

# Material Safety Data Sheet (MSDS)



MSDS No. CA 001

## Portland Cement

### Section 1: Identification of the Material and Supplier

#### Company Details:

Cement Australia Pty Limited

ABN 75 104 053 474

12 Station Avenue

Darra

Queensland 4075

Tel: 1300 CEMENT (1300 236 368)

Fax: 1800 CEMENT (1800 236 368)

Website: [www.cementaustralia.com.au](http://www.cementaustralia.com.au)

#### Manufacturing Plants

Gladstone: Landing Rd, Fisherman's Landing, Gladstone QLD 4680

Brisbane: 77 Pamela St, Pinkenba QLD 4008

Kandos: Jamieson St, Kandos NSW 2848

Railton: Cement Works Rd, Railton, TAS 7305

**Product:** Portland Cement

**Other Names:** General Purpose Cement  
Shrinkage Limited Cement  
HE (High Early) Cement  
Off White Cement  
Grey Cement

**Use:** Portland Cement is used as a binder in concrete, concrete masonry, mortar and grouts. It is also used in the manufacture of fibre cement products, in soil stabilisation in building construction and civil engineering projects.

### Section 2: Hazards Identification

Hazardous Substance. Non-dangerous Goods

#### Risk Phrases

**R20/21/22:** Harmful by inhalation, in contact with skin and if swallowed.

**R36/37/38:** Irritating to eyes, respiratory system and skin.

**R43:** May cause sensitisation by skin contact.

**R66:** Repeated exposure may cause skin dryness or cracking.

#### Safety Phrases

**S22:** Do not breathe dust.

**S24/25:** Avoid contact with skin and eyes.

**S29:** Do not empty into drains.

**S36/37/39:** Wear suitable protective clothing, gloves and eye/face protection.

## Section 3: Composition/Information on Ingredients

Portland Cement consists of a crystalline mass manufactured from substances mined from the earth's crust. It contains trace amounts of naturally occurring, but potentially hazardous chemical entities including metals such as chromium and nickel and crystalline silica. All significant constituents are listed below:

Chemical Entity	Proportion	CAS Number
Portland Cement Clinker	<97%	65997-15-1
Gypsum (CaSO <sub>4</sub> 2H <sub>2</sub> O)	2-5%	10101-41-4
Limestone (CaCO <sub>3</sub> )	0-7.5%	1317-65-3
Calcium Oxide	0-3%	1305-78-8
Hexavalent Chrome (Cr VI)	<20 ppm	1333-82-0
Crystalline Silica (Quartz)	<1%	14808-60-7

## Section 4: First Aid Measures

<b>Swallowed:</b>	Rinse mouth and lips with water. Do not induce vomiting. Give water to drink to dilute stomach contents. If symptoms persist, seek medical attention.
<b>Eyes:</b>	Flush thoroughly with flowing water for 15 minutes to remove all traces. If symptoms such as irritation or redness persist, seek medical attention. If wet cement is splashed in the eye, always treat as above, and seek urgent medical attention.
<b>Skin:</b>	Remove heavily contaminated clothing immediately. Wash off skin thoroughly with water. Use a mild soap if available. Shower if necessary. Seek medical attention for persistent irritation or burning of the skin.
<b>Inhaled:</b>	Remove to fresh air, away from dusty area. If symptoms persist, seek medical attention.
<b>First Aid Facilities:</b>	Eye wash station. Washing facilities with running water.
<b>Advice to Doctor:</b>	Treat symptomatically. Wet cement burns to skin or eye may result in corrosive caustic burns. Ingestion of significant amounts of cement dry or wet is unlikely. Do not induce emesis or perform gastric lavage. Neutralization with acidic agents is not advised because of increased risks of exothermic burns. Water-mineral oil soaks may aid in removing hardened cement from the skin. Ophthalmological opinion should be sought for ocular burns..

## Section 5: Fire Fighting Measures

<b>Fire/Explosion Hazard:</b>	None
<b>Hazchem Code:</b>	None allocated
<b>Flammability:</b>	Not flammable
<b>Extinguishing Media:</b>	None required
<b>Hazards from Combustion Products:</b>	None
<b>Special Protective Precautions and equipment for fire fighters:</b>	None required

## Section 6: Accidental Release Measures

<b>Spills:</b>	Spills are best cleaned up by vacuum device to avoid generating airborne dust. Recommendations on Exposure Control and Personal Protection should be followed during spill clean-up. Keep product out of storm water and sewer drains. Wetting during clean-up will cause formation of setting cement.
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## Section 7: Handling and Storage

<b>Handling:</b>	When supplied in bags these need to be handled in accordance with manual handling Regulations and Code of Practice.
<b>Storage:</b>	Protect from moisture to prevent hardening. Storage of cement may be in concrete silos, steel bins, or plastic lined multi-ply paper bags.

