

# MATERIAL SAFETY DATA SHEET

## SECTION I: IDENTIFICATION OF PRODUCT

COMPANY: **Diversity Technologies Corp.** DATE: **October 7, 2009**  
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PRODUCT NAME: **Hydrated Lime**

PRODUCT USE: Oil well drilling fluid and cement additive.  
CHEMICAL FAMILY: **Alkaline earth hydroxide** CAS #: 1305-62-0

## WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

WHMIS CLASSIFICATION: D2A; E  
WORKPLACE HAZARD: Potential carcinogen; corrosive solid.

## TRANSPORTATION OF DANGEROUS GOODS (TDG)

PROPER SHIPPING NAME: Not regulated under TDG (except by air)  
TDG CLASSIFICATION: Not applicable  
UN NUMBER (PIN): Not applicable  
PACKING GROUP: Not applicable

## SECTION II: HAZARDOUS INGREDIENTS

<u>INGREDIENT</u>	<u>% (w/w)</u>	<u>CAS NUMBER</u>	<u>LD<sub>50</sub> Oral-Rat</u>	<u>LC<sub>50</sub> Inhal-Rat</u>	<u>ACGIH-TLV</u>
Calcium hydroxide	92-100	1305-62-0	7340 mg/kg	Not available	5 mg/m <sup>3</sup>
Crystalline silica, quartz	0.1 - 1.0 & 0 – 0.1*	14808-60-7	Not available	Not available	<b>0.025 mg/m<sup>3</sup> respirable</b>

\* Concentration of crystalline silica in a series of lime products will vary from source to source. It was not detected on some samples (<0.1% w/w), therefore two ranges are being disclosed.

## SECTION III: HEALTH HAZARDS

ROUTE OF ENTRY: [XX] EYE CONTACT [XX] SKIN [XX] INHALATION [XX] INGESTION  
EYE CONTACT: Corrosive solid. Will cause severe irritation, intense watering of the eyes, possible lesions, possible blindness when exposed for prolonged period.  
SKIN CONTACT: Acute contact may cause irritation. Can penetrate the skin slowly, producing soft, necrotic, deeply penetrating chemical burns.

INGESTION:	Effects could include severe pain and burning of the mouth, throat and esophagus, stomach cramps, vomiting and diarrhea. Ingestion of large quantities may be corrosive to the gastrointestinal tract; may cause perforation of the esophagus or stomach. Low oral toxicity.
INHALATION:	Inhalation of dust will cause irritation of the upper respiratory tract. Solubility of product allows further penetration that may continue for several days. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Long-term inhalation may cause silicosis, a progressive, disabling and sometimes-fatal lung disease. Chronic inhalation exposure to crystalline silica quartz has been observed to cause lymph node effects, kidney effects and auto-immune disease.
CARCINOGENICITY:	Calcium hydroxide is not listed by IARC, NTP, OSHA or ACGIH. Crystalline silica when inhaled in the form of quartz from occupational sources is carcinogenic to humans: IARC has concluded that this chemical is carcinogenic to humans (Group 1). ACGIH has designated this chemical as a suspected human carcinogen (A2). NTP has listed this chemical as a known human carcinogen.
TERATOGENICITY:	No information available.
REPRODUCTIVE TOXICITY:	No information available.
MUTAGENICITY:	Crystalline silica has been shown to cause mutagenic effects in human cells in-vitro.
SYNERGISTIC PRODUCTS:	No information available.

#### **SECTION IV: FIRST AID MEASURES**

SKIN CONTACT:	Quickly and gently brush away excess product. Flush with running water for 15 to 20 minutes while removing contaminated clothing. Obtain medical attention if large area is exposed or irritation persists.
EYE CONTACT:	Flush eyes with gently running warm water for minimum 30 minutes, or until irritation ceases; hold eyelids open to ensure thorough flushing. Neutral saline may be used as soon as it is available. Obtain medical attention only when flushing is complete.
INGESTION:	Do not induce vomiting. Obtain immediate medical attention. If immediate medical attention is unavailable; rinse mouth thoroughly with water, then give one glass of water followed by one glass of milk (if available). If spontaneous vomiting occurs, readminister water. Never give anything by mouth to an unconscious or convulsing victim.
INHALATION:	Move patient to fresh air. Give oxygen or apply artificial respiration if required. Get immediate medical assistance.

