SAFETY DATA SHEET QUICKLIME

SECTION 1. IDENTIFICATION

Product Name	Quicklime
Synonyms	HiCal Quicklime, Hot Lime, Lime, Pebble Lime, Lime Fines, Rice Lime, Cal 85, Hi Cal Quicklime - Small Pebble, Hi Cal Quicklime Fines, Hot Lime, Quicklime Fines
Recommended Uses	Water treatment, caustic agent, pH adjustment, acid gas absorption, construction
Distributor	**Mintek Resources** 3725 Pentagon Blvd. Suite 100 Beavercreek, OH 45431 Phone: 937-431-0218
Emergency Contact	**VelocityEHS: (800) 255-3924** (MIS8507735)

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Physical Hazards

None

Health Hazards

Skin Irritation	Category 2
Eye Damage	Category 1
Carcinogenicity	Category 1A
Specific Target Organ Toxicity – Single Exposure	Category 3
Specific Target Organ Toxicity – Repeated Exposure	Category 1

GHS Label Elements

Signal Word

Danger

Hazard Statements

Causes serious eye damage.
May cause respiratory irritation. May cause cancer through inhalation.
Causes damage to lungs through prolonged or repeated exposure by inhalation.
Reacts violently with water, releasing heat which can ignite combustible materials.

Precautionary Statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep container tightly closed Do not breathe dust.
Wash thoroughly after handling.
Do not eat, drink, or smoke when using this product.
Use only outdoors or in well-ventilated area.
Wear protective gloves, clothing and eye protection
Do not use water on material spills.

Pictograms

SECTION 3. COMPOSITION

Chemical name	% by weight	CAS#
Calcium Oxide	>89	1305-788
Magnesium Oxide	< 4	1309-48-4
Silica-Crystalline Quartz	0.1 - 2	14808-60-7

SECTION 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 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

Most Important Symptoms Irritation of skin, eyes, gastrointestinal tract, or respiratory tract.

Immediate Medical Attention /Special Treatment? See first aid information above. Note to Physicians: Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

Suitable (and Unsuitable) Fire 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 this product.

Specific Hazards Arising from the Product Inhalation, skin, or eye contact can result in serious injury. This product is not combustible or flammable. However, this product reacts violently with water, and can release heat sufficient to ignite combustible materials. This product is not considered to be an explosion hazard, although reaction with water or other incompatible materials may rupture containers. When this product is wet, it can be very slippery and can result in a slip hazard. Hazardous Combustion Products: None.

Special Protective Equipment and Precautions for Fire Fighters Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA) to prevent inhalation, skin, or eye contact.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, Emergency Procedures

Avoid inhalation, eye, and skin contact. Avoid generating airborne dust. Wear appropriate protective clothing as described in section 8.

Methods and Materials for Containment and Clean Up

Utilize cleanup methods that minimize generating dust: vacuum. Avoid dry sweeping. Do not use water on large spills, as this product reacts violently with water and releases heat. Residue on surfaces may be removed with copious amount of water or vinegar.

SECTION 7. HANDLING & STORAGE

Safe Handling

Avoid inhalation, skin and eye contact. Avoid generating airborne dust. An eye wash station should be readily available when this product is handled.

Safe Storage

Keep in tightly closed containers. Protect containers from physical damage. Store in a cool, dry, and well-ventilated location. Do not store near incompatible materials (see Section 10 below). Keep away from moisture. Long-term storage in aluminum containers is not recommended, as calcium oxide may corrode aluminum over long periods of time

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

	OSHA PEL (mg/m^3)	ACGIH TLV (mg/m^3)	Ont. Reg. 833 TWAEV (mg/m^3)
Calcium Oxide	5	2	2
Magnesium Oxide	15	10	10
Silica - Crystalline Quartz	30 / (% silica +2) (total) 10 / (% silica +2) (respirable)	0.025 (respirable)	0.1

Engineering Controls

Use with adequate general or local exhaust ventilation and to maintain exposure below occupational exposure limits.

Individual Protection Measures (Personal Protective Equipment):

Specific Eye / Face Protection

Safety glasses with side shields. In windy conditions, or if work activity generates elevated airborne dust levels, dust proof or chemical goggles are recommended. Contact lenses should not be worn.

Specific Skin Protection

When there is a risk of skin contact, wear appropriate clothing and gloves to prevent contact.

Specific Respiratory Protection

If exposure limits are exceeded, an approved particulate respirator, or supplied air respirator, appropriate for the airborne concentrations, should be used. Selection and use of the respiratory protective equipment must be in accordance with applicable regulations and good industrial hygiene practices.

Other

An emergency eye wash fountain and shower are recommended.