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## Section 8: Exposure Controls/Personal Protection

<b>Exposure Limits:</b>	<b>National Occupational Health &amp; Safety Commission (NOHSC) Australia Occupational Exposure Standard:</b>  Exposure to dust should be kept as low as practicable, and below the following OES. Portland Cement: 10mg/m <sup>3</sup> TWA (time-weighted average) as inspirable dust. Crystalline silica (quartz): 0.1 mg/m <sup>3</sup> TWA as respirable dust (≤ 7 microns particle equivalent aerodynamic diameter). Chromium VI (hexavalent): 0.05 mg/m <sup>3</sup> - sensitiser.
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<b>Engineering Controls:</b>	All work with dry cement should be carried out in such a way as to minimise dust generation, exposure to dust and repeated or extended skin contact. When handling dry cement, use local mechanical ventilation or extraction in areas where dust could escape into the work environment. For bulk deliveries, closed pumping systems are recommended. For handling of individual bags, follow instructions below if no local exhaust ventilation is available. Local dust extraction and collection may be used, if necessary, to control airborne dust levels. Work methods and engineering should aim to minimise contact with wet cement onto exposed skin. Work areas should be cleaned regularly.
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### Personal Protection:

<b>Skin:</b>	Minimise contact with Portland Cement materials. When handling dry or wet cement, wet concrete, mortar or grout, personnel should wear protective clothing and impervious footwear, and gloves such as PVC (see Australian and New Zealand Standards AS/NZS 4501 and AS 2161). Never kneel in wet cement, or allow extended contact of skin with wet cement.  Remove clothing which has become contaminated with wet or dry cement to avoid prolonged contact with the skin. If cement gets into boots, remove socks and boots immediately and wash skin thoroughly. Wash work clothes regularly. To avoid contamination of face and lips and ingestion, wash hands before eating or smoking.
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<b>Eyes:</b>	Splash resistant Safety Glasses with side shields or safety goggles (AS/NZ 1336) or a face shield should be worn to ensure all contact with eyes is avoided.
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<b>Respiratory:</b>	Where engineering and handling controls are not adequate to minimise exposure to total dust and to respirable crystalline silica wear a suitable P1 or P2 particulate respirator (AS/NZS 1715 and AS/NZS 1716). Use only respirators that bear the Australian Standards mark and are fitted and maintained correctly. For dust levels approaching or exceeding the NES (see above) a more effective particulate respirator as described in AS/NZS 1715 should be worn. Procedures for effective use of respirators should be applied and supervised..
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## Section 9: Physical and Chemical Properties

<b>Appearance:</b>	A fine powder ranging in colour from grey to off-white
<b>Odour:</b>	No distinctive odour
<b>Boiling/Melting Point:</b>	Melting point >1200°C
<b>Vapour Pressure:</b>	Not applicable
<b>Specific Gravity:</b>	3.0 – 3.2
<b>Flash Point:</b>	Non applicable
<b>Flammability Limits:</b>	Not applicable
<b>Solubility In Water:</b>	Slight, reacts on mixing with water forming an alkaline (caustic) solution (pH >11)
<b>Particle Size:</b>	Up to 50% of the fresh dry material may be respirable (below 10 microns)

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## Section 10: Stability and Reactivity

<b>Chemical Stability:</b>	Chemically stable
<b>Conditions to Avoid:</b>	Keep free of moisture
<b>Incompatible Materials:</b>	None
<b>Hazardous Decomposition Products:</b>	None
<b>Hazardous Reactions:</b>	None

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## Section 11: Toxicological Information

Portland Cements are stable substances, compatible with most other building materials, will not decompose into hazardous by-products and do not polymerise.

### Short Term (Acute) Exposure

<b>Swallowed:</b>	Unlikely under normal industrial use. Mildly abrasive and corrosive to mouth and throat if swallowed. May cause nausea, stomach cramps and constipation.
<b>Eyes:</b>	Irritating and corrosive to the eyes and may cause alkaline burns. Cement dust is irritating to the eyes. Exposure to dust may aggravate existing eye irritations.
<b>Skin:</b>	Dust is irritating and drying to the skin. Direct contact with wet cement may cause serious skin burns. Within 12 to 48 hours (after one- to six-hour exposures) possible first, second or third degree burns may occur. There may be no obvious pain at the time of the exposure. Chronic skin disorders may be aggravated by exposure to dust or contact with wet cement.
<b>Inhaled:</b>	Cement dust is irritating to the nose, throat and respiratory tract causing coughing and sneezing. Pre-existing upper respiratory and lung diseases including asthma and bronchitis may be aggravated.

