

## Praxair Material Safety Data Sheet

### 1. Chemical Product and Company Identification

<b>Product Name:</b> Calcium Carbide Lime	<b>Trade Name:</b> Calcium Carbide Lime
<b>Product Use:</b> Many	
<b>Chemical Name:</b> Slurry of Calcium Hydroxide, Calcium Carbonate	<b>Synonym:</b> Activated lime, carbide sludge, generator slurry, lime slurry, carbide lime, lime sludge, lime hydrate, hydrated lime, lime water, slaked lime, bell mine
<b>Chemical Formula:</b> Ca(OH) <sub>2</sub> , CH <sub>2</sub> O <sub>3</sub> . Ca	<b>Chemical Family:</b> Metal hydroxide
<b>Telephone:</b> <b>Emergencies:</b> * 1-800-363-0042	<b>Supplier /Manufacture:</b> Praxair Canada Inc. 1 City Centre Drive Suite 1200 Mississauga, ON L5B 1M2  <b>Phone:</b> 905-803-1600 <b>Fax:</b> 905-803-1682

*\*Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier or Praxair sales representative.*

### 2. Composition and Information on Ingredients

INGREDIENTS	% (VOL)	CAS NUMBER	LD <sub>50</sub> (Species & Routes)	LC <sub>50</sub> (Rat, 4 hrs.)	TLV-TWA (ACGIH)
Calcium hydroxide	85-92.5	1305-62-0	ORAL (LD50):	Not available.	5 mg/m3 (Respirable)
Calcium carbonate	1.85-12%	1317-65-3	Acute: 7340	Not available.	10 mg/m3 (Respirable)
Slag as unreacted carbon & metal silicates melt product (glass particles) Note: The information is for calcium hydroxide-dry basis. Will normally be mixed with water. Analysis is recommended for exact concentrations. Note: Ammonium hydroxide, CAS 1336-21-6, is present in supernatant at 100-300 ppm.	1-3.1%	471-34-1	mg/kg [Rat].	Not available.	None.

### 3. Hazards Identification

#### Emergency Overview

**DANGER!** Non-flammable solid particulates in water suspension. May cause skin, eye and respiratory tract irritation and burns.

#### ROUTES OF EXPOSURE:

Swallowing. Skin absorption. Skin contact. Eye contact.

**THRESHOLD LIMIT VALUE:** TLV-TWA Data from 2007 Guide to Occupational Exposure Values (ACGIH). TLV-TWAs should be used as a guide in the control of health hazards and not as fine lines between safe and dangerous concentrations.

**EFFECTS OF A SINGLE (ACUTE) OVEREXPOSURE:**

<b>INHALATION:</b>	Irritating to the eyes and respiratory tract, experienced as nausea, vomiting cough, excess sputum and chest discomfort. May cause pulmonary edema.
<b>SKIN CONTACT:</b>	Exposure may cause irritation, seen as redness, with possible swelling.
<b>SKIN ABSORPTION:</b>	Lime in slurry form will not affect the skin immediately on contact. Prolonged contact with lime may cause skin lesions that normally heal within 5 to 7 days.
<b>SWALLOWING:</b>	May cause burns of the mouth, throat, esophagus with abdominal and chest discomfort, nausea, vomiting, diarrhea, weakness, faintness, dizziness, drowsiness and coma.
<b>EYE CONTACT:</b>	Exposure may cause severe irritation, experienced as pain, excess tearing, conjunctival edema and hemorrhage, corneal edema and opacification.

**EFFECTS OF REPEATED (CHRONIC) OVEREXPOSURE:**

No evidence of adverse effects from available information.

**OTHER EFFECTS OF OVEREXPOSURE:**

Not available.

**MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:**

May cause severe irritation and chemical burns with ulceration and scarring of the skin. Repeated exposure of the skin may result in cumulative dermatitis.

**SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:**

None currently known.

**CARCINOGENICITY:**

Not listed as carcinogen by OSHA, NTP or IARC.

## 4. First Aid Measures

**INHALATION:**

Remove to fresh air. If not breathing, clear airways of any slurry or caked material and give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Call a physician.

**SKIN CONTACT:**

Rinse lime from skin with copious amounts of water without rubbing; blot dry with a soft towel. Remove contaminated clothing. Use commercially available lanolin-based skin lubricating oils to treat slight burns and reduce irritation due to drying. Wash clothing with soap and a cup of vinegar before reuse. Discard shoes and gloves if contaminated with lime on the inside.