**SECTION V: PHYSICAL DATA**

APPEARANCE AND ODOUR:	Fine white powder; slight earthy odour
SPECIFIC GRAVITY:	2.3 – 2.4
BOILING POINT (°C):	Not applicable
MELTING POINT (°C):	Not applicable
SOLUBILITY IN WATER:	0.165g/100g @ 20°C      pH: 12.45 (sat'd sol'n)
PERCENT VOLATILE BY VOLUME:	Not applicable
EVAPORATION RATE:	Not applicable
VAPOUR PRESSURE (mmHg):	Not applicable
VAPOUR DENSITY (air = 1):	Not applicable
BULK DENSITY:	320 – 690 kg/m <sup>3</sup>

**SECTION VI: FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT:	Not applicable
FLAMMABLE LIMITS:	Not applicable
EXTINGUISHING MEDIA:	Use extinguishing media appropriate for packaging and surrounding fire.
SPECIAL FIRE FIGHTING PROCEDURES:	Self-contained breathing apparatus required for fire fighting personnel.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Not available.

**SECTION VII: REACTIVITY DATA**

STABILITY:	STABLE [XX]                      UNSTABLE [ ]
INCOMPATIBILITY (CONDITIONS TO AVOID):	Boron trifluoride, chlorine trifluoride, ethanol, fluorine, hydrogen fluoride, phosphorus pentoxide, and acids (violent reaction generating heat and possible explosion in confined area). Absorbs CO <sub>2</sub> from the air to form calcium carbonate.
CONDITIONS OF REACTIVITY:	Reacts violently with strong acids. Reacts exothermically with acids and many other compounds and chemical elements to form calcium based compounds. Explosive when mixed with nitro compounds.
HAZARDOUS DECOMPOSITION PRODUCTS:	Thermal decomposition at 540°C will produce calcium oxide and water.
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR [XX]      MAY OCCUR [ ]

**SECTION VIII: PREVENTATIVE MEASURES****SPECIAL PROTECTION INFORMATION**

RESPIRATORY PROTECTION:	NIOSH approved filter mask or respirator with dust filters recommended.
VENTILATION:	Use local exhaust ventilation, process enclosure or other engineering control to maintain level of airborne dust below TLV.
PROTECTIVE GLOVES:	Impervious gloves should be worn. Suggest rubber.
EYE PROTECTION:	Chemical goggles should be worn. Contact lenses should not be worn when handling this material.
OTHER PROTECTIVE EQUIPMENT (Specify):	Recommend coveralls and chemical resistant footwear. Ensure eyewash station and emergency shower are available.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

Avoid creating dust. Avoid inhalation. Avoid contact with eyes and skin. After handling lime, employees must shower. If exposed daily, use oil, Vaseline, silicone base crème etc. to protect exposed skin, particularly neck, face and wrists. Store in a cool, dry well-ventilated area out of direct contact with weather. Store away from incompatible materials. Keep product dry at all times. Keep container tightly closed when not in use. Empty containers contain residual hazardous material and should be handled as if full.

**STEPS TO BE TAKEN IN CASE THE MATERIAL IS SPILLED OR RELEASED**

Use appropriate safety equipment. Ventilate area. Avoid creating dust. Sweep up and collect spilled material. Collect uncontaminated material for repackaging. Collect contaminated material for disposal in an approved container for disposal. Flush spill area with copious quantities of water.

**WASTE DISPOSAL METHOD**

Dispose in accordance with federal, provincial and local regulations. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal. Empty packaging contains residual hazardous material and should be recycled, or disposed of, in accordance with local regulations.

**SECTION IX: PREPARATION**

THE INFORMATION CONTAINED HEREIN IS GIVEN IN GOOD FAITH,  
BUT NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE.

DATE ISSUED:	October 7, 2009	BY:	Product safety committee
SUPERSEDES:	February 2, 2007	PHONE:	780-440-4923

**Diversity Technologies Corp. is the parent company of  
Canamara-United Supply, Hollimex Products, The Drilling Depot and  
Westcoast Drilling Supplies.**