

## SAFETY DATA SHEET

### *Holcim Premixed Concrete*

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


|                                    |   |
|------------------------------------|---|
| <b>Product Name:</b>               | <b>Holcim Premixed Concrete</b>   |
| <b>Other Names:</b>                | Holcim Concrete, Holcim Shotcrete, Holcim Superspray, Holcim Readypave®   |
| <b>Recommended Use:</b>            | Premixed concrete is used for a wide variety of applications in building and civil engineering projects. When sprayed it is used for encapsulating steel work as well as structural applications. |
| <b>Applicable In:</b>              | Australia   |
| <b>Supplier:</b>                   | Holcim (Australia) Pty Ltd ABN 87 099 732 297   |
| <b>Address:</b>                    | Level 8, Tower B, 799 Pacific Hwy, Chatswood, NSW 2067, Australia   |
| <b>Telephone:</b>                  | +61 2 9412 6600 (8-00 am to 5-30 pm Mon to Fri only)  |
| <b>Facsimile:</b>                  | +61 2 9412 6601   |
| <b>Website:</b>                    | www.holcim.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 Safety Data Sheet (SDS) 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 SDS by any other person or organization. The Supplier will issue a new SDS 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 criteria of Safe Work Australia (SWA – formerly ASCC/NOHSC) Approved Criteria For Classifying Hazardous Substances [NOHSC:1008] 3rd Edition.

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

| GHS Classification   | GHS Signal Word | GHS Pictogram/s  |
|--|-----------------|--|
| Acute Toxicity Category 4<br>Skin Corrosion Category 1<br>Skin Sensitisation Category 1<br>Specific Target Organ Toxicity (Repeated Exposure) Category 2 | <b>DANGER</b>   |  |

| GHS Hazard statements  | GHS Precautionary statements   |
|--|--|
| <p>H302 – Harmful if swallowed</p> <p>H314 – Causes severe skin burns and eye damage</p> <p>H317 – May cause an allergic skin reaction</p> <p>H373 – May cause damage to organs by inhalation (<i>dust from dried product</i>)</p> | <p>P280 – Wear protective gloves/clothing/eye protection.</p> <p>P301 + P330 + P331 – If swallowed, rinse mouth. Do NOT induce vomiting.</p> <p>P303 + P361 + P353 – If on skin, immediately remove all contaminated clothing. Rinse skin with water.</p> <p>P305 + P351 + P338 – If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P260 – Do not breathe dust.</p> <p>P312 – Call a Poison Centre or doctor if you feel unwell.</p> <p>P270 – Do not eat, drink or smoke when using this product.</p> <p>P264 – Wash thoroughly after handling.</p> <p>P333 + P313 – If skin irritation or rash occurs, get medical advice/attention.</p> <p>P272 – Contaminated work clothing should not be allowed out of the workplace.</p> <p>P363 – Wash contaminated clothing before reuse.</p> <p>P501 – Dispose of contents/container in accordance with local regulations.</p> |

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name:  | Synonyms:                   | Proportion: | CAS Number: |
|---|-----------------------------|-------------|-------------|
| Aggregate <sup>1</sup>  | Crushed stone, gravel, slag | Approx. 60% | 14808-60-7  |
| Crystalline silica  | Sand; quartz                | Approx. 20% | 14808-60-7  |
| Portland cement <sup>2</sup>  |                             | Approx. 10% | 65997-15-1  |
| 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:

1. Dependent on quarry location, the aggregate rock type can be described as meta-dolerite, amphibolite, granite with dolerite dykes or greenstone with varying concentrations of actinolite, epidote, feldspar, chlorite, calcite, sphenechlorite, pyroxene and limonite. In some cases natural rock dolerite aggregates may contain traces (<0.01% by weight) of fibrous actinolite.

2. Cement in concrete contains trace amounts (2-10 ppm) of Chromium VI (hexavalent chromium).

These trace materials are not present to any significant extent.