**SWALLOWING:**

Give at least two glasses of water at once. Do not induce vomiting. Call a physician.

**EYE CONTACT:**

Immediately flush eyes thoroughly with warm water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. See a physician, preferably an ophthalmologist, immediately.

**NOTES TO PHYSICIAN:**

*Use of acidics to neutralize swallowed contents is contraindicated. Use of an EDTA (ethylenediaminetetraacetic acid) solution for rinsing the eyes may help to remove solid particles of the material and relieve some corneal opacification.*

### 5. Fire Fighting Measures

**FLAMMABLE :** No. **IF YES, UNDER WHAT CONDITIONS?** Non-flammable.

**FLASH POINT (test method)** Not applicable.

**AUTOIGNITION TEMPERATURE** Not applicable.

**FLAMMABLE LIMITS IN AIR, % by volume:**

**LOWER:** Not applicable.

**UPPER:** Not applicable.

**EXTINGUISHING MEDIA:**

This material cannot catch fire. Use media appropriate for surrounding fire. See Unusual Fire and Explosion Hazards below.

**SPECIAL FIRE FIGHTING PROCEDURES:**

**DANGER!** None currently known.

**UNUSUAL FIRE AND EXPLOSION HAZARD:**

This material is a by-product from acetylene generation. A limited amount of acetylene temporarily remains in solution in the carbide lime slurry at the time of discharge from the generation process. With subsequent agitation from handling and retention in open vessels, the acetylene evolves from solution. A combustible gas mixture could possible form as a result of the acetylene released into the surrounding air. Acetylene is an extremely flammable gas, which forms explosive mixtures with air and oxidizing agents.

**HAZARDOUS COMBUSTION PRODUCTS:**

None.

**SENSITIVITY TO IMPACT:**

Avoid impact against container.

**SENSITIVITY TO STATIC DISCHARGE:**

Not applicable.

### 6. Accidental Release Measures

**STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:**

**DANGER!** Contain spill. Keep personnel away. Calcium hydroxide will raise pH of water. Prevent water run-off from entering sewers and water supply. Affected areas may be slippery.

**SMALL SPILLS:** Carefully scoop or shovel lime into a clean dry container for disposal or recovery. If any lime has dried out, avoid making dust. Recovered lime may be collected for reuse. Small amounts may be diluted with water, and flushed to a sewer if appropriate approvals are obtained.

**LARGE SPILLS:** Isolate hazard area and keep unnecessary people away. Stay upwind from dired material and uphill from slurry spills. Carefully scoop or shovel lime into a clean container for disposal or recovery. If any lime has dried out, avoid making dust. Recovered lime may be collected for reuse. Small amounts may be diluted with water, and flushed to a sewer if appropriate approval are obtained.

**OTHER CONSIDERATIONS:** Carbide lime will coat concrete, metal, and other porous surfaces. If allowed to dry and react with carbon dioxide in the air to form calcium carbonate (limestone), it will become cement-like as when used for whitewash. In this condition, it will adhere to surfaces and can be hard to remove. Wet carbide lime can be removed from surfaces by rinsing with water or wiping with an absorbent cloth.

**WASTE DISPOSAL METHOD:**

Prevent waste from contaminating the surrounding environment. Keep personnel away. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, state, and local regulations. If necessary, call your local supplier for assistance.

## 7. Handling and Storage

### PRECAUTIONS TO BE TAKEN IN STORAGE:

Store in a clean, ventilated area. Isolate incompatible materials. (See section 10.) Vessels used to store carbide lime should be open-top or vented to the atmosphere to eliminate the potential for acetylene gas to accumulate in a closed space. Although the potential for carbide lime to liberate significant quantities of acetylene dissipates within 48 hours after generation, it is recommended that storage of carbide lime slurry be posted with "NO SMOKING" or "NO OPEN FLAMES" signs. Acetylene released from slurry or from unreacted calcium carbide can ignite from any source of ignition. All electrical equipment used in or around carbide lime storage or handling areas should comply with National Electrical Code requirements.

