

# MISSISSIPPI LIME COMPANY - SAFETY DATA SHEET





## Section 1: Identification

### Calcium Oxide - CaO

<b>Product Line</b>	MicroCal – OF100, OF200, OF325, OFT15; PolyCal – OFT15, OF325, OS325; PetroCal - OF100, OS100; Standard Quicklime – Granular, ½", 1", 2", 2X1, Pulverized, Flow Treated, CG; VitaCal O
<b>Product Uses</b>	Steel industry, Chemical industry, Environmental applications (e.g. flue gas treatment, waste water treatment, pH adjustment, sludge treatment), Drinking water treatment, Soil stabilization, Specialty products.
<b>Manufacturer</b>	Mississippi Lime Company 16147 US Highway 61, Ste Genevieve, MO 63670

**24 Hour Emergency Contact Number: (800) 437-5463**

## Section 2: Hazard(s) Identification

Signal Word	<b>DANGER !</b>							
<div><div></div><div></div><div></div><div><div>NFPA</div><div></div></div><div><div>HMIS</div><div><table><tr><td>HEALTH - 3</td></tr><tr><td>FLAMMABILITY - 0</td></tr><tr><td>PHYSICAL HAZ - 1</td></tr><tr><td>PER. PROTECTION- E</td></tr></table></div></div></div>					HEALTH - 3	FLAMMABILITY - 0	PHYSICAL HAZ - 1	PER. PROTECTION- E
HEALTH - 3								
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DESCRIPTION	<b>HARMFUL IF SWALLOWED OR INHALED. CAUSES BURNS TO SKIN AND EYES. CAUSES SEVERE IRRITATION TO RESPIRATORY TRACT.</b>							
Hazard	H 315: Causes skin irritation. H 318: Causes serious eye damage. H 335: May cause respiratory irritation							
Precautionary Statements	<u><b>PREVENTION</b></u> P 102: Keep out of reach of children. P 261: Avoid breathing dust. P 280: Wear protective gloves/protective clothing/eye protection/face protection. P 402: Store in dry place. P 501: Dispose of contents/container in accordance with ...regulations. <u><b>RESPONSE</b></u> P 302 + P 352: IF ON SKIN: Wash with plenty of soap and water. P 304 + P 340: IF INHALED: Remove victim to fresh air and keep at rest and comfortable. P 305 + P 351: IF IN EYES: Rinse cautiously with water for several minutes. P 305 + P 337 + P 313: IF IN EYES: If eye irritation persists, Get medical advice/attention P 301 + P 330 + P 331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.							
WHMIS	Products containing Crystalline Silica are Class D2B - Toxic, and containing Calcium Oxide are Class E - Corrosive.							
ECHA	Classification of substance (Regulation (EC) No 1272/2008): Skin Corrosion/Irritation (Category 1C); Serious eye damage/Irritation (Category 1)							
OTHER	In contrast to the dry form itself, calcium oxide, when diluted with water, will release heat and cause severe skin and eye damage (alkaline burns) with prolonged contact. Exothermic heat released can ignite combustible paper and rubber.							

## Section 3: Composition/Information on Ingredients

Ingredient	CAS ID	EC ID	Concentration
Calcium Oxide - CaO	01305-78-8	215-138-9	93.0 to 98.5%
Calcium Carbonate	00471-34-1	207-439-9	0.30 to 4.0 %
Calcium Sulfate	07778-18-9	231-900-3	0.04 to 0.5%
Magnesium Oxide	01309-48-4	215-171-9	0.53 to 4.0%
Crystalline Silica (SiO2)	14808-60-7	238-878-4	<0.10 to 2.0%

**Crystalline silica has been identified in some products at or above detection level ( <0.1% ). Product quality variability dependent upon the stone source and calcining process.**

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## Section 4: First-Aid Measures

<b>Eye Contact</b>	Irritation - Irrigate eyes with water immediately for at least 15 minutes. Consult a doctor.
<b>Skin Contact</b>	Irritation - Wash affected area with water. Change out of contaminated clothing when practical.
<b>Ingestion</b>	Wash mouth and drink copious quantities of water. Do not induce vomiting. Consult a doctor.
<b>Inhalation</b>	Irritation - Move victim to fresh air and treat for discomfort. Consult a doctor if difficult breathing.
<b>Medical</b>	Treat symptomatically. Consult physician except for minor exposure.

