



Boral Cement Material Safety Data Sheet

Product Name **QUICKLIME (BORAL CEMENT)**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name **BORAL CEMENT**
Address Clunies Ross Street , Prospect , NSW, AUSTRALIA, 2148
Telephone (02) 9033 4000
Fax (02) 9033 4055
Emergency 1800 033 111
Web Site <http://www.boral.com.au/cement>
Synonym(s) BURNT LIME • CALCIUM OXIDE • QUICK LIME • QUICKLIME • QUICKLIME (BCSC) (FORMERLY) • RK LIME • UNSLAKED LIME
Use(s) FLUX • MANUFACTURE OF HYDRATED LIME • MANUFACTURE OF PAPER • MANUFACTURE OF STEEL • MINERAL PROCESSING • NEUTRALISING AGENT • PH CONTROL • RECOVERY OF METALS • SOIL STABILISATION • SUGAR REFINING • WATER TREATMENT
SDS Date 30 Jul 2010

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

RISK PHRASES

R38 Irritating to skin.
R41 Risk of serious damage to eyes.

SAFETY PHRASES

S22 Do not breathe dust.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S38 In case of insufficient ventilation, wear suitable respiratory equipment.

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No. None Allocated **DG Class** None Allocated **Subsidiary Risk(s)** None Allocated
Packing Group None Allocated **Hazchem Code** None Allocated

3. COMPOSITION/ INFORMATION ON INGREDIENTS

| Ingredient | Formula | CAS No. | Content |
|-----------------------------|---------|------------|---------|
| CALCIUM OXIDE | Ca-O | 1305-78-8 | >88% |
| QUARTZ (SILICA CRYSTALLINE) | Si-O2 | 14808-60-7 | <3% |
| CALCIUM CARBONATE | Ca-C-O3 | 471-34-1 | <3% |
| ALUMINIUM OXIDE | Al2-O3 | 1344-28-1 | <1% |
| MAGNESIUM OXIDE | Mg-O | 1309-48-4 | <1% |
| IRON (III) OXIDE | Fe2-O3 | 1309-37-1 | <0.5% |

4. FIRST AID MEASURES

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|-----------------------------|--|
| Eye | If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes. |
| Inhalation | If inhaled, remove from contaminated area. Apply artificial respiration if not breathing. |
| Skin | If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor. |
| Ingestion | For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). |
| Advice to Doctor | Treat symptomatically. |
| First Aid Facilities | Eye wash facilities and safety shower are recommended. |

5. FIRE FIGHTING MEASURES

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|---------------------------|--|
| Flammability | Non flammable. May generate heat in contact with water. |
| Fire and Explosion | Evacuate area and contact emergency services. Do NOT use water. May generate heat upon contact with water; sufficient heat may be generated to ignite surrounding combustible materials. |
| Extinguishing | Do not use water for fire fighting as contact will increase heat generation. Use dry agent or carbon dioxide extinguishers only. |
| Hazchem Code | None Allocated |

6. ACCIDENTAL RELEASE MEASURES

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|-----------------|---|
| Spillage | Contact emergency services where appropriate. Use personal protective equipment. Clear area of all unprotected personnel. Prevent spill entering drains or waterways. Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust. |
|-----------------|---|

7. STORAGE AND HANDLING

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|-----------------|---|
| Storage | Store in a cool, dry, well ventilated area, removed from water or moisture, hydrofluoric acid, phosphorus pentoxide and foodstuffs. Ensure packages or storage tanks are adequately labelled, protected from physical damage and sealed when not in use. Caution: Swells when moist and may burst containers. Materials containing water of crystallisation (eg. aluminium or copper sulphate) should NOT be stored in the same containers as those previously used to store Quicklime. |
| 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. |

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Exposure Stds

| Ingredient | Reference | TWA | | STEL | |
|---|------------|-----|-----------|------|----|
| Aluminium oxide (a) | ASCC (AUS) | -- | 10 mg/m3 | -- | -- |
| Calcium carbonate | ASCC (AUS) | -- | 10 mg/m3 | -- | -- |
| Calcium oxide | ASCC (AUS) | -- | 2 mg/m3 | -- | -- |
| Iron oxide fume (Fe ₂ O ₃) (as Fe) | ASCC (AUS) | -- | 5 mg/m3 | -- | -- |
| Magnesium oxide (fume) | ASCC (AUS) | -- | 10 mg/m3 | -- | -- |
| Silica, Crystalline Quartz | ASCC (AUS) | -- | 0.1 mg/m3 | -- | -- |

Biological Limits No biological limit allocated.

