




Section 1: Product & Company Information

Product Name: Lime
Chemical Family: Calcium Hydroxide
Product Use: Drilling Fluid Additive

Workplace Hazardous Materials Information Systems Data (WHMIS):

	Class ID	Class	Workplace Hazard
	D-2-A	Materials Causing Other Toxic Effects - Very Toxic	Toxic effects
	E	Corrosive Materials	Corrosive

Manufacturer Name: HiTech Fluid Systems
Address: #1800, 505 3rd Street SW, Calgary, AB T2P 3E6 Canada
General Phone Number: (403)547-2906
General Fax Number: (403)547-3129
MSDS Revision Date: June 1, 2008
Supercedes: June 23, 2005
Prepared By: HiTech Fluid Systems
Preparer's Phone: (403)547-2906

Section 2: Composition/Information on Ingredients

Chemical Name	Concentration	CAS#
Crystalline Silica, Quartz	>0.1 %	14808-60-7
Calcium Hydroxide	>92 %	1305-62-0

Section 3: Hazards Identification

Emergency Overview: Consult a physician for all exposures, except minor instances of inhalation.

Routes of Entry:

Skin Contact: Yes
Skin Absorption: No
Eye Contact: Yes
Inhalation: Yes
Ingestion: Yes

Potential Health Effects:

Skin:	Mucous and skin corrosion. Removes skin oils.
Eye:	Severe eye irritation, intense watering of eyes, possible lesions, possible blindness when exposed for prolonged period.
Inhalation:	Irritation of breathing passages, coughing
Ingestion:	Pain, vomiting blood, diarrhea, drop in blood pressure (indicates perforation of esophagus or stomach)

Section 4: First Aid Measures

Eye Contact:	Immediately rinse eyes with lukewarm water for at least 15 minutes. Seek immediate medical attention.
Skin Contact:	Carefully and gently brush the contaminated body surfaces in order to remove all traces of lime. Remove contaminated clothing. Rinse contaminated area with lukewarm water for 15 minutes. If adverse symptoms develop seek medical attention.
Inhalation:	Remove patient to fresh air. If breathing has stopped, administer artificial respiration, and seek medical attention.
Ingestion:	DO NOT induce vomiting. If patient is conscious, give 10 ounces of water to drink, followed by diluted vinegar (1 part vinegar:2 parts water) or fruit juice to neutralise the alkali. Seek immediate medical attention.
Other First Aid:	Consult a physician for all exposures, except minor instances of inhalation.

Section 5: Fire Fighting Measures

Conditions Of Flammability:	Non-flammable
Extinguishing Media:	Dry chemical, carbon dioxide, foam, water
Flashpoint:	Not Applicable
Upper Flammable Limit:	Not Applicable
Lower Flammable Limit:	Not Applicable
Autoignition Temperature:	Not Available
Protective Equipment:	Firefighters must wear appropriate breathing apparatus and clothing.
Sensitivity To Impact or Static Discharge:	Not Applicable
Hazardous Combustion Products:	Not Determined
Fire Comment:	Not Available

Section 6: Accidental Release Measures

- Personnel Precautions:** Use proper personal protective equipment as listed in section 8.
- Spill Cleanup Measures:** Use appropriate safety equipment. Small spills, sweep up and put into approved DOT containers for disposal or re-use. Large spills, do not allow to enter waterways, sweep or shovel into approved DOT containers for re-use or disposal.

Section 7: Handling & Storage

- Handling:** Avoid ingestion. Practice reasonable caution and personal cleanliness. Avoid skin and eye contact.
- Storage:** Store in a cool, dry, well ventilated place. Keep container tightly closed and away from incompatible materials.

Section 8: Exposure Controls, Personal Protection, Exposure Guidelines

- Engineering Controls:** Provide mechanical ventilation to prevent dust concentrations, and to reduce potential exposure.
- Personal Protective Equipment:** Chemical-resistant clothing is recommended, including gloves, apron, and goggles.
- Respiratory Protection:** Recommend NIOSH-approved dust respirator.
- Exposure Limits:** Not Determined

Chemical Name	ACGIH TLV-TWA	OSHA PEL-TWA
Crystalline Silica, Quartz	0.05 mg/m ³	0.1 mg/m ³
Calcium Hydroxide	5 (TWA) 8/40h	5 (TWA) 8/40h

Section 9: Physical & Chemical Properties

- Physical State:** Solid
- Odour And Appearance:** Fine white powder; odourless
- Odour Threshold:** Not Applicable
- Boiling Point:** Not Applicable
- Evaporation Rate:** Not Applicable
- Melting Point:** Not Applicable
- Freezing Point:** Not Applicable
- Specific Gravity:** 2.3-2.4
- Solubility in Water:** Soluble

Vapour Density:	Not Applicable
Vapour Pressure:	Not Applicable
pH:	12.45
Flash Point:	Not Applicable
Volatility (% by volume):	Not Applicable
Coefficient of Water to Oil distribution:	Not Applicable

Section 10: Stability & Reactivity

Chemical Stability:	No
Hazardous Polymerization:	Will not occur.
Conditions Of Chemical Instability:	Absorbs carbon dioxide in the air to form calcium carbonate.
Incompatible Substances:	Boron tri-flouride, chlorine tri-fluoride, ethanol, flourine,hydrogen flouride, phosphorus pentoxide, and acids. (violent reaction with generating heat and possible explosion in confined area)
Special Decomposition Products:	Thermal decomposition at 540°C will produce calcium oxide and water.

Section 11: Toxicological Information

Chemical Name	LD ₅₀ (Oral Rat)	LD ₅₀ (Dermal Rabbit)	LC ₅₀ (Inhalation Rat)
Crystalline Silica, Quartz	Not Available	Not Available	Not Available
Calcium Hydroxide	Not Available	Not Available	Not Available

Effects Of Acute Exposure:	Not Determined
Effects Of Chronic Exposure:	Contact dermatitis
General Irritancy Of Product:	Severe to moist tissues
Sensitization:	Not Determined
Carcinogenicity:	Lime could contain crystalline silica, a known carcinogen.
Reproductive Toxicity:	Not Applicable
Teratogenicity:	Not Applicable
Embryotoxicity:	Not Available
Mutagenicity:	Not Applicable
Synergistic Products:	Not Applicable

Section 12: Ecological Information

Ecotoxicity: Not Available

Environmental Fate: Not Available

Section 13: Disposal Considerations

Waste Disposal: All waste should be disposed of according to federal, provincial and local regulations. Containers should NOT be re-used. Containers should be disposed of in accordance with government regulations.

Section 14: Transport Information



TDG Classification: Not Regulated

DOT UN Number: Not Regulated

Shipping Notes: No special requirements

Section 15: Regulatory Information

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This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Section 16: Additional Information

MSDS Revision Date: June 1, 2008

MSDS Revision Notes:

MSDS Author: HiTech Fluid Systems

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