



# MATERIAL SAFETY DATA SHEET

## *Pre-Mixed Concrete*

### SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<b>Product Name:</b>	<b>Pre-Mixed Concrete</b>
<b>Recommended Use:</b>	Premixed concrete is used as a structural component in building and civil engineering. It is delivered to a location and discharged into the possession of the purchaser or agent for subsequent handling and placement in its intended position.
<b>Applicable In:</b>	Australia
<b>Supplier:</b>	Excel Concrete Pty Ltd A.B.N. 74 010 891 773
<b>Address:</b>	1044 Lytton Rd, Murarrie, Qld 4172, Australia
<b>Telephone:</b>	07 3331 1555 (8-00 am to 5-00 pm Mon to Fri only)
<b>Facsimile:</b>	07 3331 1500
<b>Website:</b>	www.excelconcrete.com.au
<b>Emergency Phone Number:</b>	000 Fire Brigade and Police (available in Australia only)
<b>Poisons Information Centre:</b>	13 11 26 (available in Australia only)

This Material Safety Data Sheet (MSDS) is issued by the Supplier in accordance with National standards and guidelines from Safe Work Australia (SWA – formerly ASCC/NOHSC). The information in it must not be altered, deleted or added to. The Supplier will not accept any responsibility for any changes made to its MSDS by any other person or organization. The Supplier will issue a new MSDS when there is a change in product specifications and/or Standards, Codes, Guidelines, or Regulations.

### SECTION 2: HAZARD IDENTIFICATION

**STATEMENT OF HAZARDOUS NATURE:** Classified as **Hazardous** according to the Approved Criteria For Classifying Hazardous Substances [NOHSC:1008] 3<sup>rd</sup> Edition.

**Pre-Mixed Concrete** is classified as **Non-Dangerous** Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Risk Phrases	Safety Phrases
<p><b>R21/22:</b> Harmful in contact with skin and if swallowed.</p> <p><b>R43:</b> May cause sensitisation by skin contact.</p> <p><b>R48/20:</b> Danger of serious damage to health by prolonged exposure through inhalation (applies to concrete dust).</p>	<p><b>S22:</b> Do not breathe dust.</p> <p><b>S24/25:</b> Avoid contact with skin and eyes.</p> <p><b>S28:</b> After contact with skin wash immediately with plenty of water.</p> <p><b>S29:</b> Do not empty into drains.</p> <p><b>S36/37/39:</b> Wear suitable protective clothing, gloves and eye/face protection.</p>

### SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

<b>Chemical Name:</b>	<b>Synonyms:</b>	<b>Proportion:</b>	<b>CAS Number:</b>
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Portland cement		10-60%	65997-15-1
Aggregate containing crystalline silica (quartz)	Sand, crushed stone, gravel, slag	>85%	14808-60-7
Water		<20%	7732-18-5
<i>OTHER INGREDIENTS MAY BE ADDED:</i>			
Polypropylene or steel		<10%	---
Polystyrene beads (reduced density)		<10%	9003-53-6
Metallic oxide pigments (colouring)		<4%	---
Silica fume (amorphous silica)		<4%	7699-41-4
Admixtures, such as water reducers, set retarders, set accelerators, plasticisers, and waterproofing agents (refer AS 1478)		<1%	---

**Notes:** Crystalline-silica (quartz) may be a constituent of other additives, e.g fly ash, used in any particular concrete mix. Cement in concrete contains traces (2-10 ppm) of Chromium VI (hexavalent chromium). Cementitious additives may contain traces of metals.

#### 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 concrete is splashed in the eye, always treat as above, and get 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. Wash facilities.
<b>Advice to Doctor:</b>	Treat symptomatically. Wet concrete burns to skin or eye may result in corrosive caustic burns. Ingestion of significant amounts of concrete 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 concrete from the skin. Ophthalmological opinion should be sought for ocular burns.

#### SECTION 5: FIRE FIGHTING MEASURES

<b>Flammability:</b>	Non-flammable
<b>Suitable extinguishing media:</b>	Use carbon dioxide, foam, dry chemical or water spray as required for fire in surrounding materials.
<b>Hazards from combustion products:</b>	None
<b>Special protective precautions and equipment for fire fighters:</b>	None
<b>HAZCHEM Code:</b>	None allocated

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>Emergency Procedures:</b>	Recommendations on exposure control and personal protection should be followed during spill clean-up.
<b>Methods and materials for containment and clean up:</b>	If spillage is dry, shovel into containers. Avoid generating dust. If spillage is wet, shovel into containers and then wash down area with water, but prevent run-off from entering storm water and sewer drains and watercourses.