## Section 5: Fire-Fighting Measures

<b>Flammability</b>	Nonflammable and noncombustible.
<b>Extinguishing Media</b>	Use dry powder, foam or CO2 extinguishers to fight surrounding fire.
<b>Special hazards</b>	Water will react with lime releasing exothermic heat.
<b>Advice for fire-fighters</b>	Wear appropriate personal protective equipment.

## Section 6: Accidental Release Measures

<b>Precautions</b>	Avoid contact with skin and eyes and keep dust levels to a minimum. Ensure adequate ventilation and/or suitable respiratory protective equipment (Section 8).
<b>Environmental</b>	Control and minimize releases to watercourses and storm drains. Notify Environmental agencies of significant spillage into water.
<b>Containment</b>	Contain spillage and keep material dry and covered if possible to minimize dust hazard.
<b>Clean-up</b>	Keep material dry if possible. Use vacuum systems, if available, and/or broom and shovel. Use salvage drums for dry and wet collection.
<b>Disposal</b>	Check Federal State and Local restrictions or recycle and reuse for beneficial applications.

## Section 7: Handling and Storage

<b>Precautions for Safe Handling</b>	Avoid excessive dust in work area and ensure adequate ventilation. Use dust mask when appropriate. Avoid contact with skin and eyes. Use appropriate eye protection. Avoid extended contact with skin and clothing. Avoid ingestion and contact with food.
<b>Precautions for Safe Storage</b>	Keep product dry and bags and containers stored in dry and well-ventilated location place. Store bulk in dry properly designed bins and silos. Keep out of reach of children. Calcium oxide will react with water and strong acids. Keep away from nitro compounds and contact with paper and straw.

## Section 8: Exposure Control / Personal Protection

Ingredient	CAS	Concentration	Exposure Limit (mg/m)			
<b>Calcium Oxide CaO</b>	1305-78-8	98-100%	OSHA PEL (TWA) 8/40h	ACGIH TLV (TWA) 8/40h	MSHA/PEL (TWA) 8/40h	NIOSH REL (TWA) 10/40H
			5 T / 2 R	2	5	2
<b>Crystalline Silica SiO2</b>	14808-60-7	0 - 0.1% or 0.1 - 0.5%	T= 30(%SiO2)+2 R=10/(%SiO2)+2	R = 0.025	T= 30 (%SiO2)+2 R=10 / (%SiO2)+2	R = 0.05

Crystalline silica has been identified in some products at or above detection level ( <0.1% ). Variability is dependent upon the stone source and calcining process. Two ranges are disclosed for Total Dust (T) & Respirable Dust (R).

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## Section 8: Exposure Control / Personal Protection (continued)

Derived No Effect Lvl (DNEL):		Predict No Effect Con (PNEC):	Biological Limit
No information available		No information available	Not established by ACGIH or manufacturer
<b>Engineering Control Measures</b>	<b>Ventilation</b> - Ensure adequate ventilation in workplace - especially in confined areas. Evaluate degree of exposure and apply appropriate PPE as necessary.		
	<b>Dust Control</b> - Use exhaust ventilation (dust collector) or other engineering controls at handling points to keep airborne levels below recommended exposure limits and/or wear personal protective equipment.		
	<b>Eye Wash</b> - Keep emergency eye wash supplies at the workplace.		
<b>Personal Protective Equipment</b>	<b>Eye Protection</b> - ANSI, CSA or ATM approved glasses with side-shields. Tight fitting dust goggles should be worn when excessive (visible ) emissions are present. Do not wear contact lenses without tight fitting goggles when handling this product.		
	<b>Hand Protection</b> - Wear dry protective gloves and apply barrier cream as required.		
	<b>Skin Protection</b> - Cover skin to minimize direct contact.		
	<b>Footwear</b> - Boots resistant to alkaline material. Prevent dust penetration into socks and boots.		
	<b>Respiratory Protection</b> - Follow OSHA respirator guidelines found in 29 CFR 1910.134 or European Standard EN 149. Use NIOSH/MSHA or European Standard EN 149 approved respirators if exposure threshold limits are exceeded or irritation is experienced.		
<b>Hygiene</b>	Handle product in accordance with good industrial hygiene and safety practice. Wear clean, dry personal protective equipment. Barrier cream will reduce dryness and irritation. Heavily exposed workers should shower immediately and apply barrier cream to neck, face and wrists.		
<b>Environmental</b>	Ventilation systems should be filtered before discharge to atmosphere.		

