

# Material Safety Data Sheet (MSDS / SDS)

## Hydrated Lime (Calcium Hydroxide, $\text{Ca(OH)}_2$ )

**Product Name:** Hydrated Lime

**Chemical Name:** Calcium Hydroxide

**Chemical Formula:**  $\text{Ca(OH)}_2$

**CAS Number:** 1305-62-0

**EC Number:** 215-137-3

**UN Number:** Not Regulated

**Revision No.:** 1.0

**Issue Date:** \_\_\_\_\_

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## SECTION 1 – Identification

### Product Identifier

- Product Name: Hydrated Lime
- Synonyms:
  - Slaked Lime
  - Hydrated Lime
  - Calcium Hydroxide
  - Lime Hydrate

### Recommended Uses

- Water Treatment
- Sugar Industry
- Steel Industry
- Mining
- Chemical Manufacturing
- Environmental Applications
- Construction
- Leather Processing
- Paper Industry
- Flue Gas Desulfurization (FGD)

## **SECTION 2 – Hazard Identification**

### **GHS Classification**

- Skin Irritation – Category 2
- Serious Eye Damage – Category 1
- Specific Target Organ Toxicity (Single Exposure) – Category 3 (Respiratory Irritation)

### **GHS Pictograms**

- Corrosion (GHS05)
- Exclamation Mark (GHS07)

### **Hazard Statements**

- H315 – Causes skin irritation.
- H318 – Causes serious eye damage.
- H335 – May cause respiratory irritation.

### **Precautionary Statements**

#### **Prevention**

- Avoid breathing dust.
- Use only in well-ventilated areas.
- Wear protective gloves.
- Wear eye and face protection.
- Wash thoroughly after handling.

#### **Response**

- IF IN EYES: Rinse cautiously with water for at least 15 minutes. Remove contact lenses if present. Seek immediate medical attention.
- IF ON SKIN: Wash thoroughly with soap and water.
- IF INHALED: Move to fresh air.
- IF SWALLOWED: Rinse mouth. Do not induce vomiting. Seek medical attention.

## SECTION 3 – Composition / Information on Ingredients

| Component         | CAS No.   | Concentration |
|-------------------|-----------|---------------|
| Calcium Hydroxide | 1305-62-0 | ≥90%          |
| Calcium Carbonate | 471-34-1  | Balance       |
| Moisture          | —         | Trace         |

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## SECTION 4 – First Aid Measures

### Eye Contact

Immediately flush eyes with plenty of clean water for at least 15–20 minutes. Remove contact lenses if present and easy to do. Seek immediate medical attention.

### Skin Contact

Remove contaminated clothing. Wash affected skin with soap and plenty of water for at least 15 minutes. Obtain medical advice if irritation persists.

### Inhalation

Move the affected person to fresh air. If breathing is difficult, provide oxygen if qualified to do so and seek medical attention.

### Ingestion

Rinse mouth thoroughly with water. Do not induce vomiting. If conscious, give water to drink. Seek immediate medical attention.

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## SECTION 5 – Fire Fighting Measures

**Flammability:** Non-combustible.

### Suitable Extinguishing Media

- Water spray
  - Foam
  - Dry chemical
  - Carbon dioxide (CO<sub>2</sub>)
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**Hazardous Combustion Products:** None.

### **Protective Equipment**

Firefighters should wear standard protective clothing and self-contained breathing apparatus (SCBA).

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## **SECTION 6 – Accidental Release Measures**

### **Personal Precautions**

- Avoid breathing dust.
- Wear appropriate PPE.
- Prevent dust generation.

### **Environmental Precautions**

Prevent large quantities from entering drains, waterways, or soil.

### **Cleanup Methods**

Carefully sweep or vacuum material into suitable containers. Avoid creating airborne dust.

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## **SECTION 7 – Handling and Storage**

### **Handling**

- Avoid dust formation.
- Avoid contact with skin and eyes.
- Wash hands thoroughly after handling.
- Use adequate ventilation.