### PRECAUTIONS TO BE TAKEN IN HANDLING:

Prohibit consumption of food or beverages in work areas. Limit to storage and handling areas to trained, authorized personnel. Check the atmosphere in carbide lime areas for explosive conditions before starting maintenance activities.

### OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE:

Be sure to read and understand all labels and instructions supplied with all containers of this product.

**PRODUCT DESCRIPTION:** Carbide lime, a co-product of acetylene generation, is a fully hydrated form of calcium hydroxide. Carbide lime is normally mixed with water, and dry powder is usually not a significant factor. However, if Carbide Lime is exposed to the air, a small amount of dust may form. This dust is due to the scavenging of carbon dioxide from the air, forming calcium carbonate crystals, similar to stalactites and stalagmites (limestone). Slight variations in analysis and the presence of foreign matter in carbide lime will exist depending on local conditions at the point of production.

**MAXIMUM ACETYLENE DISSOLVED IN WATER:** The maximum volume of acetylene that may be dissolved in water (saturated) at 100°F (38°C) is 0.5 cu ft (14.2 l) of acetylene per cubic foot (28.3 l) of water, which equals 0.034 lb (0.015 kg) of acetylene or 554 ppm by weight in the water fraction of the suspension.

**OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE:** Nonflammable solid particulates in water suspension. Store and use with adequate ventilation at all times. Use equipment designed for handling calcium carbide lime. Do not eat, drink, or smoke in areas of storage or use. Wash hands and face thoroughly before eating, drinking, smoking, applying cosmetics, or using the toilet. Slurry or moist carbide lime is mildly caustic. Have safety showers and eyewash fountains available where carbide lime is handled, stored, or used. Slurry or moist lime may contain small amounts of flammable acetylene. Keep away from heat, sparks, and open flame. For detailed information on the hazards associated with acetylene, see Praxair Material Safety Data Sheet P-4559 and safety precautions booklet P-3499.

**MIXTURES:** When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Remember, chemical materials have properties that can cause serious injury or death.

## 8. Exposure Controls/Personal Protection

### VENTILATION/ENGINEERING CONTROLS:

**LOCAL EXHAUST:** Use process enclosures, local exhaust ventilation, or other engineering controls to prevent accumulation of Acetylene.

**MECHANICAL (general):** Acceptable. Use to maintain exposure below applicable limits.

**SPECIAL:** Not applicable.

**OTHER:** Not applicable.

### PERSONAL PROTECTION:

**RESPIRATORY PROTECTION:** None needed for vapors or for carbide lime slurry as produced from acetylene production or lime cake as stored in ponds. Confined space entry in the presence of carbide lime may require protection from ammonia vapors.

**SKIN PROTECTION:** Wear long sleeve, cotton like shirt, PVC or rubber coated gloves and a cap or hard hat. A waterproof, plastic protective garment and hard hat with face shield is recommended when handling lime slurry.

**EYE PROTECTION:** Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.

**OTHER PROTECTIVE EQUIPMENT:** Hard hat, rubber boots, and apron. Metatarsal shoes for cylinder handling. Protective clothing where needed. Cuffless trousers should be worn outside the shoes. Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines. Eyewash fountains.

## 9. Physical and Chemical Properties

<b>PHYSICAL STATE:</b> semisolid or suspension.	<b>FREEZING POINT:</b> Slightly below that of water.	<b>pH:</b> 12.454 [Basic.]
<b>BOILING POINT:</b> Decomposition temperature: 580 C to form water and calcium oxide	<b>VAPOUR PRESSURE:</b> Not applicable.	<b>MOLECULAR WEIGHT:</b> 74.09 g/mole
<b>SPECIFIC GRAVITY:</b> 10% solids: 1.058 30% solids: 1.198 50% solids: 1.379 LIQUID ( Water = 1)	<b>SOLUBILITY IN WATER:</b> Moderate.	
<b>SPECIFIC GRAVITY: VAPOUR (air = 1)</b> Not applicable.	<b>EVAPORATION RATE (Butyl Acetate=1):</b> Not applicable.	<b>COEFFICIENT OF WATER/OIL DISTRIBUTION:</b> Not applicable.
<b>VAPOUR DENSITY:</b> Not applicable.	<b>% VOLATILES BY VOLUME:</b> Not available.	<b>ODOUR THRESHOLD:</b> Not available.