## Section 9: Physical and Chemical Properties

<b><u>Physical State</u></b>	<b><u>Formula</u></b>	<b><u>Color</u></b>	<b><u>Stability</u></b>	<b><u>Flammability</u></b>	<b><u>Explosivity</u></b>	<b><u>Flash Pt</u></b>
Solid /Powder	CaO	Off- white	Stable	Non-flammable	Non-explosive	Non-Combustible
<b><u>Solubility(H<sub>2</sub>O)</u></b>	<b><u>Volatiles</u></b>	<b><u>Density</u></b>	<b><u>Bulk Density</u></b>	<b><u>Specific Gravity</u></b>	<b><u>Vapor Press</u></b>	<b><u>Boiling Pt.</u></b>
1650mg/L 20C	0%	700-1300 kg/m <sup>3</sup>	720-1200 kg/m <sup>3</sup>	3.2-3.4 g/cm <sup>3</sup>	Non-volatile	Not Applicable
<b><u>Freezing Point</u></b>	<b><u>pH @ (25C)</u></b>	<b><u>Melting Pt.</u></b>	<b><u>Self Ignition T</u></b>	<b><u>Dust Defrag Kst</u></b>	<b><u>Vapor Density</u></b>	<b><u>Viscosity</u></b>
Not Applicable	12.45	2570-2625 C	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b><u>Partition CoeF</u></b>	<b><u>Odor</u></b>	<b><u>Odor Threshold</u></b>	<b><u>Decomposition</u></b>	<b><u>Evap Rate</u></b>	<b><u>Additives</u></b>	<b><u>Reactivity</u></b>
Not Applicable	Odorless	Not Applicable	540 °C 1076 °F	Not Applicable	None	Yes

## Section 10: Stability and Reactivity

<b>Reactivity</b>	Reacts with water and strong acids to form calcium based compounds and release heat. Explosive when mixed with nitro organic compounds.
<b>Stability</b>	Moisture and air sensitive
<b>Hazardous</b>	Exothermic reaction to water
<b>Incompatibility</b>	Water, strong acids, phosphorus, malefic anhydride, nitro methane, nitro ethane, nitro-paraffins, nitro propane, boron tri-fluoride, chlorine tri-fluoride, ethanol, fluorine, hydrogen fluoride, phosphorous pent oxide some metals, CO <sub>2</sub> .
<b>Decomposition</b>	Decomposition products include nonhazardous calcium hydroxide and calcium carbonate

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## Section 11: Toxicological Information

<b>Acute</b>	Routes of Entry - Skin Contact, Eye Contact, Acute Inhalation, Ingestion
<b>Skin</b>	Potentially hazardous. Causes severe irritation of mucous membranes and wet skin. The extent of damage depends on amount and duration of contact. Long sleeve clothing and gloves recommended.
<b>Eyes</b>	Extremely hazardous in eye contact (corrosive/irritant). Possible lesions and blindness if untreated for prolonged period.. Wear appropriate eye protection and avoid wearing contact lenses - Eye irritation Standard Draize (Rabbit) - 10 mg/24 hr - Severe; investigated as a mutagen .
<b>Inhalation</b>	Symptoms - Nose, oral cavity and throat irritation, coughing and sneezing, and inflammation of breathing passages, ulceration and perforation of nasal septum, bronchitis, possible pneumonia. The extent of damage depends on amount inhaled. Wear appropriate dust mask
<b>Ingestion</b>	Intense burning and edema of digestive tract, abundant salivation, difficulties in swallowing and breathing, vomiting blood, drop in blood pressure and possible perforation of esophagus or stomach irritation and pain, vomiting, diarrhea, drop in blood pressure. Extent of damage depends on amount ingested. Rat LD50 Oral >500 mg/kg
<b>Sensitization</b>	No sensitizing effects known.
<b>Chronic</b>	Contact dermatitis.
<b>Carcinogenicity</b>	Calcium oxide is not listed as a carcinogen by ACGIH, MSHA, OSHA, NTP, DFG, RSST or IARC; however this product may contain trace amounts of Crystalline Silica listed by those agencies as a known, potential or suspected carcinogen.

