

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Calcium Carbide Lime

CHEMICAL NAME: Calcium Hydroxide

CHEMICAL FAMILY: Metal Hydroxide

FORMULA: Ca(OH)₂

SYNONYMS: Carbide sludge, generator slurry, lime slurry, carbide lime, lime sludge, lime hydrate, calcium hydrate, hydrated lime, lime water, slaked lime.

NAME AND ADDRESS:

TELEPHONE: Emergency Phone:

Routine information call:

[USE]: Various chemical and industrial uses such as pH control, industrial water and sewage treatment, stabilization and agricultural.

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME /CAS NUMBER	PERCENTAGE	OSHA PEL	ACGIH TLV
Calcium hydroxide/1305-62-0	92.5	5 mg/m ³ (respirable)	5 mg/m ³
Calcium carbonate/1317-65-3	1.85	5 mg/m ³ (respirable)	10 mg/m ³
Silica SiO ₂ /	1.50		
Iron and Alumina Oxides/	1.60		
[LD₅₀]: 7340 mg/kg (oral - rat)	[LC₅₀]: None		

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

WARNING! May cause skin and eye irritation and burns.

POTENTIAL HEALTH EFFECTS INFORMATION:

ROUTES OF EXPOSURE:

INHALATION: Irritating to respiratory tract. Experienced as nausea, vomiting, cough, excess sputum, and chest discomfort. May cause pulmonary edema.

EYE CONTACT: Exposure may cause severe irritation, experienced as pain, excess tearing, conjunctival edema and hemorrhage, corneal edema and opacification.

SKIN CONTACT: Exposure may cause irritation, seen as redness, with possible swelling.

[SKIN ABSORPTION]: No information available.

[INGESTION]: Exposure can cause burns to mouth, throat, and digestive tract.

CHRONIC EFFECTS: No information currently available

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: Inhalation may aggravate asthma and inflammatory or fibrotic pulmonary disease. Because of its irritating properties this material may aggravate an existing dermatitis.

OTHER EFFECTS OF OVEREXPOSURE: None.

CARCINOGENICITY: Calcium hydroxide is not listed by NTP, OSHA or IARC.

4. FIRST AID MEASURES

INHALATION: Remove to fresh air. If victim is not breathing, administer artificial respiration. If breathing is difficult, administer oxygen. Obtain prompt medical attention

EYE CONTACT: Immediately flush with plenty of water and continue flushing for at least fifteen minutes. It may be necessary to physically remove solid particles with a swab. See a physician, preferably an ophthalmologist, immediately.

SKIN CONTACT: Remove contaminated clothing. Wash skin twice with soap and water. Wash clothing before reuse.

INGESTION: Give two glasses of water. Do not induce vomiting. Call a physician.

NOTES TO PHYSICIAN: Use of acidics to neutralize swallowed contents is contraindicated. Use of an EDTA (ethylenediamine tetraacetic acid) solution for rinsing the eyes may help to remove solid particles of the material and relieve some corneal opacification.

5. FIRE FIGHTING MEASURES

FLASH POINT: Not applicable

AUTOIGNITION: Not applicable

FLAMMABLE LIMITS IN AIR BY VOLUME:

LOWER: Not applicable

UPPER: Not applicable

EXTINGUISHING MEDIA: Calcium hydroxide cannot catch fire.

SPECIAL FIRE FIGHTING INSTRUCTIONS: None.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This material is a co-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 possibly 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 STATIC DISCHARGE]: Not applicable.

[SENSITIVITY TO MECHANICAL IMPACT]: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Evacuate all personnel from affected area. Use appropriate personal protective equipment when responding to spills. Keep product contained.

Small Spills: Carefully scoop or shovel into a clean dry container for disposal or recovery. For lime that has dried, avoid creating dust. Recovered lime may be collected for reuse. Small amounts may be diluted with water, and flushed to sewer if appropriate approvals are obtained.

