

Material Safety Data Sheet

Product Name : **Calcium Hydroxide / Hydrated Lime**



GOLDEN LIME

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

| | |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name | CALCIUM HYDROXIDE / HYDRATED LIME |
| Supplier Name | Golden Lime Public Company Limited |
| Manufacturing Address | 7 Soi 11, Sai 3 Moo.12, Saraburi lom sak sai mai road, Chongsarika, Pattananikom, Lopburi 15220, THAILAND |
| Telephone | 66 2 9618652-6 |
| Fax | 66 2 9618650-1 |
| Emergency | Bus Hrs 66 81 3456368 A/Hrs 66 81 638 2030 |
| Email | kiatikul@goldenlime.co.th ; glmkt@goldenlime.co.th |
| Web Site | http://www.goldenlime.co.th |
| Synonym(s) | Calcium Hydroxide, Hydrated Lime, Slaked Lime |
| Use(s) | Applications such as neutralising agent in water and sewage treatment, a binder in mortars and renders, soil stabilisation and maintaining alkaline conditions for mineral processing, construction and other environmental applications. |

2. HAZARDS IDENTIFICATION

RISK PHRASES

- R36/37/38 Irritating to eyes, respiratory system and skin.
- R40 Limited evidence of a carcinogenic effect.
- R43 May cause sensitisation by skin contact.
- R48/20 Harmful : danger of serious damage to health by prolonged exposure through inhalation.

SAFETY PHRASES

- S20/21 When using do not eat, drink or smoke.
- S22 Do not breathe dust.
- S24/25 Avoid contact with skin and eyes.
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S38 In case of insufficient ventilation, wear suitable respiratory equipment.

ONLY CLASSIFIED AS DANGEROUS GOODS BY THE CRITERIA OF THE ADG CODE WHEN TRANSPORTED BY AIR

| | | | | | |
|----------|------|--------------------|----------------|-----------|----------------|
| UN No | 1910 | Hazchem Code | 4W | Pkg Group | III |
| DG Class | 8 | Subsidiary Risk(s) | None Allocated | EPG | None Allocated |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredient | Formula | Conc. | CAS No. |
|---------------------|------------------|----------|------------|
| Calcium Hydroxide | Ca(OH) 2 | 87 – 95% | 1305-62-0 |
| Magnesium Hydroxide | Mg(OH) 2 | 0 – 3% | 1309-42-8 |
| Silicon Dioxide | SiO2 Crystalline | 0 – 2% | 14808-60-7 |
| Aluminium Oxide | Al2O3 | 0 – 1% | 1344-28-1 |
| Iron (III) Oxide | Fe2O3 | 0 – | 1309-37-1 |

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4. FIRST AID MEASURES

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| Eye | Flush thoroughly with flowing water for at least 15 minutes. Seek medical attention if symptoms persist. |
| Inhalation | Remove from dusty area to fresh air. If symptoms persist, seek medical attention. |
| Skin | Quickly but gently, wipe material off skin. Immediately remove all contaminated clothing and footwear. Wash skin thoroughly with copious amounts of water. |
| Ingestion | Rinse mouth and lips with water. Do not induce vomiting. Give water to drink to dilute stomach contents. If symptoms persist, seek medical attention. |
| First Aid Facilities | Eye wash station. |

Additional Information - Aggravated Medical Conditions

| | |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation | Inhalation of dust through prolonged, repeated exposure can cause bronchitis, silicosis (scarring of the lung). It may also increase the risk of scleroderma (a disease affecting the connective tissue of the skin, joints, blood vessels and internal organs) and lung cancer. Epidemiological studies have shown that smoking increases the risk of bronchitis, silicosis (scarring of the lung) and lung cancer. |
| Skin | Irritating to the skin. Prolonged and repeated skin contact with Quicklime can cause irritant dermatitis. |

5. FIRE FIGHTING

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| Flammability | Non flammable. Does not cause dust explosions. Violent reaction with maleic anhydride, nitroethane, nitromethane, nitroparaffin, nitropropane, phosphorus and oxidants.. |
| Fire and Explosion | Non flammable. No fire or explosion hazard exists. |
| Extinguishing | Non flammable. |
| Hazchem Code | None Allocated |

6. ACCIDENTAL RELEASE MEASURES

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| Spillage | If spilt (bulk), contact emergency services if appropriate. Wear dust-proof goggles, PVC/rubber gloves, a Class P2 respirator (where an inhalation risk exists), coveralls and rubber boots. Clear area of all unprotected personnel. Prevent spill entering drains or waterways. Collect and place in sealable containers for disposal or reuse. Avoid generating dust. Quicklime should be slowly hydrated by SLOW addition to water then neutralized with diluted Hydrochloric Acid (eg 6M) before disposal. |
| Emergency Procedures | Follow safety requirements for personal protection under Section 8 Exposure Controls/Personal Protection. |

