Conforms to HazCom 2012/United States

Safety Data Sheet Quicklime

Section 1. Identification

GHS product identifier: Quicklime

Other means of identification: Lime, agricultural lime, burnt lime, burnt limestone, calcium oxide

Relevant identified uses of the substance or mixture and uses advised against: Quicklime may be used in the manufacture of steel, sugar, paper and other materials. Quicklime may be distributed in enclosed bags and totes. No known recommended restrictions.

Supplier's details:

New Global Trading (NGT)
76, Duy Tan Street, Cau Giay,
Hanoi, Vietnam - 10000

Emergency telephone number (24 hours): **NGT: +84 2432 009 257**

Section 2. Hazards Identification

GHS Classification:

CARCINOGENICITY – Category 1A
SPECIFIC TARGET ORGAN TOXICITY – Category 1/3
REPEATED EXPOSURE / SINGLE EXPOSURE
SKIN CORROSION/IRRITATION – Category 2
EYE DAMAGE/IRRITATION – Category 1

GHS label elements

Hazard pictograms:

Signal word: Danger

Hazard statements:
May cause cancer
May cause damage to organs (lung) through prolonged or repeated exposure
Causes skin irritation
Causes serious eye irritation

Precautionary statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.

Response: If exposed or concerned: Get medical advice/attention. If small amount on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.

Storage: Keep Container tightly closed.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazards not otherwise classified (HNOC): None known

Supplemental Information: Do not use water on material spills

Section 3. Composition/information on ingredients

CAS number/other identifiers

Substance/mixture: Calcium Oxide, Magnesium Oxide, Quartz

Ingredient name	%	CAS number
Calcium Oxide	> 90	1305-78-8
Magnesium Oxide	< 2	1309-48-4
Crystalline Silica (Quartz)	< 0.1 - 2	14808-60-7

Any concentration shown as a range is to protect confidentiality or is due to process variation. There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. These materials are mined from the earth. Trace amounts of naturally occurring elements might be detected during chemical analysis of these materials.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. Hold eyelids apart. Remove contacts is present and easy to do. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Get medical attention if irritation develops or persists.

Inhalation: Move to fresh air. Call a physician if symptoms develop or persist.

Skin Contact: Wash off with soap and water. Get medical attention if irritation develops and persists.

Ingestion: Rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms/effects, acute and delayed

Inhaling dust may cause discomfort in the chest, shortness of breath, and coughing. Prolonged inhalation may cause chronic health effects. This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica liberated from this product can cause silicosis, and may cause cancer.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

Specific treatments: Not Applicable

Protection of first-aiders: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

General information: Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). If addicted to tobacco, smoking will impair the ability of the lungs to clear themselves of dust.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable / Unsuitable 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 chemical: 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 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 and emergency procedures

Wear appropriate protective equipment and clothing during clean-up of materials that contain or may liberate dust.

Methods and materials for containment, cleaning up and Environmental precautions

Spilled material, where dust is generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust. Do not dry sweep or use compressed air for clean-up. Wetting of spilled material and/or use of respiratory protective equipment may be necessary.
Avoid discharge of fine particulate matter into drains or water courses.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment.

Advice on general occupational hygiene: Observe good industrial hygiene practices. Promptly remove dusty clothing and launder before reuse.

Conditions for safe storage, including any incompatibilities: 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

Control parameters

Occupational exposure limits:
1 – Value equivalent to OSHA formulas (29 CFR 1910.1000; 29 CFR 1917; 29 CFR 1918)
2 – Value also applies to MSHA metal/Non-Metal (1973 TLVs at 30 CFR 56/57.5001)
3 – OSHA enforces 0.250 mg/m³ in construction and shipyards (CPL-03-00-007)
4 – Value also applies to OSHA construction (29 CRF 1926.55 Appendix A) and shipyards (29 CFR 1915.1000 Table Z)
5 – MSHA limit = 10 mg/m³

Ingredient name	Exposure limits
Calcium Oxide (CAS 1305-78-78)	**ACGIH TLV (United States, 3/2012)** TWA: 2 mg/m³. Form: Respirable particles (2) **OSHA PEL (United States, 6/2010)** TWA: 5 mg/m³. Form: Respirable (1,2,3)
Magneisum Oxide (CAS 1309-48-4)	**ACGIH TLV (United States, 3/2012)** TWA: 10 mg/m³. Form: Respirable particles (2) **OSHA PEL (United States, 6/2010)** TWA: 15 mg/m³. Form: Respirable (1,2,3)
Crystalline Silica (Quartz) (CAS 14808-60-7)	**OSHA PEL (United States, 9/2017)** TWA: 0.05 mg/m³. Form: Respirable (1,2,3) **ACGIH TLV (United States, 3/2012)** TWA: 0.025 mg/m³. Form: Respirable fraction