Large Spills: Keep unnecessary people away. Isolate hazard area. Stay upwind in event of dried material present, and uphill in the event of a slurry spill. Protective clothing and equipment may be necessary to prevent exposure to lime. Personnel responding to large spills should have training in lime characteristics and spill response. Avoid creating dust if material has dried. Keep material away from waterways and sewers.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in a clean, ventilated area. Isolate incompatible materials. Post "NO SMOKING" or "NO OPEN FLAMES" signs. Accumulations of acetylene after its release from the slurry, or from unreacted carbide which continues to generate acetylene, can be ignited by any ignition source. All electrical equipment used in or around carbide lime handling or storage areas should comply with the requirements of the National Electrical Codes.

PRECAUTIONS TO BE TAKEN IN HANDLING: Consumption of food or beverages should be prohibited in the work area. Access to storage and handling areas should be limited to trained authorized, personnel only. Maintenance in carbide lime areas should only be started after the atmosphere has been checked to ensure that explosive conditions do not exist.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

VENTILATION: Use local exhaust and/or forced ventilation to reduce dust concentrations, if any, to below the exposure limit.

RESPIRATORY PROTECTION (SPECIFY TYPE):

General Use: Respiratory protection is normally not necessary with adequate ventilation. A NIOSH / MSHA approved respirator with dust cartridge should be used in dusty conditions.

Emergency Use: Same as above.

PROTECTIVE GLOVES: Leather gloves for dry material and rubber gloves for slurry.

EYE PROTECTION: All personnel working with or in the area of carbide lime should wear eye protection with side shields. In areas where splashing of lime slurry is likely to occur, chemical splash goggles and a full face shield should be worn for further protection.

OTHER PROTECTIVE EQUIPMENT: Personnel should wear long-sleeved shirts and long trousers. Clothing which may come in contact with carbide lime should be washed thoroughly before reuse. All areas where carbide lime is handled should have an approved and easily accessible eye wash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

MOLECULAR WEIGHT: 74.1

BOILING POINT (1 ATM): Disassociates at 1076° F (580° C) to form water and calcium oxide.

SPECIFIC GRAVITY (Water =1): 2.24

FREEZING POINT/MELTING POINT: 4658° F (2570°C) for calcium oxide.

VAPOR PRESSURE (AT 20° C): Not applicable

GAS DENSITY: Not applicable

EVAPORATION RATE (Butyl Acetate=1): Not applicable

SOLUBILITY IN WATER: 0.185 g/100 cc water

EXPANSION RATIO: Not applicable

[pH]: 12.454 @ 25°C (77° F)

APPEARANCE, ODOR AND STATE: Dry: White-gray soft granules or powder.
Slurry: Grayish-white thick liquid suspension in water.

Odor: Odorless, dust inhalation may be irritating. Slightly bitter, alkaline taste. There may be a slight garlic-like odor present in fresh carbide lime hydride due to minute amounts of dissolved acetylene. The odor dissipates quickly when exposed to air.

[COEFFICIENT OF WATER/OIL DISTRIBUTION]: Not applicable

[ODOR THRESHOLD]: Not applicable

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: None currently known.

INCOMPATIBILITY (Materials to Avoid): Acidic material, organic nitro compounds, maleic anhydride, phosphorus, and copper.

REACTIVITY:

A) HAZARDOUS DECOMPOSITION PRODUCTS: Calcium oxide (formed when heated above 1076° F (580°C)).

B) HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

LD₅₀: 7340 mg/kg (oral - rat)

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

[IRRITANCY OF MATERIAL]: Yes

[SENSITIZATION TO MATERIAL]: None

[REPRODUCTIVE EFFECTS]: None

[TERATOGENICITY]: None

[MUTAGENICITY]: None

[SYNERGISTIC MATERIALS]: None

12. ECOLOGICAL INFORMATION

While carbide lime may not be considered a hazardous material, adequate precautions should be taken to prevent unauthorized discharge, spills or leakage into rivers, lakes, streams, sewers, or on to lands where it may adversely affect the environment or wildlife. Due to the alkalinity of lime it may be subject to different regulations in different locations. Some local ordinances may be more restrictive than federal regulations.