### **Storage**

- Store in a cool, dry, well-ventilated area.
  - Keep containers tightly closed.
  - Protect from moisture and carbon dioxide.
  - Keep away from acids.
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## **SECTION 8 – Exposure Controls / Personal Protection**

### **Occupational Exposure Limits**

| <b>Agency</b> | <b>Exposure Limit</b>                     |
|---------------|-------------------------------------------|
| OSHA PEL      | 5 mg/m <sup>3</sup> (Respirable Fraction) |
| ACGIH TLV     | 5 mg/m <sup>3</sup>                       |

### **Engineering Controls**

- Local exhaust ventilation
- Dust collection systems
- Adequate general ventilation

### **Personal Protective Equipment**

#### **Respiratory Protection**

- NIOSH-approved dust respirator (N95, P2, or P3 as appropriate)

#### **Eye Protection**

- Chemical safety goggles
- Face shield where splash or heavy dust exposure is possible

#### **Hand Protection**

- PVC gloves
- Nitrile gloves
- Rubber gloves

#### **Body Protection**

- Protective clothing
- Long sleeves
- Safety boots
- Chemical-resistant apron when necessary

## SECTION 9 – Physical and Chemical Properties

| Property                  | Value                                            |
|---------------------------|--------------------------------------------------|
| Appearance                | White Powder                                     |
| Odor                      | Odorless                                         |
| Molecular Weight          | 74.09 g/mol                                      |
| pH (Saturated Solution)   | 12.4–12.6                                        |
| Melting Point             | Decomposes above approximately 580°C             |
| Relative Density          | 2.20–2.30 g/cm <sup>3</sup>                      |
| Bulk Density              | 0.45–0.70 g/cm <sup>3</sup>                      |
| Solubility in Water       | Slightly soluble (approximately 1.7 g/L at 20°C) |
| Flash Point               | Not Applicable                                   |
| Auto-Ignition Temperature | Not Applicable                                   |
| Explosive Properties      | None                                             |
| Oxidizing Properties      | None                                             |

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## SECTION 10 – Stability and Reactivity

**Stability:** Stable under recommended storage conditions.

### Conditions to Avoid

- Moisture
- Carbon dioxide
- Excessive humidity

### Incompatible Materials

- Strong acids
- Acid chlorides
- Acid anhydrides

### Hazardous Reactions

Reacts exothermically with acids.

### Hazardous Decomposition Products

Calcium oxide may form upon strong heating.

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## **SECTION 11 – Toxicological Information**

### **Likely Routes of Exposure**

- Inhalation
- Eye contact
- Skin contact
- Ingestion

### **Symptoms**

- Eye burns
- Skin irritation
- Respiratory irritation
- Coughing
- Sore throat
- Redness

### **Chronic Effects**

Repeated or prolonged exposure may cause dermatitis or chronic respiratory irritation.

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## **SECTION 12 – Ecological Information**

- Low toxicity to aquatic organisms.
  - Large releases may increase the pH of water bodies.
  - Avoid uncontrolled release into the environment.
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## **SECTION 13 – Disposal Considerations**

Dispose of unused material and contaminated packaging in accordance with local, regional, and national regulations.

Do not discharge into drains or natural watercourses.

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## SECTION 14 – Transport Information

| Item                 | Information    |
|----------------------|----------------|
| UN Number            | Not Regulated  |
| Proper Shipping Name | Not Regulated  |
| Hazard Class         | Not Classified |
| Packing Group        | Not Applicable |
| Marine Pollutant     | No             |

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## SECTION 15 – Regulatory Information

This product should be handled in accordance with applicable occupational safety, environmental, and chemical regulations.

Complies with the Globally Harmonized System (GHS) for classification and labeling.

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## SECTION 16 – Other Information

**Shelf Life:** 12 months when stored in original, unopened packaging under dry conditions.

### Recommended Storage Temperature

Ambient temperature in a dry, well-ventilated location.

### Recommended Personal Protective Equipment (PPE)

- Safety goggles
- Dust respirator
- Chemical-resistant gloves
- Protective clothing
- Safety footwear

### Revision Information

- **Version:** 1.0
  - **Prepared by:** Quality Assurance Department
  - **Company:** Al-Amin Associates
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## **Disclaimer**

The information contained in this Safety Data Sheet is believed to be accurate and is provided in good faith based on current knowledge of the product. It is intended as guidance for the safe handling, storage, transportation, use, and disposal of the material. It does not constitute a warranty or guarantee of product performance. Users are responsible for ensuring compliance with all applicable laws and regulations and for determining the suitability of the product for their intended application.

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