## Section 12: Ecological Information

Toxicity - Freshwater Fish - LC 50 (96 hours) 1070 mg/L
Persistence and degradability - No information available.
Ecological information - Not relevant information available.
Bio accumulative potential - Material not expected to significantly bioaccumulation.
Mobility in soil - No information available.
PBT and vPvB assessment - No information available.
Additional information - Product generally not hazardous for water. Frequently used for public water supply treatment.

## Section 13: Disposal Considerations

Recover uncontaminated product where possible and reutilize or recycle for other beneficial purposes.
Do not dispose of unused products as a solid waste unless fully reacted. Bags containing quicklime residue may ignite if stored in wet confined storage bins or dumpsters.
Dispose of waste lime in onsite lime pits, dump areas and allow to react (slake or hydrate). Transfer to approved landfills for disposal as "special waste" in accordance with Federal, state and local requirements.
Processing, use or contamination of this product may change the waste profile characteristics and waste management options. Although not a listed RCRA hazardous waste, calcium oxide may exhibit high alkalinity and require refined analysis to determine specific disposal requirements.

## Section 14: Transport / Shipping Information

Calcium Oxide is classified as non-hazardous for ground transportation by the US Department of Transportation (172.101(b)(2); ADR, AND RID; however Air restrictions APPLY.	
UN Number - <b>1910</b>	UN Proper Shipping Name - <b>Calcium Oxide</b>
DOT Hazard Class - <b>8</b>	Packing Group Number - <b>III</b>
International Marine Dangerous Goods (IMDG) - <b>Not Subject</b>	IATA - <b>Subject to Restrictions 25 kg/package</b>
Regulations governing the carriage of chemicals by ship are contained in the International Convention for the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Marine Pollution from Ships, as modified by the Protocol of 1978 relating thereto ( <u>MARPOL 73/78</u> ).	

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## Section 15: Regulatory Information

<b>TSCA/DSL</b>	Toxic Substance Control Act, Canada DSL and most International Chemical Inventories - <b>Listed</b>
<b>SARA 302/304</b>	Emergency Planning and Release Notification - <b>Not Listed</b>
<b>SARA 311</b>	Hazard Categories (40 CFR 370) - Regulated under OSHA HazCom - <b>Acute &amp; Chronic</b>
<b>SARA 312</b>	Emergency Planning and Release Notification - <b>Not Listed</b>
<b>SARA 313</b>	Toxic Release Inventory (TRI) Chemical List - <b>No reporting requirement</b>
<b>CERCLA</b>	Hazardous Substances (Table 302.4) - <b>Not Listed</b>
<b>ANSI / NSF60</b>	Approved of direct contact with drinking water.
<b>RCRA</b>	Hazardous Waste Number and Classification - <b>Not Listed or Classified</b>
<b>WASTE</b>	Generally accepted at landfills as a "special waste" if fully reacted. Product can often be beneficially reused or recycled for other purposes. Lime may be classed as hazardous waste in some states.
<b>CONEG</b>	Council of NE Governors - Materials and inks used to manufacture packaging - <b>Compliant</b>
<b>CWA 311</b>	CWA list of hazardous substances- <b>Not Listed</b> . Contains alkaline material potentially toxic to aquatic life at high concentrations.
<b>SPILLS</b>	Sweep up dry spillage where possible to minimize flushing
<b>FDA</b>	Calcium oxide is generally recognized as safe (GRAS) - ( 21 CFR 184.1205)
<b>PROP 65</b>	Subject to California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) warning and labeling requirements due to detection of listed trace metals & silica "known to the State of California to cause cancer."
<b>NAFTA</b>	Product classified under HS Tariff No 2522.10; Preference Criteria A; 100% US Origin
<b>EU REACH</b>	Pre-registered under # 5-2116 374 516-39-0000 - EINECS# 215-138-9

## Section 16: Other Information / Disclaimer

Mississippi Lime Company provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular application or purpose.

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