Lime does not contain any Class I or Class II ozone depleting chemicals. (40 CFR 82). Lime is not listed as a marine pollutant. (49 CFR Part 171).

Acute and Long Term Toxicity to Fish and Invertebrates

TLm Mosquito Fish: 240 ppm/24 hr; 220 ppm/48 hrs; 160ppm/96 hr @ 69.8-73.4° F (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, state, and local government regulations. Consult environmental regulatory agencies for guidance on acceptable disposal practices.

14. TRANSPORT INFORMATION

DOT/IMO SHIPPING NAME: Not applicable

HAZARD CLASS: Not applicable

IDENTIFICATION NUMBER: Not applicable

[PIN]: Not applicable

PRODUCT RQ: Not applicable

SHIPPING LABEL(s): Not applicable

PLACARD (When required): Not applicable

SPECIAL SHIPPING INFORMATION: None

15. REGULATORY INFORMATION

The following information concerns selected regulatory requirements potentially applicable to this product. Not all such requirements are identified. Users of this product are responsible for their own regulatory compliance on a federal, state [provincial], and local level.

U.S. FEDERAL REGULATIONS:**EPA - ENVIRONMENTAL PROTECTION AGENCY**

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (40 CFR Parts 117 and 302):

Reportable Quantity (RQ): None

SARA: Superfund Amendment and Reauthorization Act

SECTION 302/304: Requires emergency planning on threshold planning quantities (TPQ) and release reporting based on reportable quantities (RQ) of EPA's extremely hazardous substances (40 CFR Part 355).

Extremely Hazardous Substances: None

Threshold Planning Quantity (TPQ): None

SECTIONS 311/312: Require submission of material safety data sheets (MSDSs) and chemical inventory reporting with identification of EPA defined hazard classes (40 CFR Part 370). The hazard classes for this product are:

IMMEDIATE: Yes

PRESSURE: No

DELAYED: No

REACTIVITY: No

FIRE: No

SECTION 313: Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372.

Lime does not require reporting under this section.

40 CFR PART 68: Risk Management Programs for Chemical Accidental Release Prevention. Requires the development and implementation of risk management programs at facilities that manufacture, use, store, or otherwise handle regulated substances in quantities that exceed specified thresholds.

Lime is not listed as a regulated substance.

TSCA: Toxic Substance Control Act: Lime is on the TSCA inventory.

OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

29 CFR Part 1910.119: Process Safety Management of Highly Hazardous Chemicals. Requires facilities to develop a process safety management program based on Threshold Quantities (TQ) of highly hazardous chemicals, listed on Appendix A of the standard.

Lime is not listed in Appendix A as a highly hazardous substance.

[CANADIAN REGULATIONS:]

[Controlled Product Hazard Class E. This MSDS has been prepared in compliance with Controlled Product Regulations.]

16. OTHER INFORMATION

SPECIAL PRECAUTIONS: Contaminated clothing including gloves and shoes should be removed immediately and flushed with water to remove lime residue which could cause injury to the skin. Wash clothing before reuse.

OTHER INFORMATION: Carbide lime is a water suspension of calcium hydroxide which is a co-product of a production of acetylene by means of the calcium carbide process. The slurry as produced, is approximately 11-12 weight percent solids. The weight percent solids increase on settling.

NFPA RATINGS:

HEALTH: = 1
 FLAMMABILITY: = 0
 REACTIVITY: = 0
 SPECIAL: = None

HMIS RATINGS:

HEALTH: = 1
 FLAMMABILITY: = 0
 REACTIVITY: = 0

Further information can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102. Telephone: (703) 412-0900.

G-1 Acetylene
 G-1.5 Carbide Lime - Its Value and Uses

[PREPARED BY]:

Compressed Gas Association
 1725 Jefferson Davis Highway
 Arlington, VA 22202-4102
 703 - 412 - 0900