**APPEARANCE & ODOUR:** Semisolid: bluish-grey solid. Slurry: light grey suspension, milk-like. Odour: Semisolid: musty garlic. Slurry: slight to strong odour of ammonia.

## 10. Stability and Reactivity

<b>STABILITY:</b>	The product is stable.
<b>CONDITIONS OF CHEMICAL INSTABILITY:</b>	None known.
<b>INCOMPATIBILITY (materials to avoid):</b>	Acids, copper, silver, mercury and their salts, compounds, alloys; organic nitro-compounds; maleic anhydride; phosphorous; halogens.
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	Calcium oxide
<b>HAZARDOUS POLYMERIZATION:</b>	Will not occur.
<b>CONDITIONS OF REACTIVITY:</b>	None known.

**11. Toxicological Information**

See section 3.

Carbide lime is nontoxic; however, it may cause skin and eye irritation and burns. The irritant effects of lime are primarily due to its alkalinity, but dehydrating and thermal effects may be contributing factors.

**12. Ecological Information**

Although carbide lime is not considered a hazardous material, adequate precautions to prevent unauthorized discharge and spills or leakage into rivers, lakes, streams, sewers, or onto lands where it may adversely affect the environment or wildlife should be taken.

No adverse ecological effects expected. This product does not contain any Class I or Class II ozone-depleting chemicals. The components of this mixture are not listed as marine pollutants by TDG Regulations.

**Acute and Long-term Toxicity to Fish and Invertebrates:** TLM Mosquito Fish: 240 ppm/24 hrs; 220 ppm/48 hrs; 160 ppm/96 hrs at 21-23 C.

**13. Disposal Considerations**

**WASTE DISPOSAL METHOD:** Recovered lime can be collected and reused for many applications such as water treatment, road stabilization, and acid neutralization. When disposal becomes necessary, dispose in accordance with federal, provincial, and local regulations. Consult environmental regulatory agencies for guidance on acceptable disposal practices.

**14. Transport Information**

**TDG/IMO SHIPPING NAME:** Not applicable.

<b>HAZARD CLASS:</b>	<b>IDENTIFICATION #:</b>	<b>PRODUCT RQ:</b>
Not controlled under TDG (Canada).	Not applicable.	None.

**SHIPPING LABEL(s):**

**PLACARD (when required):**

**SPECIAL SHIPPING INFORMATION:**

Cylinders should be transported in a secure position, in a well-ventilated vehicle. Cylinders transported in an enclosed, nonventilated compartment of vehicle can present serious safety hazards.

**15. Regulatory Information**

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, provincial, and local regulations.

**DSL (Canada)** This product is on the DSL list  
**WHMIS (Canada)** CLASS E: Corrosive solid.

**International Regulations**

**EINECS** Not available.  
**DSCL (EEC)** R35- Causes severe burns.

**International Lists** No products were found.

**16. Other Information****MIXTURES:**

When two or more gases, or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist, or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

**HAZARD RATING SYSTEM:****HMIS RATINGS:**

HEALTH 1

FLAMMABILITY 0

PHYSICAL HAZARD 2

**STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA:****THREADED:** Not applicable.**PIN-INDEXED YOKE:** Not applicable.**ULTRA-HIGH-INTEGRITY CONNECTION:** Not applicable.

Use the proper CGA connections. **DO NOT USE ADAPTERS.** Additional limited-standard connections may apply. See CGA pamphlets V-1 and V-7 listed below.

Ask your supplier about free Praxair safety literature as referred to in this MSDS and on the label for this product. Further information about this product can be found in the following pamphlets published by the Compressed Gas Association, Inc. (CGA), 4221 Walney Road, 5th Floor, Chantilly, VA 20151-2923, Telephone (703) 788-2700, Fax (703) 961-1831, website: www.cganet.com.

G-1 Acetylene

G-1.5 Carbide Lime-Its Value and Uses

**PREPARATION INFORMATION:****DATE:** 10/15/2007**DEPARTMENT:** Safety and Environmental Services**TELEPHONE:** 905-803-1600

The opinions expressed herein are those of qualified experts within Praxair Canada Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Praxair Canada Inc., it is the user's obligation to determine the conditions of safe use of the product.

Praxair Canada Inc. requests the users of this product to study this Material Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify its employees, agents and contractors of the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the same product hazards and safety information.

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Product Name: Calcium Carbide Lime

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