Appropriate engineering controls: Good general ventilation (typically 10 air changes per hour indoors) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Exposure guidelines: OSHA PELs, MSHA PELs, and ACGIH TLVs are 8-hr TWA values. NIOSH RELs are for TWA exposures up to 10-hr/day and 40-hr/wk. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Terms including "Particulates Not Otherwise Classified," "Particulates Not Otherwise Regulated," Particulates Not Otherwise Specified," and "Inert or Nuisance Due" are often used interchangeably; however, the user should review each agency's terminology for differences in meanings.

Biological limit values: No biological exposure limits noted for the ingredient(s)

Individual protection measures

Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
Eye/face protection: Wear safety glasses with side shields (or goggles).
Hand protection: Use personal protective equipment as required.
Body protection: Use personal protective equipment as required.
Other skin protection: Use personal protective equipment as required.
Respiratory protection: When handling or performing work that produces dust or respirable crystalline silica in excess of

	applicable exposure limits, wear a NIOSH-approved respirator that is properly fitted and is in good condition. Respirators must be used in accordance with all applicable workplace regulations.
Thermal hazards:	Not anticipated. Wear appropriate thermal protective clothing if necessary.

Section 9. Physical and chemical properties

Appearance

Physical State:	Solid, particles of granular and angular mixture	**Lower and Upper explosive flammable limits**	Not applicable
Color:	Grayish White & White.	**Vapor pressure:**	Not applicable
Odor:	Odorless	**Vapor density:**	Not applicable
Odor threshold:	Not applicable	**Relative density:**	3.2 - 3.4
pH:	12.45	**Solubility:**	acids, glycerin.
Melting point:	2570°C	**Solubility in water:**	Neglibile
Boiling point:	2850°C	**Partition coefficient: n-octanol/water:**	Not applicable
Flash point:	Not applicable	**Auto-ignition temperature:**	Not applicable
Burning time:	Not applicable	**Decomposition temperature:**	Not applicable
Burning rate:	Not applicable	**SADT:**	Not available
Evaporation Rate:	Not applicable	**Viscosity:**	Not applicable
Flammability (solid, gas):	Not applicable		

Section 10. Stability and 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.
Chemical Stability:	No dangerous reaction known under conditions of normal use.
Possibility of hazardous reactions:	See "Reactivity" above
Conditions to avoid:	Water, acids, reactive fluoro, bromo and phosphorus compounds, aluminum powder, organic acid anhydrides, nitro-organic compoundsinterhalogenated compounds.
Incompatible materials:	
Hazardous decomposition products:	None

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity:	Not expected to be acutely toxic.
Irritation/Corrosion:	**Skin:** Contact can cause severe irritation or burning of skin, especially in the presence of moisture **Eyes:** Contact can cause severe irritation or burning of eyes, including permanent damage. **Inhalation:** Repeated inhalation of respirable crystalline silica (quartz) may cause silicosis, a fibrosis (scarring) of the lungs. Silicosis is irreversible and may be fatal. Silicosis increases the risk of contracting pulmonary tuberculosis. Some studies suggest that repeated inhalation of respirable crystalline silica may cause other adverse health effects including lung and kidney cancer. **Ingestion:** This product can cause severe irritation or burning of gastrointestinal tract if swallowed.
Sensitization:	**Respiratory sensitization:** No respiratory sensitizing effects known. **Skin sensitization:** Not known to be a dermal irritant or sensitizer.
Mutagenicity:	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Aspiration Hazard:	Not expected to be an aspiration hazard.
Reproductive toxicity:	Not expected to be a reproductive hazard.
Symptoms related to physical, chemical and toxicological characteristics:	Dust: discomfort in the chest. Shortness of breath. Coughing.
	None
Carcinogenicity:	Respirable crystalline silica has been classified by IARC and NTP as a known human carcinogen, and classified by ACGIH as a suspected human carcinogen.

