Safety Data Sheet

QUICKLIME

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name	**QUICKLIME**
Supplier Name	**ADELAIDE BRIGHTON CEMENT LTD T/A ADBRI CEMENT SA** ABN 96 007 870 199
Address	62 Elder Road, Birkenhead, SA 5015
Manufacturing Plant	Angaston Works, Stockwell Road, Angaston, SA 5333
Telephone	08 8300 0300
Emergency	Bus Hrs 08 8300 0300 A/Hrs 08 8300 0530
Email	customerservice@adbri.com.au
Web Site	www.adbricement.com.au
Synonym(s)	CALCIUM OXIDE, CALCIUM MONOXIDE, UNSLAKED LIME, BURNT LIME, ROCK LIME, FLUXING LIME.
Use(s)	Quicklime is used as a flux in the steel industry and in the production/recovery of aluminium, magnesium, uranium gold and silver. It is used to make chemicals such as sodium alkalis, calcium hypochlorite and petrochemicals. It is a strong neutralising chemicle, and is used in soil drying and stabilisation.

2. HAZARDS IDENTIFICATION

This product is classified as hazardous according to Safe Work Australia criteria.
Only classified as a dangerous good by the criteria of the ADG code when transported by air.

GHS Classifications

Skin Corrosion/Irritation:	Category 2
Serious Eye Damage / Eye Irritation:	Category 1
Specific Target Organ Systemic Toxicity (Single Exposure):	Category 3

SIGNAL WORD **DANGER**

Pictograms

GHS07
Exclamation mark

GHS05
Corrosive

Hazard statements

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

Prevention statements

P261	Avoid breathing dust.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response statements

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove 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.
P310	Immediately call a POISON CENTRE or doctor/physician.
P332 + P313	If skin irritation occurs: Get medical advice/attention.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

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 OXIDE	CaO	90 - 95%	1305-78-8
MAGNESIUM OXIDE	MgO	0.5 - 1.5%	1309-48-4
CRYSTALLINE SILICA (QUARTZ)	SiO_2	1 - 4%	14808-60-7
LIMESTONE	$CaCO_3$	0 – 2%	1317-65-3
ALUMINIUM OXIDE	Al_2O_3	0 – 1.5%	1344-28-1
IRON (III) OXIDE	Fe_2O_3	0 – 1%	1309-37-1

4. FIRST AID MEASURES

Eye Flush thoroughly with flowing water for at least 15 minutes and medical attention if symptoms persist. If a lime slurry is splashed into the eyes flush thoroughly for 15 minutes then seek urgent medical attention.

Inhalation Remove from dusty area to fresh air. If s ymptoms persist, seek medical attention.

Skin Promptly wipe material off skin being sure not to generate dust. 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.

Advice to Doctor Treat symptomatically. Contact Poisons Information Centre (131126 Australia wide).

First Aid Facilities Eye wash station.

Additional Information - Aggravated Medical Conditions

Inhalation Inhalation of dust through prolonged, repeated exposure can cause membrane irritation, bronchitis, pneumonia, 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 (scaring of the lung) and lung cancer in those exposed to crystalline silica.

Skin Irritating to the skin. Prolonged and repeated skin contact with Quicklime can cause irritant dermatitis.

Eye Irritating to the eye. If a large volume of lime dust (or slurry) is splashed into the eye alkaline burns can cause permanent damage.

5. FIRE FIGHTING

Flammability Not flammable. Does not support combustion of other materials, but on contact with water or acids may generate sufficient heat to ignite surrounding materials. DO NOT USE WATER for fire fighting. USE DRY CHEMICAL OR CO_2 TYPE EXTINGUISHERS.

Fire and Explosion Non flammable. No fire or explosion hazard exists.

Extinguishing Non flammable.

Hazchem Code None Allocated.

6. 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 neutralised with dilute Hydrochloric Acid eg 6M, before disposal.

Emergency Procedures

Follow safety requirements for personal protection under Section 8 Exposure Controls/ Personal Protection.

7. HANDLING AND STORAGE

Storage

Steel silos and airtight rail or road tankers are the usual forms of storage and transport. Common storage and handling equipment must NOT be used for Quicklime. Enclosed conveyors with extraction equipment and dust collection are required for safe handling. Quicklime must NOT come into contact with materials containing water or water of crystallisation, eg copper, alum, ferric sulphates. Quicklime must be kept away from moisture, steam, acid or acid fumes to prevent violent reactions.

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

Ventilation

Avoid generating dust. All work with Quicklime 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 Quicklime, use local mechanical ventilation or extraction in areas where dust could escape into the work environment. For bulk deliveries, closed pumping systems are recommended.

