



**WATER SPECIALIST SUPPLY CO.,LTD.**

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**MATERIAL SAFETY DATA SHEET**

**CALCIUM HYDROXIDE**

**PRODUCT:CALCIUM HYDROXIDE**

**SECTION 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**WATER SPECIALIST SUPPLY CO.,LTD.**

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PREPARED BY..... Water Specialist Supply CO.,LTD

PREPARATION DATE..... 14/July/16

PRODUCT NAME..... Calcium Hydroxide,Hydrate lime,  
Slacked lime

CHEMICAL FORMULA.....Ca(OH)<sub>2</sub>

MOLECULAR WEIGHT.....74.096.

CHEMICAL FAMILY..... Alkaline Earth Hydroxide

USE.....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.

EMERGENCY PHONE NO..... (+66)34-440-851 to 3 or (+66)95-367-5790

## SECTION 02 : COMPOSITION/INFORMATION ON INGREDIENT

Ingredient	Formula	Conc.	CAS No.
Calcium Hydroxide	Ca(OH) <sub>2</sub>	87 – 95%	1305-62-0
Magnesium Hydroxide	Mg(OH) <sub>2</sub>	0 – 3%	1309-42-8
Silicon Dioxide	SiO <sub>2</sub> Crystalline	0 – 2%	14808-60-7
Aluminium Oxide	Al <sub>2</sub> O <sub>3</sub>	0 – 1%	1344-28-1
Iron III Oxide	Fe <sub>2</sub> O <sub>3</sub>	0 –	1309-37-1

## SECTION 03: 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.**

<b>UN No</b> 1910	<b>Hazchem Code</b> 4W	<b>Pkg Group</b> III
<b>DG Class</b> 8	<b>Subsidiary Risk(s)</b> None Allocated	<b>EPG</b> None Allocated

## SECTION 04 : FIRST AID MEASURES

### **INSTRUCTIONS:**

#### **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.

### **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.

## SECTION 05 : FIRE FIGHTING MEASURES

### **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

## SECTION 06 : ACCIDENTAL RELEASE MEASURES

### **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.

## SECTION 07 : HANDLING AND STORAGE

### **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.



## SECTION 08 : EXPOSE CONTROL/PERSONAL PROTECTION

### PPE

**Gloves/Type**.....Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

**Respiratory**.....Respiratory protection is not normally required. If use creates dust formations, then a NIOSH-approved respirator with a dust cartridge is recommended.

**Eye**.....Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

**Clothing**.....Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

**Footwear**.....No special footwear is required other than what is mandated at place of work.

### Engineering Control:

#### Ventilation Requirement

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<sup>3</sup> WES-TWA: 5 mg/m<sup>3</sup>

SILICA, CRYSTALLINE – QUARTZ (14808-60-7)

ES-TWA: 0.1 mg/m<sup>3</sup> (Silica Quartz, respirable, NOHSC)

ES-TWA: 0.1 mg/m<sup>3</sup> (QLD); 0.15 mg/m<sup>3</sup> (NSW)

WES-TWA: 0.1 mg/m<sup>3</sup>

ALUMINIUM OXIDE (1344-28-1)

ES-TWA: 10 mg/m<sup>3</sup> (Total Dust)

WES-TWA: 10 mg/m<sup>3</sup> IRON (III) OXIDE (1309-37-1) WES-TWA: 5 mg/m<sup>3</sup>

**Other**.....Emergency shower and eyewash should be in close proximity.

## SECTION 09 :PHYSICAL AND CHEMICAL PROPERTIES

Appearance :	A white or off-white amorphous powder with a typical fineness of less than 5% retained on a 75 micron sieve.
Odor:	Slight Odour
pH :	Approximately 12
Vapour Pressure (MMHG):	N.AP. @ 20(C).
Vapour Density (Air=1) :	N.AP.
Evaporation Rate :	N.AP.
Freeze/Boiling Point :	Decomposes to Calcium Oxide and water @ 580°C .
Melting Point(°C ) :	101 - 102 °C .
Specific Gravity (Water=1):	2.1 to 2.3
Particle size:	95% < 75 microns
Bulk Density:	200 – 500 kg/m <sup>3</sup>
Solubility in Water (%w/w):	1.85 g/L at 0oC
Coefficient of Water/Oil dist :	N.AV.
Molecular Formular:	Ca(OH) <sub>2</sub>
Molecular Weight :	74.096(anhydrous)

## SECTION 10:STABILITY AND REACTIVITY

**Stability**.....Stable under normal conditions. Will absorb carbon dioxide from the air to form calcium carbonate.

**Incompatibility**.....Boron tri-fluoride, chlorine tri-fluoride, ethanol,fluorine,hydrogen fluoride, phosphorus pentoxide and acids.

**Polymerization**.....Will not occur.

### **Hazardous Products of Decomposition**

Thermal decomposition at 540 °C will produce calcium oxide and water. Reacts violently with strong acids. Reacts chemically with acids and many other compounds and chemical elements to form calcium based compounds. Explosive when mixed with nitro organic compounds.

## SECTION 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)

## SECTION 12 : ECOLOGICAL CONSIDERATION

### 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.

## SECTION 13 : DISPOSAL CONSIDERATION

### 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.

## SECTION 14 : TRANSPORT INFORMATION

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

**Shipping Name** None Allocated

**UN No** None Allocated    **Hazchem Code** None Allocated    **Pkg Group** None Allocated

**DG Class** None Allocated    **Subsidiary Risk(s)** None Allocated    **EPG** None Allocated

## SECTION 15 : REGULATORY 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/m<sup>3</sup>** – 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.

## SECTION 16 :OTHER INFORMATION

**Disclaimer :**

**Water Specialist Supply(WSS THAILAND) CO.,Ltd provide information contained here in good faith but make 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 using this product.Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.**