### SECTION 4: FIRST AID MEASURES

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| <b>Swallowed:</b> | Rinse mouth and lips with water. Do not induce vomiting. Give water to drink to dilute stomach |
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|                              | 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

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| <b>Suitable extinguishing media:</b>                                  | Use carbon dioxide, foam, dry chemical or water spray as required for fire in surrounding materials. |
| <b>Specific hazards:</b>  | None   |
| <b>Special protective equipment and precautions for firefighters:</b> | None   |
| <b>HAZCHEM Code:</b>  | None allocated   |

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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| <b>Personal precautions, protective equipment and emergency procedures:</b> | Recommendations on exposure control and personal protection should be followed during spill clean-up.   |
| <b>Environmental precautions:</b>   | Prevent run-off from entering storm water and sewer drains and watercourses.  |
| <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. |

## SECTION 7: HANDLING AND STORAGE

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| <b>Precautions for safe handling: Wet Concrete</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. Exposure to wet concrete via the skin can cause both immediate effects (e.g. alkali burns) and long term effects (e.g. dermatitis). Specific methods to prevent these occurring are referred to in Section 8. |
| <b>Precautions for safe handling: Dry Concrete</b> | The cutting, drilling or use of powered tools (e.g. saw or angle grinder) on dry concrete can cause dust to be generated which contains respirable crystalline silica. Control methods to prevent inhalation of these dusts and fibres are contained in Section 8.   |
| <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  |

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|  | 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. |
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**SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**

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| <b>Exposure Standards:</b>   | <p><b>Workplace Exposure Standards for Airborne Contaminants, Safe Work Australia</b></p> <p>Crystalline silica (quartz): TWA – 0.1 mg/m<sup>3</sup> respirable dust (≤ 7 microns particle equivalent aerodynamic diameter)</p> <p>Portland cement: TWA – 10 mg/m<sup>3</sup> as inspirable dust</p> <p>Total dust (of any type, or particle size): TWA – 10 mg/m<sup>3</sup></p> <p>Asbestos: TWA – 0.1 fibres/mL of air (fibrous actinolite is a form of asbestos)</p>  |
| <b>Notes on Exposure Standards:</b>  | <p>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 Workplace Exposure Standard (WES).</p> <p>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.</p>  |
| <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 WES.   |
| <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>   | <p>Minimise contact with wet concrete materials. Never kneel in wet concrete, or allow extended contact of skin with wet concrete.</p> <p>When handling wet concrete, mortar or grout, personnel should wear loose comfortable protective clothing, impervious boots (AS/NZS 4501), and suitable impervious gloves such as PVC (AS 2161).</p> <p>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.</p> |
| <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>  | <p>In dusty environments where dust may be generated from cutting or drilling dry concrete, use a wet method of cutting and drilling as the preferred method. Where this is not possible, use a respirator (filter mask) such as a P2 particulate respirator (AS/NZS 1715 and AS/NZS 1716).</p> <p>Dust control measures providing respiratory protection against crystalline silica dust</p>   |

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|  | <p>will also minimise and control any exposure to fibrous actinolite and chromium dust.</p> <p>Where concrete surfaces are being finished by grinding or polishing using power tools to obtain a very smooth or decorative surface, more respiratory protection and local exhaust ventilation is needed. The risk of dust levels exceeding exposure standards during these special operations on concrete surfaces should be assessed, and a higher level of dust control should be applied.</p> |
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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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| <b>Appearance:</b>  | Premixed 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>Odour threshold:</b>   | Not determined  |
| <b>pH:</b>  | > 7.0   |
| <b>Melting point:</b>   | >1200°C   |
| <b>Initial boiling point and range:</b>   | Not determined  |
| <b>Flash point:</b>   | Not applicable  |
| <b>Evaporation rate:</b>  | Not determined  |
| <b>Flammability:</b>  | Non-flammable   |
| <b>Upper/lower flammability or explosive limits:</b>  | Not applicable  |
| <b>Vapour pressure:</b>   | Not applicable  |
| <b>Vapour density:</b>  | Not applicable  |
| <b>Specific gravity (Relative density):</b>   | 2.5   |
| <b>Solubility:</b>  | Not soluble, or slightly soluble.<br>Reacts on mixing with water forming an alkaline (caustic) solution (pH >11).   |
| <b>Partition coefficient (n-octanol/water):</b>   | Not determined  |
| <b>Viscosity:</b>   | Not determined  |
| <b>Auto-ignition temperature:</b>   | Not applicable  |
| <b>Decomposition temperature:</b>   | Not determined  |
| <b>% Volatiles:</b>   | 0%  |
| <b>Volatile Organic Compounds (VOC) Content:</b><br>(as specified by the Green Building Council of Australia) | 0%  |