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## Section 11: Toxicological Information (Cont'd)

### Long Term (Chronic) Exposure

<b>Eyes:</b>	Dust may cause irritation and inflammation of the cornea.
<b>Skin:</b>	Repeated contact causes irritation and drying of the skin and can result in skin reddening and skin rash (dermatitis). Over time this may become chronic and can also become infected. Persons who are allergic to chromium may develop an allergic dermatitis which aggravates the irritant effects and this combination can lead to chronic cement dermatitis and serious disability particularly affecting the hands.
<b>Inhaled:</b>	<p>Repeated exposure to the dust may result in increased nasal and respiratory secretions and coughing. Inflammation of lining tissue of the respiratory system may follow repeated exposure to high levels of dust, with increased risk of bronchitis and pneumonia.</p> <p>Repeated and prolonged exposure to dust levels which exceed the OES for crystalline silica (see above) may occur. This can cause bronchitis, and silicosis (scarring of the lung). Long term overexposure to respirable crystalline silica dust may increase the risk of other irreversible and serious disorders including scleroderma (a disease affecting the connective tissue of the skin, joints, blood vessels and internal organs).</p> <p>Cement (Portland Cement) is not classified as a carcinogen by NOHSC. Of the ingredients Hexavalent Chromium (Cr VI) is classified as a carcinogen by NOHSC. There is debate in the medical literature concerning whether there is any risk of lung cancer arising from long term high overexposure to respirable crystalline silica. Risk of lung cancer has not been identified from using Portland Cements containing silica. The International Agency for Research on Cancer (IARC) has classified crystalline silica, inhaled in the form of quartz or cristobalite from occupational sources, as carcinogenic to humans (Group 1). NOHSC has not classified crystalline silica as a carcinogen.</p>

## Section 12: Ecological Information

<b>Ecotoxicity:</b>	Product forms an alkaline slurry when mixed with water.
<b>Persistence and Degradability:</b>	Product is persistent and would have a low degradability.
<b>Mobility:</b>	A low mobility would be expected in a landfill situation.

## Section 13: Disposal Considerations

Portland Cement can be treated as a common waste for disposal or dumped into a landfill site, in accordance with local authority guidelines.

Keep material out of storm water and sewer drains.

Measures should be taken to prevent dust generation during disposal, and exposure and personal precautions should be observed (see above).

## Section 14: Transport Information

Transportation is done in bulk or bag form by Ship, Rail and Road.

<b>UN Number:</b>	None allocated
<b>Proper Shipping Name:</b>	None allocated
<b>Class and Subsidiary Risk:</b>	None allocated
<b>Packing Group:</b>	None allocated
<b>Special precautions for user:</b>	Avoid generating and breathing dust
<b>Hazchem Code:</b>	None allocated

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## Section 15: Regulatory Information

Portland cement is not classified as Dangerous Goods.

Classified as Hazardous according to the criteria of the National Occupational Health and Safety Commission (NOHSC) Approved Criteria For Classifying Hazardous Substances [NOHSC:1008] 3rd Edition

Exposures by inhalation to high levels of dust may be regulated under the Hazardous Substances Regulations (State) as they are applicable to Respirable Crystalline Silica, requiring exposure assessment, controls and health surveillance (NOHSC).

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## Section 16: Other Information

<b>For further information on this product contact:</b>	Telephone: (07) 3375 0501 (Business Hours) Facsimile: (07) 3375 0473
<b>Emergency Contact Number:</b>	Contact Person: Technical Manager Telephone: (07) 3375 0501 (Business Hours) or Poisons Information Centre 13 11 26

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Next Review Date for this MSDS: 31 December 2016.

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### Australian and New Zealand Standards:

AS 2161: Industrial Safety Gloves and Mittens (excluding electrical and medical gloves).

AS/NZ 1336: Recommended Practices for Occupational Eye Protection.

AS/NZS 1715: Selection, use and maintenance of respiratory protective devices.

AS/NZS 1716: Respiratory protective devices.

AS/NZS 4501: Occupational protective clothing.

### Advice Note:

Cement Australia believes the information in this document to be accurate as at the date of preparation noted below, but, to the maximum extent permitted by law, Cement Australia accepts no responsibility for any loss or damage caused by any person acting or refraining from action because of this information.

The provision of this information should not be construed by anyone as a recommendation to use this product. In particular, no one should use any product in violation of any patent or other intellectual proprietary rights or in breach of any statute or regulation.

Users should rely on their own knowledge and inquiries and make their own determination as to the applicability of this information in relation to their particular purposes and specific circumstances. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace and in conjunction with other substances or products.

This MSDS must be reviewed before 31 December 2016.