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7. HANDLING AND STORAGE

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| Storage | Concrete or steel bins and silos or plastic lined paper sacks are the recommended forms of storage. Store in a cool, dry, well ventilated area, removed from moisture, oxidising agents (eg phosphorus oxide), acids, ethanol, interhalogens (eg chlorine trifluoride) and foodstuffs. Ensure packages are adequately labelled, protected from physical damage, and sealed when not in use. Also store removed from maleic anhydride, nitroethane, nitromethane, nitroparaffin, nitropropane, phosphorus, polychlorinated phenols and potassium nitrate. |
| Handling | Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas. |
| Property/ Environmental | Refer to Section 13. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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| Ventilation | Avoid generating dust. All work with Hydrated Lime should be carried out in such a way as to minimise exposure to dust and repeated skin contact. Where dust could be generated whilst handling Hydrated Lime, use local mechanical ventilation or extraction in areas where dust could escape into the work environment. For bulk deliveries, closed pumping systems are recommended. For handling of individual bags, follow personal protection instructions if no local exhaust ventilation is available. |
| Exposure Standards | CALCIUM HYDROXIDE (1305-62-0) ES-TWA: 5 mg/m ³ WES-TWA: 5 mg/m ³ SILICA, CRYSTALLINE – QUARTZ (14808-60-7) ES-TWA: 0.1 mg/m ³ (Silica Quartz, respirable, NOHSC) ES-TWA: 0.1 mg/m ³ (QLD); 0.15 mg/m ³ (NSW) WES-TWA: 0.1 mg/m ³ ALUMINIUM OXIDE (1344-28-1) ES-TWA: 10 mg/m ³ (Total Dust) WES-TWA: 10 mg/m ³ IRON (III) OXIDE (1309-37-1) WES-TWA: 5 mg/m ³ |
| PPE | Wear dust-proof goggles and rubber or PVC gloves. Where an inhalation risk exists, wear a Class P2 respirator. If there is potential for prolonged and/or excessive skin contact, wear coveralls. At high dust levels, wear a Class P3 respirator or a Powered Air Purifying Respirator (PAPR) with Class P3 Filter. |

9. PHYSICAL AND CHEMICAL PROPERTIES

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| Appearance | A white or off-white amorphous powder with a typical fineness of less than 5% retained on a 75 micron sieve. | Solubility (water) | Slightly |
| Odour | Slight Odour | Specific Gravity | 2.1 to 2.3 |
| pH | Approximately 12 | % Volatiles | Not Available |
| Vapour Pressure | Not Available | Flammability | Non Flammable |
| Vapour Density | Not Available | Flash Point | Not Relevant |
| Boiling Point/Melting Point | Decomposes to Calcium Oxide and water @ 580°C | Upper Explosion Limit | Not Relevant |
| Lower Explosion Limit | | Not Relevant | |
| Evaporation Rate | Not Available | Autoignition | Not Available |
| Bulk Density | 200 – 500 kg/m ³ | | |
| Particle Size | 95% < 75 microns | | |

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10. STABILITY AND REACTIVITY

Reactivity Incompatible with oxidising agents (eg phosphorus oxide), ethanol, interhalogens (eg chlorine trifluoride) and acids. Also incompatible with maleic anhydride, nitroethane, nitromethane, nitroparaffin, nitropropane, phosphorus, polychlorinated phenols and potassium nitrate.

Decomposition Products May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary Corrosive. Use safe work practices to avoid eye – skin contact and dust generation – inhalation. Once water is added, an inhalation hazard is not anticipated. Chronic respiratory effects are not anticipated with over exposure at high levels due to the immediate irritant and/or corrosive effects.

Eye Corrosive. Severe irritant upon contact with powder/dust. Over exposure may result in pain, redness, corneal burns and ulceration with possible permanent damage.

Inhalation Corrosive. Over exposure to powder – dust (when mixing) may result in severe mucous membrane irritation of nose and throat, coughing and bronchitis at high levels.

Skin Irritating and drying to skin. May cause alkaline burns and irritant or allergic dermatitis.

Ingestion Corrosive. Ingestion may result in ulceration and burns to the mouth and throat, nausea, vomiting, abdominal pain and diarrhoea.

Toxicity Data CALCIUM HYDROXIDE (1305-62-0)
LD50 (Ingestion): 7300 mg/kg (mouse)
SILICA, CRYSTALLINE – QUARTZ (14808-60-7)
Carcinogenicity: Classified as a human carcinogen (IARC Group1)
MAGNESIUM HYDROXIDE (1309-42-8) LD50 (Ingestion): 8500 mg/kg (rat, mouse)

12. ECOLOGICAL INFORMATION

Environment The aquatic toxicity of calcium hydroxide is due to its alkalinity. It is neutralised to calcium carbonate by absorption of atmospheric carbon dioxide and is not degraded by oxidation. Calcium hydroxide does not bioaccumulate in the environment.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Reuse or recycle where possible. Alternatively, ensure product is covered with moist soil to prevent dust generation and dispose of to an approved landfill site. Contact the manufacturer for additional information.

Legislation Dispose of in accordance with relevant local legislation. Keep out of sewer and stormwater drains.

14. TRANSPORT INFORMATION

Not classified as dangerous goods by the criteria of the ADG Code.

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|----------------------|----------------|---------------------------|----------------|------------------|----------------|
| Shipping Name | None Allocated | Hazchem Code | None Allocated | Pkg Group | None Allocated |
| UN No | None Allocated | Subsidiary Risk(s) | None Allocated | EPG | None Allocated |
| DG Class | None Allocated | | | | |

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15. OTHER INFORMATION

Additional Information

IARC – GROUP 1 – PROVEN HUMAN CARCINOGEN. This product contains an ingredient for which there is sufficient evidence to have been classified by the International Agency for Research into Cancer as a human carcinogen. The use of products known to be human carcinogens should be strictly monitored and controlled.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The Recommendation for protective equipment contained within this MSDS report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare an MSDS report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

ABBREVIATIONS:

mg/m³ - Milligrams per cubic metre

ppm - Parts Per Million

ES-TWA - Exposure Standard - Time Weighted Average

pH - relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline.

CAS# - Chemical Abstract Service Number - used to uniquely identify chemical compounds.

IARC - International Agency for Research on Cancer.

WES-TWA - Workplace Exposure Standard - Time Weighted Average

M - Moles per litre, a unit of concentration.

Report Status

This document has been compiled by Golden Lime Public Company Limited the manufacturer of the product and serves as the manufacturer's Material Safety Data Sheet ("MSDS").

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