Product/ingredient name	OSHA	IARC	ACGIH	NTP
Crystalline Silica (Quartz) CAS 14808-60-7)	Not listed	1 Carcinogenic to humans	A2	Known to be human Carcinogen

Specific target organ toxicity (acute exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)	-	Inhalation	Not reported to have effects

Specific target organ toxicity (chronic exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)		Inhalation	May cause damage to organs (lung through prolonged or repeated exposure.
Respirable Tridymite and Cristobalite (Other forms of Crystalline) (CAS Mixture)		Inhalation	May cause damage to organs (lung through prolonged or repeated exposure.

Potential chronic health effects: General: Prolonged inhalation of respirable crystalline silica may be harmful. May cause damage to organs (lungs) through prolonged or repeated exposure. There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and the thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Section 12. Ecological Information

Ecotoxicity

Not expected to be harmful to aquatic organisms. Discharging sand and gravel dust and fines into waters may increase total suspended particulate (TSP) levels that can be harmful to certain aquatic organisms.

Persistence and degradability: Not applicable.
Bioaccumulative potential: Not applicable.
Mobility in soil: Not applicable.
Other adverse effects: No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, global warming potential) are expected from this component.

Section 13. Disposal considerations

Disposal methods: Do not allow fine particulate matter to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with fine particulates. Dispose of contents in accordance with local/regional/national/international regulations.

Hazardous waste code: Not regulated.

Waste from residues/unused products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging: Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty packaging materials should be recycled or disposed of in accordance with applicable regulations and practices.

Section 14. Transportation information

	DOT Classification	IMDG	IATA
UN number	UN1910	UN1910	UN1910
UN proper shipping name	Calcium Oxide	-	-
Transport hazard class(es)	Air:Hazard Class 8-Corrosive	-	-
Packing group	Air: Packing Group III	-	-
Environmental hazards	Alkaline; Increase pH	-	-
Additional information		-	-

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

U.S. Federal regulations:

OSHA Hazard Communication Standard, 29 CFR 1910.1200	This product is a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200
TSCA Section 12(b) Export Notification (40 CFR 707, Subpart. D):	Not regulated
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):	Not listed
CERCLA Hazardous Substance List (40 CFR 302.4):	Not listed
Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs):	Not regulated
Clean Air Act Section 112 (r) Accidental Release Prevention (40 CFR 68.130):	Not regulated
Safe Drinking Water Act (SDWA):	Not regulated

SARA 311/312

Classification: Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Crystalline Silica (Quartz) CAS 14808-60-7	>1	No	No	No	No	Yes

State regulations

Massachusetts RTK: The following components are listed: Crystalline Silica (Quartz) (CAS 14808-60-7), Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

New Jersey RTK: The following components are listed: Crystalline Silica (Quartz) (CAS 14808-60-7), Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS mixture)

Pennsylvania RTK: The following components are listed: Crystalline Silica (Quartz) (CAS 14808-60-7), Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

Rhode Island RTK: Not regulated.

California Prop. 65

WARNING: This product contains crystalline silica and chemicals (trace metals) known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Crystalline Silica (Quartz) CAS 14808-60-7	Yes	No	No	No

International regulations

Ingredient name	CAS #	TSCA	Canada	WHMIS	EEC
Crystalline Silica (Quartz)	14808-60-7	Yes	DSL	D2A	EINECS

WHMIS Classification:

D2A "Materials Causing Other Toxic Effects"

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

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of quicklime as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with quicklime to produce quicklime products. Users should review other relevant material safety data sheets before working with this quicklime or working on limestone products.

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Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists
CAS — Chemical Abstract Service
CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act
CFR — Code of Federal Regulations
DOT — Department of Transportation
GHS — Globally Harmonized System
HEPA — High Efficiency Particulate Air
IATA — International Air Transport Association
IARC — International Agency for Research on Cancer
IMDG — International Maritime Dangerous Goods
NIOSH — National Institute of Occupational Safety and Health
NOEC — No Observed Effect Concentration
NTP — National Toxicology Program
OSHA — Occupational Safety and Health Administration
PEL — Permissible Exposure Limit
REL — Recommended Exposure Limit
RQ — Reportable Quantity
SARA — Superfund Amendments and Reauthorization Act
SDS — Safety Data Sheet
TLV — Threshold Limit Value
TPQ — Threshold Planning Quantity
TSCA — Toxic Substances Control Act
TWA — Time-Weighted Average
UN — United Nations