

COLORADO LIME COMPANY
MATERIAL SAFETY DATA SHEET

MSDS Number: CLCLKD 1
Revision Date: January 10, 2011
Prepared pursuant to ANSI Standard
Z400.1-1998

1. Product and Company Identification

Product Name: Lime Kiln Dust

Synonyms: LKD

Company Identification:

Colorado Lime Company
1468 Highway 50
Delta, CO 81416
970-874-8300

Colorado Lime Company
400 E. RR St.
Salida, CO 81201
719-539-3525

2. Composition/Information on Ingredients

Component	CAS #	Exposure Limits	% by weight
Calcium Oxide	1305-78-8	OSHA PEL: 5 mg/m ³ ACGIH TLV: 2 mg/m ³	45 - 60 %
Magnesium Oxide	1309-48-4	OSHA PEL: 10 mg/m ³ ACGIH TLV: 10 mg/m ³	1.0 - 5.0 %
Silicon Dioxide	14808-60-7	OSHA PEL: 20 mg/m ³ divided By the percentage of silica in the dust plus 2 (respirable) ACGIH TLV: 0.1 mg/m ³	variable <8.0 %
Sulfur Trioxide			variable 0.0-1.0 %

OSHA Regulatory Status: This material is subject to 29 CFR 1910.1200 (Hazard Communication).

3. Hazards Identification

Emergency Overview: Lime Kiln Dust (LKD) is an odorless white or grayish-white material and is a byproduct of producing quicklime. LKD is typically a granular powder. Contact can cause irritation to eyes, skin, respiratory system, and gastrointestinal tract. LKD reacts violently with water, releasing heat which may ignite combustible materials in certain instances.

Potential Health Effects

Eyes: Contact can cause severe irritation or burning of eyes, including permanent damage.

Skin: Contact can cause severe irritation or burning of skin, especially in the presence of moisture.

Ingestion: This product can cause severe irritation or burning of gastrointestinal tract if swallowed.

Inhalation: This product can cause severe irritation of the respiratory system. Long-term exposure may cause permanent damage. LKD is not listed by MSHA, OSHA, or IARC as a carcinogen, but this product may contain trace amounts of crystalline silica in the form of quartz or cristobalite, which has been classified by IARC as (Group I) carcinogenic to humans when inhaled. Inhalation of silica can also cause a chronic lung disorder, silicosis.

Medical Conditions Aggravated by Exposure: Contact may aggravate disorders of eyes, skin, gastrointestinal tract, and respiratory system.

Potential Environmental Effects: This material is alkaline and if released into water or moist soil will cause an increase in pH.

4. First Aid Measures

Eyes: Immediately flush eyes with generous amounts of water for at least 15 minutes. Pull back the eyelid to ensure that all lime kiln dust has been washed out. Seek medical attention immediately. Do not rub eyes.

Skin: Wash exposed area with large amounts of water. Seek medical attention immediately.

Ingestion: Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth unless instructed to do so by medical personnel.

Inhalation: Move victim to fresh air. Seek medical attention if necessary. If breathing has stopped, give artificial respiration.

Note to Physicians: Provide general supportive measures and treat symptomatically.

5. Fire Fighting Measures

Fire Hazards: LKD is not combustible or flammable. LKD is not considered to be an explosion hazard, although reaction with water or other incompatible materials may rupture containers.

Hazardous Combustion Products: None.

Extinguishing Media: Use dry chemical fire extinguisher. Do not use water or halogenated compounds, except that large amounts of water may be used to deluge small quantities of LKD.

Fire Fighting Instructions: Keep personnel away from and upwind of fire. Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

6. Accidental Release Measures

Spill /Leak Procedures: Do NOT use water on bulk material spills. LKD reacts violently with water, releasing heat. Use proper protective equipment.

Small Spills: Use dry methods to collect spilled materials. Avoid generating dust. Do not clean up with compressed air. Store collected materials in dry, sealed plastic or metal containers. Residue on surfaces may be water washed.

Large Spills: Use dry methods to collect spilled materials. Evacuate area downwind of clean-up operations to minimize dust exposure. Store spilled materials in dry, sealed plastic or metal containers.

Containment: For large spills, as much as possible, avoid the generation of dusts. Prevent release to sewers or waterways.

Cleanup: Residual amounts of material can be flushed with large amounts of water. Equipment can be washed with either a mild vinegar and water solution, or detergent and water.

7. Handling and Storage

Handling: Keep in tightly closed containers. Protect containers from physical damage. Avoid direct skin contact with the material.

Storage: Store in a cool, dry, and well-ventilated location. Do not store near incompatible materials. Keep away from moisture. Moisture entering dry lkd storage vessels will result in hydration of the LKD and subsequent expansion which may rupture the containing vessel. Do not store or ship in aluminum containers.