Exposure Standards

ALUMINIUM OXIDE (1344-28-1)
ES-TWA: 10 mg/m^3
CALCIUM CARBONATE (1317-85-3)
ES-TWA: 10 mg/m^3
CALCIUM OXIDE (1305-78-8)
ES-TWA: 1 mg/m^3
IRON (III) OXIDE (1309-37-1)
ES-TWA: 5 mg/m^3
MAGNESIUM OXIDE (1309-48-4)
ES-TWA: 10 mg/m^3
SILICA, CRYSTALLINE – QUARTZ (14808-60-7)
ES-TWA: 0.05 mg/m^3 (Respirable Dust). Under Model WHS Law adopted in most Australian jurisdictions.

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

Appearance	Granular off-white amorphous powder	**Solubility (water)**	Sparingly soluble, reacts vigorously with water
Odour	Slight Odour	**Specific Gravity**	3.2 to 3.4
pH	Approximately 12	**% Volatiles**	Not Available
Vapour Pressure	Not Available	**Flammability**	Non Flammable
Vapour Density	Not Available	**Flash Point**	Not Relevant
Boiling Point	2850^0c	**Upper Explosion Limit**	Not Relevant
Melting Point	2570^0C	**Lower Explosion Limit**	Not Relevant
Evaporation Rate	Not Available	**Autoignition Temperature**	Not Available
Bulk Density	950 - 1050 kg/m^3		
Particle Size	50% < 75 microns		

10. STABILITY AND REACTIVITY

Reactivity

Incompatible with hydrofluoric acid (violently) and phosphorus pentoxide. Reacts (potentially vigorously) with water generating heat and evolving calcium hydroxide.

Decomposition Products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

No known toxicity data available for this product.

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.

Mutagenicity

Insufficient data available for this product to classify as a mutagen.

Carcinogenicity

Crystalline silica is carcinogenic to humans (IARC Group 1), however due to low levels present and product application, the criteria for classification is not met.

Toxicity Data

CALCIUM HYDROXIDE (1305-62-0)
LD50 (Ingestion): 7300 mg/kg (mouse)
MAGNESIUM HYDROXIDE (1309-43-8)
LD50 (Ingestion): 8500 mg/kg (rat, mouse)
SILICA, CRYSTALLINE – QUARTZ (1408-60-7)
Carcinogenicity: Classified as a human carcinogen (IARC Group 1)

12. ECOLOGICAL INFORMATION

Environment Limited ecotoxicity data was available for this product at the time this report was prepared. Ensure appropriate measures are taken to prevent this product from entering the environment.

13. DISPOSAL CONSIDERATIONS

Waste Disposal For small amounts; VERY SLOWLY, hydrate (add water) and then neutralise with dilute hydrochloric acid (eg 6M HCl) to pH of 7-8. Dilute and flush to sewer or landfill. For large amounts, material can be readily recycled. Contact the manufacturer for additional information.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

Only classified as a dangerous good when transported by air (ADG Code).

Transport is by rail or road in bulk or bag form.

Drivers of trucks transporting bagged product should ensure that the bags are properly restrained.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

Shipping Name	Calcium Oxide				
UN No	1910	**Hazchem Code**	4W	**Pkg Group**	111
DG Class	8	**Subsidiary Risk(s)**	None Allocated	**EPG**	None Allocated

15. REGULATORY INFORMATION

Poison Schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).
AICS All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. 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 SDS 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 SDS report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

ABBREVIATIONS:
SDS – Safety Data Sheet
mg/m^3 – Milligrams per cubic metre
ppm – Parts Per Million
ES-TWA – Exposure Standard - Time Weighted Average
CNS – Central Nervous System
NOS – Not Otherwise Specified
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.
M – Moles per litre, a unit of concentration.

Report Status

This document has been compiled by Adelaide Brighton Cement the manufacturer of the product and serves as the manufacturer's Safety Data Sheet.

While the information in this Safety Data Sheet has been prepared in good faith, Adelaide Brighton Cement Limited does not warrant that the information is accurate, complete or up to date.

Contact Point

For further information on this product contact:

Telephone:	Office hours	08 8300 0300
	After hours	08 8300 0530
Web site:		www.adbricement.com.au

Advice Note

The information in this document is believed to be accurate. Please check the currency of this SDS by contacting:

08 8300 0300
or
www.adbricement.com.au

Each user of any information, or any product referred to, in this Safety Data Sheet must:
- determine whether the information or product is suitable for their purpose;
- assess and control any risks associated with the information or product; and
- obtain professional advice in relation to the use of the information or product.

To the extent permitted by law, Adelaide Brighton Cement Limited:
- excludes all representations, warranties and guarantees in relation to any information in this Safety Data Sheet; and
- will not be liable for any direct, indirect, consequential, incidental, special or economic loss (including but not limited to any loss of actual or anticipated profits, revenue, savings, production, business, opportunity, access to markets, goodwill, reputation, publicity, or use) arising from any use of or reliance on any information in this Safety Data Sheet.