Safety Data Sheet

1. Identification

GHS Product Identifier: CALCIUM OXIDE

Company Name: CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)
Address: 38 - 50 Bedford Street GILLMAN SA 5013 Australia
Telephone/Fax Number: Tel: (08) 8440-2000 Fax: (08) 8440-2001

Recommended use of the chemical and restrictions on use:
Refractory, flux in steel manufacture, pulp and paper, manufacture of calcium carbide and other calcium salts, sulfur dioxide removal from stack gases, sewerage treatment (phosphate removal, pH control), water treatment, neutralisation of acid waste effluents, insecticides, fungicides, dehairing of hides, sugar refining, poultry feeds, food additive, glass manufacture, sodium carbonate by Solvay process, building and construction materials (bricks, plaster, mortar, stucco and cement), aluminium and magnesium manufacture, flotation of non-ferrous ores, drilling fluids, lubricants, carbon dioxide absorbant and laboratory reagent.

2. Hazard Identification

GHS classification of the substance/mixture: Skin Corrosion/Irritation: Category 1B

Signal Word(s): DANGER

Signal Word(s): H314 Causes severe skin burns and eye damage. AUH014 Reacts violently with water

Pictogram(s): Corrosion

Precautionary statement – Prevention:
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P363 Wash contaminated clothing before reuse.
P310 Immediately call a POISON CENTER or doctor/physician.
Safety Data Sheet

Product Name: CALCIUM OXIDE

Precautionary statement – Storage
P405 Store locked up.

This substances is classified as Dangerous Goods for air transport only.

3. Composition/information on ingredients

Chemical Characterization
Name: Calcium oxide
CAS: 1305-78-8
Proportion: 90-100%
Hazard Symbol: Xi
Risk Phrase: R41

Impurities include calcium carbonate and magnesium, iron and aluminum oxides.

4. First-aid measures

Inhalation
Remove victim to fresh air. Employ artificial respiration if indicated. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek urgent medical assistance.

Ingestion
Give water or milk to drink. DO NOT induce vomiting. Seek immediate medical assistance.

Skin
Immediately irrigate with copious quantities of water for at least 15 minutes. Eyelids to be held open. Seek immediate medical assistance.

Eye contact
Maintain eyewash fountain and safety shower in work area.

First Aid Facilities
Treat symptomatically and supportively. Consult Poisons Information Centre.

Advice to Doctor
For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Specific Methods
When material is not involved in fire. Do NOT use water on material itself. Small fire: Use CO2, dry chemical, dry sand or flooding quantities of water. If safe to do so, move undamaged containers from the fire area. Large fire: Flood fire with large quantities of water while knocking down vapours with water fog. If insufficient water supply, knock down vapours only. Cool containers with flooding quantities of water until well after the fire is out. Avoid getting water inside the containers.

Specific hazards arising from the chemical
Does not burn but may produce poisonous and/or corrosive fumes upon heating. Heat of reaction may be enough to ignite combustible materials. Will react with water (some violently) releasing flammable, poisonous and/or corrosive gases and runoff. Contact with metals may evolve flammable hydrogen gas. Fire will produce irritating, poisonous and/or corrosive gases. Runoff may pollute waterways. May be transported in a molten form. Containers may explode when heated or contaminated with water.

Hazchem Code
2X

Precautions in connection with Fire
Wear SCBA and acid-resistant chemical splash suit. Structural firefighter’s uniform is NOT effective for these materials.

6. Accidental release measures

Spills & Disposal
Do not touch or walk through this product. Do NOT touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas. Vapour-suppressing foam may be used to control vapours - Water spray may be used to knock down or divert vapour clouds. DO NOT GET WATER INSIDE CONTAINERS.

Small Spill: Cover with DRY earth, sand or other non-combustible material followed by a plastic sheet to minimize spreading or contact with rain. Use clean non-sparking tools to collect material and place it into loosely-covered plastic containers for later disposal.

Personal Protection
Use personal protective equipment listed in Section 8.

Clean-up Methods - Small Spillages
Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations.

Environmental Precautions
Prevent from entering into drains, ditches, rivers or the sea.

7. Handling and storage

Precautions for Safe Handling
Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Use with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.
Safety Data Sheet

Product Name: CALCIUM OXIDE

Classified as hazardous

Conditions for safe storage, including any incompatibilities
Store in a cool, dry place. Store in well ventilated area. Keep away from heat. Keep containers closed at all times.

Corrosiveness
Solutions may corrode aluminium.

Storage Regulations
Refer Australian Standard AS 3780 - 1994 'The storage and handling of corrosive substances'.