## SECTION 7: HANDLING AND STORAGE

<b>Precautions for safe handling:</b>	Wet concrete is a heavy material, and appropriate control of manual handling risk is required when barrowing, shovelling or carrying quantities of wet concrete. Manual handling should be in accordance with Manual Handling Regulations and Codes.
<b>Conditions for safe storage:</b>	Wet premixed concrete has a limited life after batching and will set hard. The rate of setting depends on the ambient conditions and amount of agitation. May be stored for very short periods of time (less than twenty minutes) in self-cleansing hoppers with sides at an angle of at least 45° to the horizontal.
<b>Incompatibilities:</b>	Contact with sugars, acids or solutions of either will cause a serious degradation of the quality of the material. A safety hazard is created by such contact due to the potential failure of the structure being constructed. Similarly, handling and transporting the material at temperatures less than 0°C or greater than 30°C may cause a degradation of the quality of the material with a consequent safety hazard arising from the potential failure of the structure being constructed.

## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>National Exposure Standards:</b>	<b>National Occupational Exposure Standard (NES), Safe Work Australia (formerly ASCC/NOHSC)</b>  Crystalline silica (quartz): TWA – 0.1 mg/m <sup>3</sup> respirable dust. (≤ 7 microns particle equivalent aerodynamic diameter)
<b>Notes on Exposure Standards:</b>	All occupational exposures to atmospheric contaminants should be kept to as low a level as is workable (practicable) and in all cases to below the National Standard.  TWA (Time Weighted Average): the time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.
<b>Biological Limit Values:</b>	No biological limit allocated.
<b>ENGINEERING CONTROLS</b>	
<input type="checkbox"/> <b>Ventilation:</b>	If placing concrete in enclosed areas or a confined space, ensure adequate forced ventilation. Local mechanical ventilation may be required in areas where spray droplets from wet concrete or dry dust could escape into the work environment.
<input type="checkbox"/> <b>Special Consideration for Repair &amp;/or Maintenance of Contaminated Equipment:</b>	Recommendations on Exposure Control and Personal Protection should be followed. When dry concrete dust is present, ensure exposures to respirable crystalline silica (quartz) are maintained below NES.
<b>PERSONAL PROTECTION</b>	
<input type="checkbox"/> <b>Personal Hygiene:</b>	Wash hands before eating, drinking, using the toilet, or smoking. Wash work clothes regularly.
<input type="checkbox"/> <b>Skin Protection:</b>	Minimise contact with concrete materials. Never kneel in wet concrete, or allow extended contact of skin with wet concrete.  When handling wet concrete, mortar or grout, personnel should wear loose

	comfortable protective clothing and impervious boots, (AS/NZS 4501), suitable impervious gloves such as PVC (AS 2161).  Remove clothing which has become contaminated with wet or dry concrete to avoid prolonged contact with the skin. If concrete gets into boots, remove socks and boots immediately and wash skin thoroughly.
<input type="checkbox"/> <b>Eye Protection:</b>	Avoid contact with eyes. Splash resistant safety glasses with side shields, safety goggles (AS/NZ 1336), or a face-shield should be worn.
<input type="checkbox"/> <b>Respiratory Protection:</b>	In dusty environments use a respirator (filter mask) such as Class P1 or P2 (AS/NZS 1715 and AS/NZS 1716).

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Pre-mixed Concrete is a plastic mixture of water, cementitious materials, and aggregates (sand, stone or gravel). Plasticity ranges from near liquid to pourable slurry to a friable soft solid. The colour is usually grey. If pigments are used, the colour may range from near-white to any other colour.
<b>Odour:</b>	Some added ingredients used in concrete may create a smell of ammonia.
<b>pH, at stated concentration:</b>	> 7.0
<b>Vapour Pressure:</b>	Not applicable
<b>Vapour Density (air = 1):</b>	Not applicable
<b>Boiling Point/Range (°C):</b>	Not determined
<b>Freezing/Melting Point (°C):</b>	>1200
<b>Solubility in water:</b>	Not soluble, or slightly soluble. Reacts on mixing with water forming an alkaline (caustic) solution (pH >11).
<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	2.5
<b>Flash Point:</b>	Not applicable
<b>Flammable (Explosive) Limits:</b>	Not applicable
<b>Autoignition Temperature:</b>	Not applicable

## SECTION 10: STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable under normal conditions
<b>Conditions to avoid:</b>	Keep away from water – must be kept dry
<b>Incompatible Materials:</b>	Sugars, acids or solutions of either (see Section 7)
<b>Hazardous Decomposition Products:</b>	None
<b>Hazardous Reactions:</b>	None

## SECTION 11: TOXICOLOGICAL INFORMATION

Health effects information is based on reported effects in use from overseas and Australian reports.