SECTION 9. PHYSICAL & CHEMICAL PROPERTIES

Appearance	White or grayish white material
Odor	Odorless
Odor Threshold	Not Applicable
pH at 25°C	12.45

Melting Point	4658°F (2570°C)
Boiling Point and Range	5162°F (2850°C)
Flash Point	Not Applicable
Evaporation Rate	Not Applicable
Flammability	Not Applicable
Upper/Lower Flammability or Explosive Limits	Not Applicable
Vapor Pressure/Density	Non-Volatile
Relative Density	3.2 – 3.4
Solubility	Negligible in water but reacts with water to produce $Ca(OH)_2$ and heat Soluble in acids, glycerin, and sugar solutions
Partition Coefficient: N-Octanol/Water	Not Applicable
Auto-Ignition Temperature	Not Available
Decomposition Temperature	Not Available
Viscosity	Not Applicable

SECTION 10. STABILITY & REACTIVITY

Reactivity	Reacts violently with water to form calcium hydroxide, releasing heat. Reacts with acids to form calcium salts, releasing heat. Reacts with carbon dioxide in air to form calcium carbonate. See also Incompatibility below.
Chemical Stability	Stable under normal storage and handling conditions.
Possibility of Hazardous Reactions	See "reactivity" above.
Conditions to Avoid	Vicinity of incompatible materials.
Incompatibility	This product 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 powdered metals • reactive phosphorous compounds • aluminum powder • organic acid anhydrides • nitro-organic compounds • interhalogenated compounds
Hazardous Decomposition Products	None

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure & Symptoms:

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.
Chronic Health Effects	This product contains trace amounts of crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica can cause silicosis, as serious lung disease.
Respiratory or Skin Sensitization	This material is not known to cause sensitization
Germ Cell Mutagenicity	No data available.
Carcinogenicity	This product is not listed as carcinogenic by OSHA, IARC, NTP, ACGIH, or the EU Directives. This product may contain trace amounts of crystalline silica quartz which is listed by IARC as "Carcinogenic to Humans" (Group 1) and "Known to be a Human Carcinogen" by NTP (National Toxicology Program).
Reproductive Toxicity	No Data Available
Numerical Measures of Toxicity	Crystalline Silica: Oral (rat) LD_{50} > 22,500 mg/kg Calcium oxide: Oral (rat) LD_{50}: 3059 mg/kg

SECTION 12. ECOLOGICAL INFORMATION

Because of the elevated pH of this product, it might be expected to produce some ecotoxicity upon exposure to certain aquatic organisms and aquatic systems in high concentrations.
This material shows no bioaccumulation effect or food chain concentration toxicity.

SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of contents in accordance with federal, state, provincial and local regulations.

SECTION 14. TRANSPORT INFORMATION

UN Number	UN1910
UN Proper Shipping Name	Calcium Oxide
Transport Hazard class(es)	When transported by air only: Hazard Class 8-Corrosive
Packing Group	When transported by air only: Packing Group III
Environmental Hazards	This material is alkaline and if released into water or moist soil will cause an increase in pH

Transport in Bulk (According to Annex II of MARPOL 73/79 and the IBC Code:

Special Precautions Which a User Needs to be Aware of	When being transported by air, quicklime 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, quicklime 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 quicklime product for air transport. Quicklime is not classified as a hazardous material by DOT when transported by means other than by air.

SECTION 15. REGULATORY INFORMATION

CERCLA Hazardous Substances	Not Listed
SARA Toxic Chemical (40 CFR 372.65)	Not Listed
SARA Section 302 Extremely Hazardous Substances (40 CFR 355)	Not Listed
SARA 311/312	Not Listed
SARA Section 313 Toxic Chemicals Reporting Requirements	None
Threshold Planning Quantity (TPQ)	Not Listed
RCRA Hazardous Waste Classification (40 CFR 261)	Not Classified
EPA Toxic Substances Control Act (TSCA) Status	All of the components of this product are listed on the TSCA
California Proposition 65	Airborne crystalline silica particulates of respirable size are known to the State of California to cause cancer.
NFPA Ratings	Health: 3 Fire: 0 Reactivity: 2 ₩
HMIS Ratings	Health: 3 Fire: 0 Reactivity: 2 Personal protection: E
OSHA Specifically Regulated Substance (29 CFR 1910)	Not Listed
OSHA Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A)	Listed
MSHA	Not Listed
Canada DSL	Listed
Canadian WHMIS Classification	D2A, Materials Causing other toxic effects. E, Corrosive Material 
Canada CPR	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation of a Canada and this SDS contains all the required information.

SECTION 16. OTHER INFORMATION

List of GHS Hazard Statements	H315: Causes skin irritation. H318: Causes serious eye damage. H335: May cause respiratory irritation. H350: May cause cancer through inhalation. H372: Causes damage to lungs through prolonged or repeated exposure by inhalation.
List of GHS Precautionary Statements	P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P233: Keep container tightly closed. P260: Do not breathe dust. P264: Wash thoroughly after handling. P270: Do not eat, drink, or smoke when using this product. P271: Use only outdoors or in well-ventilated area. P280: Wear protective gloves, clothing, and eye protection

Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	**RCRA**	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act	**IARC**	International Agency for Research on Cancer
NTP	National Toxicology Program		

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