Infosafe No™	1CH1O	Issue Date : February 2019	RE-ISSUED by CHEMSUPP

Product Name : **CALCIUM OXIDE**

Classified as hazardous

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
Emergency phone number	CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)
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.

Other Names	**Name**	**Product Code**
	Burnt lime, Unslaked lime, Quicklime, Fluxing lime, Lime, Caustic lime	
	CALCIUM OXIDE, powder LR	CL625

Other Information

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

GHS classification of the substance/mixture	Eye Damage/Irritation: Category 1 Skin Corrosion/Irritation: Category 2 Specific Target Organ Toxicity - Single Exposure Category 3 (respiratory tract irritation)
Signal Word (s)	DANGER
Hazard Statement (s)	H315 Causes skin irritation. H318 Causes serious eye damage. H335 May cause respiratory irritation.
Pictogram (s)	Corrosion, Exclamation mark





Precautionary statement – Prevention	P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P264 Wash thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statement – Response	P302+P352 IF ON SKIN: Wash with plenty of soap and water. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P362 Take off contaminated clothing and wash before reuse. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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	P310 Immediately call a POISON CENTER or doctor/physician.
Precautionary statement – Storage	P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.
Precautionary statement – Disposal	P501 Dispose of contents/container to an approved waste disposal plant.
Other Information	This substances is classified as Dangerous Goods for air transport only.

3. Composition/information on ingredients

Chemical Characterization	Solid				
Ingredients	**Name**	**CAS**	**Proportion**	**Hazard Symbol**	**Risk Phrase**
	Calcium oxide	1305-78-8	90-100 %		
Other Information	Impurities include calcium carbonate and magnesium, iron and aluminum oxides.				

4. First-aid measures

Inhalation	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Immediately obtain medical aid if cough or other symptoms appear.
Ingestion	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.
Skin	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice /attention depending on the severity.
Eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek immediate medical assistance.
First Aid Facilities	Maintain eyewash fountain and safety shower in work area.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Other Information	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 Precautions	Evacuate the area of all non-essential personnel. Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

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.
Clean-up Methods - Large Spillages	Seek expert advice on handling and disposal.
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.
Conditions for safe storage, including any incompatabilities	Store in a cool,dry place. Store in well ventilated area. Store away from heat. Keep containers closed at all times. Aluminium containers should not be used for moist material.
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

Occupational exposure limit values

Name	STEL		TWA		
	mg/m3	ppm	mg/m3	ppm	Footnote
Calcium oxide			2		

Other Exposure Information

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.
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.

Appropriate engineering controls	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. These methods should be used in preference to personal protective equipment.
Respiratory Protection	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.
Eye Protection	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.
Hand Protection	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. RECOMMENDATION: Excellent: Nitrile, Neoprene, PVC. Poor: NR latex.
Personal Protective Equipment	Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.
Footwear	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.
Body Protection	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.
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

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

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.
Hazardous Polymerization	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 stomch. Swallowing may become painful and difficult. A burning pain extends down the oesophagus to the stomach. May affect respiration. Vomitous is thick and slimy due to mucous. 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	Causes skin irritation. 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. A harmful effect on aquatic organisms cannot be excluded in the event of improper handling or disposal.

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Information on Ecological Effects	Toxic to aquatic life.
Acute Toxicity - Fish	LC50 (Cyprinus carpio): 1070 mg/l/96h.

13. Disposal considerations

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
IATA/ICAO Proper Shipping Name	CALCIUM OXIDE

15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS). Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Poisons Schedule	Not Scheduled
Hazard Category	Irritant

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'. Safe Work Australia, 'Hazardous Chemical Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.
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

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