### Health Effects: Acute (short term)

<b>Swallowed:</b>	Unlikely in normal use in the industrial situation. Abrasive and highly irritant (burning) to mouth and throat. May cause nausea, and stomach cramps.
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<b>Eyes:</b>	Irritating and may cause alkaline (caustic) burns to the eyes. Splash of wet concrete into the eye can cause serious and rapid corrosive burning, with potential for permanent loss of vision.
<b>Skin:</b>	Irritating, abrasive and drying to the skin. May cause alkaline (caustic) burns if direct contact is made with wet concrete for any length of time, leading to second or even third degree burns.
<b>Inhaled:</b>	Concrete 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.

#### Health Effects: Chronic (long term)

<b>Eyes:</b>	In dust form it may cause 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) which may become persistent. Persons who are allergic to chromium may develop an allergic dermatitis.
<b>Inhaled:</b>	In dust form it may cause inflammation of lining tissue of the respiratory system. Repeated inhalation of dust containing crystalline silica can cause bronchitis, silicosis (scarring of the lung), and may increase the risk of other serious disorders including scleroderma (a disease affecting the connective tissue of the skin, joints, blood vessels and internal organs).

#### Additional Notes

<b>Long Term Effects:</b>	Long term occupational over-exposure or prolonged breathing-in (or inhalation) of crystalline silica dust at levels above the NES carries the risk of causing serious and irreversible lung disease, including bronchitis, and silicosis (scarring of the lung). It may also increase the risk of other irreversible and serious disorders including scleroderma (a disease affecting the skin, joints, blood vessels and internal organs) and other auto-immune disorders.  SWA has not classified crystalline silica as a carcinogen.
<b>Special Toxic Effects:</b>	Inhalation of dust, including crystalline silica dust, is considered by medical authorities to increase the risk of lung disease due to tobacco smoking.

### SECTION 12: ECOLOGICAL INFORMATION

<b>Eco-toxicity:</b>	Product forms an alkaline slurry when mixed with water, and heavy contamination of water courses and ecologically sensitive land must be avoided.
<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

<b>Disposal methods and containers:</b>	Pre-Mixed Concrete can be treated as a common waste for disposal in accordance with local authority guidelines. Keep 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).
<b>Special precautions for landfill or incineration:</b>	Pre-Mixed Concrete can be dumped into a landfill site in accordance with local authority guidelines.

### SECTION 14: TRANSPORT INFORMATION

<b>UN number:</b>	None allocated
<b>UN Proper Shipping Name:</b>	None allocated
<b>Class and Subsidiary Risk :</b>	None allocated

<b>Packaging Group:</b>	None allocated
<b>Special Precautions for User:</b>	Transport equipment should be strong enough to contain a fluid with an effective specific gravity of 2.5.
<b>HAZCHEM code:</b>	None allocated

## SECTION 15: REGULATORY INFORMATION

<b>Poisons Schedule:</b>	Not scheduled
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 (ASCC/NOHSC).	

## SECTION 16: OTHER INFORMATION

<b>Date of last revision of this MSDS:</b>	31 March 2011
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### Australian Standards References:

AS/NZS 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 2161	Industrial Safety Gloves and Mittens (excluding electrical and medical gloves)

### Other References:

NOHSC:2011(2003)	National Code of Practice for the Preparation of Material Safety Data Sheets 2 <sup>nd</sup> Edition, April 2003, National Occupational Health and Safety Commission.
NOHSC:10005(1999)	List Of Designated Hazardous Substances, April 1999, National Occupational Health and Safety Commission, Sydney.
NOHSC:2007(1994)	National Code of Practice for the Control of Workplace Hazardous Substances (Australian States have similar Codes of Practice in each State).
NOHSC:2012(1994)	National Code of Practice for the Labelling of Workplace Substances, March 1994, Australian Government Publishing Service, Canberra.
NES	National Occupational Exposure Standards for Workplace Atmospheric Contaminants (NES) Australian Safety and Compensation Council, ASCC (formerly NOHSC) 1995 as amended.
ADG Code	Australian Dangerous Goods Code 7 <sup>th</sup> Edition.

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