmental media	This product will disperse readily in bodies of water or in wet soil.

13. Disposal Considerations

Disposal instructions	Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
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14. Transport Information

Department of Transportation (DOT) Requirements

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

FDA - Food Additives Generally Recognized as Safe (GRAS)

CALCIUM HYDROXIDE 1305-62-0 21 CFR 184.1205

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

CERCLA (Superfund) reportable quantity None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance

No

Section 311 hazardous chemical

Yes

Food and Drug Administration (FDA)

Total food additive
GRAS food additive

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (CCS)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Japanese Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Korean Inventory of Chemicals (KICS)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

International regulations

The product is classified and labelled in accordance with EC directives or respective national laws.

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Massachusetts - Right To Know List

CALCIUM HYDROXIDE 1305-62-0 Present

New Jersey - Right to Know Hazardous Substance List

CALCIUM HYDROXIDE 1305-62-0 sn 0322

Pennsylvania - RTK (Right to Know) List

CALCIUM HYDROXIDE 1305-62-0 Present

16. Other Information

HMIS ratings

Health: 3
Flammability: 0
Physical hazard: 0
Personal protection: J

NFPA ratings

Health: 3
Flammability: 0
Instability: 0

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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