8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Occupational exposure limit values</th>
<th>Name</th>
<th>STEL</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calcium oxide</td>
<td>mg/m³</td>
<td>ppm</td>
</tr>
<tr>
<td>Other Exposure Information</td>
<td>A time weighted average (TWA) has been established for Calcium oxide (Work Safe Australia) of 2 mg/m³. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate engineering controls</td>
<td>In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory Protection</td>
<td>Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye Protection</td>
<td>The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand Protection</td>
<td>Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336. Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footwear</td>
<td>RECOMMENDATION: Excellent: Nitrile, Neoprene, PVC. Poor: NR latex. Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Protection</td>
<td>Clean clothing or impervious, protective clothing should be worn, preferably with an apron, to prevent skin contact. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hygiene Measures</td>
<td>Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Form</th>
<th>Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White or colourless lumps or granular powder. Occasionally has a yellowish or brownish tint, due to the presence of iron.</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>Melting Point</td>
<td>2580 °C</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>2850 °C</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Slightly soluble (1.65 g/l @ 20 °C) - rigorous reaction: reacts to form calcium hydroxide with evolution of heat.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>3.37</td>
</tr>
<tr>
<td>pH</td>
<td>~ 12.6 (saturated solution, H2O, 20 °C)</td>
</tr>
<tr>
<td>Flammability</td>
<td>Non combustible material.</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>56.08</td>
</tr>
<tr>
<td>Other Information</td>
<td>Hygroscopic, readily absorbs carbon dioxide and water from air, becoming air-slaked.</td>
</tr>
</tbody>
</table>

10. Stability and reactivity
**Chemical Stability**
Stable under ordinary conditions of use and storage. Hygroscopic

**Conditions to Avoid**
Exposure to moisture. Exposure to air. Incompatibles.

**Incompatible Materials**
Air, acids, alcohols, aluminium, ammonium compounds, boric oxide, boron, chlorine, fluorine, halogenated compounds, hydrofluoric acid, hydrogen fluoride, organic materials, metals, moisture, strong bases, phosphorus pentoxide, trifluoride, and water.

**Possibility of hazardous reactions**
Calcium oxide combined with water reacts to form calcium hydroxide whilst generating heat. Contact with metals may emit flammable hydrogen gas.

**Hazards**
Will not occur.

**11. Toxicological Information**

**Ingestion**
Corrosive. May attack the esophagus. May result in abdominal pain, and cramps, nausea, vomiting, diarrhoea and collapse. May cause serious alkali burns in mouth, throat, oesophagus and stomach. Swallowing may become painful and difficult. A burning pain extends down the oesophagus to the stomach. May affect respiration. Vomitus is thick and slimy due to mucus. Later is may contain blood shred of mucous membrane due to necrosis.

**Inhalation**
Inhalation of dust is highly irritating and possibly corrosive to the upper respiratory tract. May cause burning sensation, sore throat, sneezing, coughing, choking, dyspnea, laboured breathing, possibly burns with perforation of the nasal septum and variable symptoms of headache, dizziness and weakness. Intense exposures may result in tightness in the chest, and delayed pulmonary edema. The solubility of the substance allows further penetration that may continue for several days.

**Skin**
Irritant. May cause severe corrosive burns. Symptoms may include dry skin, redness, burning sensation and pain. During prolonged skin contact the substance can penetrate the unprotected skin slowly, producing soft, necrotic, deeply penetrating areas on contact. The solubility allows further penetration that may continue for several days. The extent of damage depends on duration of contact.

**Eye**
Severe eye irritant. Corrosive. May damage eye tissues. May cause redness, tearing, blurred vision, severe deep burns and pain. Direct contact with the solid or aqueous solutions may cause conjunctival edema and corneal destruction which can lead to and may cause blindness.

**Carcinogenicity**
No evidence of carcinogenic properties.

**Chronic Effects**
Repeated or prolonged skin contact may result in dermatitis. Chronic inhalation of dust may cause inflammation of the respiratory passages, ulcers of the mucous membranes, possible perforation of the nasal septum, bronchial irritation with chronic cough. Symptoms of overexposure include pneumonia and silicosis.

**Mutagenicity**
No evidence of mutagenic properties.

**12. Ecological Information**

**Ecotoxicity**
Harmful effect due to pH shift.

**Information on Ecological Effects**
Toxic to aquatic life.

**Acute Toxicity - Fish**
LC50 (Cyprinus carpio): 1070 mg/l/96h.

**13. Disposal Considerations**
Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and disposed of according to relevant local, state and federal government regulations.

**14. Transport Information**

**Transport Information**
Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG); by the IATA Air Transport Dangerous Goods Regulations; or by the IMDG (International Maritime Dangerous Goods) Code. This substance is classified as dangerous for air transport only. See ICAO Rules or IATA Regulations.

**Hazchem Code**
2X

**UN Number (Air Transport, ICAO)**
1910

**IATA/ICAO Packing Group**
III

**IATA/ICAO Hazard Class**
8
Product Name: CALCIUM OXIDE

15. Regulatory information

<table>
<thead>
<tr>
<th>Regulatory Information</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>IATA/ICAO Proper Shipping Name</td>
<td>CALCIUM OXIDE</td>
</tr>
<tr>
<td>Poisons Schedule</td>
<td>Not Scheduled</td>
</tr>
<tr>
<td>Hazard Category</td>
<td>Irritant</td>
</tr>
</tbody>
</table>

16. Other Information

Literature References

'Standard for the Uniform Scheduling of Medicines and Poisons No. 4', Commonwealth of Australia, June 2013.


'Labelling of Hazardous Workplace Chemicals, Code of Practice' Safe Work Australia.

Standards Australia 'AS 1940-2004 The Storage and Handling of Flammable and Combustible Liquids.


Worksafe Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(2004)]'.

Worksafe Australia, 'Hazardous Substances Information System, 2005'.

Worksafe Australia, 'National Code of Practice for the Labelling of Workplace Hazardous Substances (2011)'.


Contact Person/Point

Paul McCarthy Ph. (08) 8440 2000

DISCLAIMER STATEMENT:

All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Empirical Formula & Structural Formula

CaO

...End Of MSDS...