Engineering Controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE Wear dust-proof goggles and PVC or rubber gloves. When using large quantities or where heavy contamination is likely, wear: coveralls. At high dust levels, wear: a Powered Air Purifying Respirator (PAPR) with Class P3 (Particulate) filter or a Class P3 (Particulate) respirator. Where an inhalation risk exists, wear: a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------------|---------------------------------|------------------------------|-------------------------|
| Appearance | WHITE LUMPS, GRANULES OR POWDER | Solubility (water) | 1.6 g/L (Approximately) |
| Odour | ODOURLESS | Specific Gravity | 3.3 - 3.5 |
| pH | 13 | % Volatiles | NOT AVAILABLE |
| Vapour Pressure | NOT AVAILABLE | Flammability | NON FLAMMABLE |
| Vapour Density | NOT AVAILABLE | Flash Point | NOT RELEVANT |
| Boiling Point | NOT AVAILABLE | Upper Explosion Limit | NOT RELEVANT |
| Melting Point | > 2500°C | Lower Explosion Limit | NOT RELEVANT |
| Evaporation Rate | NOT AVAILABLE | | |

10. STABILITY AND REACTIVITY

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| Chemical Stability | Unstable. Reacts violently with water. |
| Conditions to Avoid | Avoid contact with incompatible substances. |
| Material to Avoid | Incompatible with hydrofluoric acid (violently) and phosphorus pentoxide. Reacts (potentially vigorously) with water generating heat and evolving calcium hydroxide. Also violently incompatible with boron oxide and calcium chloride, boron trifluoride, chlorine trifluoride, fluorine, hydrogen fluoride, phosphorus pentoxide and water. |
| Hazardous Decomposition Products | May evolve toxic gases if heated to decomposition. |
| Hazardous Reactions | Hazardous polymerization is not expected to occur. |

11. TOXICOLOGICAL INFORMATION

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|------------------------------|---|
| Health Hazard Summary | Corrosive. This product has the potential to cause adverse health effects. Use safe work practices to avoid eye or skin contact and 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. Chronic exposure to crystalline silica may cause lung fibrosis (silicosis), however due to the low levels of crystalline silica in this product, chronic health effects are not anticipated with normal use. Crystalline silica is classified as carcinogenic to humans (IARC Group 1). |
| Eye | Corrosive - irritant. Contact may result in irritation, lacrimation, pain, redness, corneal burns and possible permanent damage. Severe irritant upon contact with powder/ dust. |
| Inhalation | Corrosive. Over exposure to dust may result in severe mucous membrane irritation of nose and throat, coughing and bronchitis. |
| Skin | Corrosive. Contact with powder or wetted form may result in rash and dermatitis. |
| Ingestion | Corrosive. Ingestion may result in ulceration and burns to the mouth and throat, nausea, vomiting, abdominal pain and diarrhoea. |
| Toxicity Data | QUARTZ (SILICA CRYSTALLINE) (14808-60-7) LCLo (Inhalation): 300 ug/m ³ /10 years (human) LDLo (Intratracheal): 200 mg/kg (rat) LDLo (Intravenous): 20 mg/kg (dog) TCLo (Inhalation): 16 000 000 particles/ft ³ /8 hours/17.9 years (human-fibrosis) CALCIUM CARBONATE (471-34-1) LD50 (Ingestion): 6450 mg/kg (rat) IRON (III) OXIDE (1309-37-1) LDLo (Subcutaneous): 30 mg/kg (dog) |

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. 6N 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

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

| | | | | | |
|----------------------|----------------|---------------------|----------------|---------------------------|----------------|
| Shipping Name | None Allocated | | | | |
| UN No. | None Allocated | DG Class | None Allocated | Subsidiary Risk(s) | None Allocated |
| Packing Group | None Allocated | Hazchem Code | None Allocated | | |
| IATA | | | | | |
| Shipping Name | CALCIUM OXIDE | | | | |
| UN No. | 1910 | DG Class | 8 | Subsidiary Risk(s) | None Allocated |
| Packing Group | III | | | | |
| IMDG | | | | | |
| Shipping Name | None Allocated | | | | |
| UN No. | None Allocated | DG Class | None Allocated | Subsidiary Risk(s) | None Allocated |
| Packing Group | 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 The clay contained in this product is described as calcined clays and shales.

EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).

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.

ABBREVIATIONS:

ADB - Air-Dry Basis.

BEI - Biological Exposure Indice(s)

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

CNS - Central Nervous System.

EC No - European Community Number.

IARC - International Agency for Research on Cancer.

M - moles per litre, a unit of concentration.

mg/m³ - Milligrams per cubic metre.

NOS - Not Otherwise Specified.

NTP - National Toxicology Program.

OSHA - Occupational Safety and Health Administration.

pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).

Product Name **QUICKLIME (BORAL CEMENT)**

ppm - Parts Per Million.
RTECS - Registry of Toxic Effects of Chemical Substances.
TWA/ES - Time Weighted Average or Exposure Standard.

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

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert 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.

Report Status

This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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End of Report