## SECTION 10: STABILITY AND REACTIVITY

|                             |                                |
|-----------------------------|--------------------------------|
| <b>Chemical Stability:</b>  | Stable under normal conditions |
| <b>Hazardous Reactions:</b> | None                           |
| <b>Conditions to avoid:</b> | Keep away from water           |

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| <b>Incompatible Materials:</b>           | Sugars, acids or solutions of either (see Section 7) |
| <b>Hazardous Decomposition Products:</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)

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| <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.   |
| <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)

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| <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

|                               |  |
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| <b>Long Term Effects:</b>     | <p>In some cases the aggregate in this product may contain traces of fibrous actinolite material, which is a form of asbestos (asbestiform fibres). Excessive long term exposures to asbestiform fibres can lead to mesothelioma, lung cancer and asbestosis. However, according to a statement from WA Government health authorities (14 November 2013):</p> <p><i>"Exposure monitoring results gathered during air monitoring programs at quarries and mine sites show that the levels of exposure from airborne mineral fibres are below the national occupational exposure standard and therefore present a low health risk."</i></p> <p>Long term occupational over-exposure or prolonged breathing-in (or inhalation) of crystalline silica dust at levels above the WES 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. IARC have recently classified respirable crystalline silica dust as carcinogenic to humans (IARC Group 1). This means it may can cause lung cancer. Exposure to respirable silica is negligible when handling wet concrete. In the case of dust from activities associated with dry concrete (e.g. cutting, drilling and finishing), the recommended controls outlined in Section 8 should be followed.</p> <p>Following considerable research and consultation with Government authorities, Holcim considers low exposures to concrete or dust containing such traces are without risk to health.</p> |
| <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

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| <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>Bioaccumulative potential:</b>     | There is no evidence to suggest bioaccumulation will occur.   |
| <b>Mobility in soil:</b>              | A low mobility would be expected in a landfill situation.   |

## SECTION 13: DISPOSAL CONSIDERATIONS

**Premixed Concrete** can be treated as a common waste for disposal and can be dumped into a landfill site 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).

## 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>Marine Pollutant:</b>             | No  |
| <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

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| <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. |               |

## SECTION 16: OTHER INFORMATION

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|---|---------------|
| <b>Date of last revision of this SDS:</b> | November 2016 |
|---|---------------|

### 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:1008 (2004)      | Approved Criteria for Classifying Hazardous Substances   |
| Model Code of Practice | Preparation of Safety Data Sheets for Hazardous Chemicals, December 2011, Safe Work Australia. |
| Model Code of Practice | Labelling of Workplace Hazardous Chemicals, December 2011, Safe Work Australia.                |

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|------------------------|--|
| Model Code of Practice | Managing Risks Of Hazardous Chemicals In The Workplace, July 2012, Safe Work Australia.  |
| WHS                    | Guidance on the Classification of Hazardous Chemicals under the WHS Regulations, April 2012, Safe Work Australia.  |
| ADG Code               | Australian Code for the Transport of Dangerous Goods by Road and Rail, 7 <sup>th</sup> edition, National Transport Commission.                             |
| WES                    | Workplace Exposure Standards For Airborne Contaminants, April 2013, Safe Work Australia.   |
| WES                    | Guidance On The Interpretation Of Workplace Exposure Standards For Airborne Contaminants, April 2013, Safe Work Australia.                                 |
| GHS                    | Globally Harmonized System of Classification and Labelling of Chemicals (GHS), 3 <sup>rd</sup> revised edition, United Nations, New York and Geneva, 2009. |
| GHS                    | Understanding the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), United Nations, New York and Geneva, 2010.                |
| HSIS                   | Hazardous Substances Information System (HSIS), internet advisory service, Safe Work Australia.  |
| HCIL                   | GHS Hazardous Chemical Information List (HCIL), internet advisory service, Safe Work Australia.  |

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END OF SDS