8. Exposure Controls/Personal Protection

Engineering Controls: Provide ventilation adequate to maintain PELs.

Respiratory Protection: Use NIOSH/MSHA approved respirators if airborne concentration exceeds PEL.

Skin Protection: Use appropriate gloves to prevent skin contact. Clothing should fully cover arms and legs.

Eye Protection: Use safety glasses with side shields or safety goggles.

Other: Eye wash fountain and emergency showers are recommended.

9. Physical and Chemical Properties

Appearance: White or grayish-white material.

Odor: Odorless

Physical State: Solid

Boiling Point: 5162° F, 2850° C

Melting Point: 4658° F, 2570° C

Vapor Pressure: N/A

Vapor Density: N/A

Specific Gravity: 1.0 -1.2

Solubility in Water: Negligible, but reacts with water to produce calcium hydroxide and heat

pH at 25 degrees C: 12.45 (approximately)

10. Stability and Reactivity

Stability: Chemically stable, but reacts violently with water to form calcium hydroxide, generating heat. See also Incompatibility below.

Incompatibility/Conditions to Avoid: LKD should not be mixed or stored with the following materials, due to the potential for violent reaction and release of heat:

- WATER (unless in a controlled process)
- ACIDS
- REACTIVE FLUORIDATED COMPOUNDS
- REACTIVE BROMINATED COMPOUNDS
- REACTIVE POWERED METALS
- ORGANIC ACID ANHYDRIDES
- NITRO-ORGANIC COMPOUNDS
- REACTIVE PHOSPHOROUS COMPOUNDS
- INTERHALOGENATED COMPOUNDS

Hazardous Decomposition Products: None

Hazardous Polymerization: None

11. Toxicological Information:

No LD50/LC50 have been identified for this product's components. LKD is not listed by MSHA, OSHA, or IARC as a carcinogen, but this product may contain trace amounts of crystalline silica, which has been classified by IARC as (Group I) carcinogenic to humans when inhaled in the form of quartz or cristobalite.

12. Ecological Information:

Ecotoxicity: Because of the high pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems in high concentrations.

Environmental Fate: This material shows no bioaccumulation effect or food chain concentration toxicity.

13. Disposal Considerations:

Dispose of in accordance with all applicable federal, state, and local environmental regulations. If this product as supplied, and unmixed, becomes a waste, it will not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act.

14. Transportation Information:

When being transported by air, LKD is classified in the Department of Transportation (DOT) regulations as a hazardous material. (49 CFR 172.101). For aircraft transport only, Calcium Oxide is classified as Hazard Class 8-Corrosive, UN1910, Packing Group III. For passenger aircraft, the maximum net quantity allowed per container is 25 kg. For cargo aircraft, the maximum net quantity allowed per container is 100 kg. For quantities greater than 25 kg up to and including 100 kg, the container shall be labeled with CARGO AIRCRAFT ONLY. Because express carriers (i.e., Federal Express, Airborne Express, and United Parcel Service) ship by air, LKD presented to these carriers for shipment must be packaged, marked, and labeled in accordance with IATA requirements, and must be accompanied by the appropriate shipping documentation. Only personnel trained and certified under applicable DOT Hazardous Materials Regulations (contained in Title 49 of the Code of Federal Regulations) may prepare any LKD product for air transport.

LKD is not classified as a hazardous material by DOT when transported by means other than by air.

15. Regulatory Information:

EPA Regulations:

RCRA Hazardous Waste Number: not listed (40 CFR 261.33)

RCRA Hazardous Waste Classification (40 CFR 261): not classified

CERCLA Hazardous Substance (40 CFR 302.4) unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112

CERCLA Reportable Quantity (RQ) not listed.

SARA 311/312 Codes: not listed.

SARA Toxic Chemical (40 CFR 372.65): not listed.

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed, Threshold Planning Quantity (TPQ): not listed.

All chemical ingredients are listed on the USEPA TSCA Inventory List.

OSHA/MSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): 5 mg/M³ TWA-8

MSHA: not listed.

OSHA Specifically Regulated Substance (29CFR 1910) not listed.

State Regulations: Consult state and local authorities for guidance.

16. Other Information:

HMIS: Health Risks 3, Flammability 0, Reactivity 1, Personal Protection, E

NFPA: Health Hazard 3, Fire Hazard 0, Reactivity 1

The above MSDS complies with MSHA'S Hazard Communication Standard 30 CFR, Part 47 and OSHA's Hazard Communication standard 29 CFR 1910.1200 and OSHA form 174. We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied.