



The Australian Pipe Company

## MATERIAL SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name:	PRECAST GEOPOLYMER CONCRETE PRODUCTS AND PIPES	
Other Names:	None	
Use:	Variety of applications in buildings and civil engineering projects.	
Supplier Name:	Reinforced Concrete Pipes (Vic)	ABN 69 094 212 790
	Reinforced Concrete Pipes (Qld)	ABN 71 099 076 061
	Reinforced Concrete Pipes (WA)	ABN 66 054 592 442
Address:	Reinforced Concrete Pipes (Vic)	69-99 Ferris Road, Melton South Vic 3338
	Reinforced Concrete Pipes (Qld)	115 Pearson Road Yatala Queensland 4207
	Reinforced Concrete Pipes (WA)	Lot 90, Cocos Drive, Bibra Lake WA 6163
Telephone:	Reinforced Concrete Pipes (Vic)	(03) 9746 0600
	Reinforced Concrete Pipes (Qld)	(07) 3804 6266
	Reinforced Concrete Pipes (WA)	(08) 9434 4055
Facsimile:	Reinforced Concrete Pipes (Vic)	((03) 9746 9952
	Reinforced Concrete Pipes (Qld)	(07) 3804 6226
	Reinforced Concrete Pipes (WA)	(08) 9434 4196
Website:	www.rcpa.com.au	
Emergency Phone Number:	000 Fire Brigade and Police (available in Australia only)	
Poisons Information Centre:	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.

### 2. HAZARDS IDENTIFICATION

Precast Geopolymer Concrete Pipes and Products as supplied are **non-Hazardous**.

Precast Geopolymer Concrete Pipes and Products are classified as **non-Dangerous** Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

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

Dust from this product is classified as **Hazardous** according to the Approved Criteria For Classifying Hazardous Substances [NOHSC:1008] 3rd Edition.

When geopolymer concrete products are cut, sawn, abraded or crushed, dust is created which contains crystalline silica, some of which may be respirable (particles small enough to go into the deep parts of the lung when breathed in), and which is **Hazardous**.

The following risk and safety phrases refer **ONLY** to the dust of these products:

Risk Phrases	S22: Do not breathe dust.
Safety Phrases	R48/20: Danger of serious damage to health by prolonged exposure through inhalation.

### 3. COMPOSITION/ INFORMATION ON INGREDIENTS

INGREDIENT:	CONTENT:	CAS NUMBER:
Supplementary cementitious materials such as fly ash, blast furnace slag, silica fume (amorphous silica)	10-20%	----
Aggregate containing crystalline silica (quartz)	20-85%	14808-60-7
Water	<20%	7732-18-5
OTHER INGREDIENTS MAY BE ADDED:		
Steel rod and bar	<10%	----
Admixtures such as water reducers, set retarders, set accelerators, plasticisers, and waterproofing agents (refer AS 1478)	<1%	----

### 4. FIRST AID MEASURES

<b>Eye:</b>	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. If symptoms such as irritation or redness persist, seek medical attention.
<b>Inhalation:</b>	If inhaled, remove from contaminated area to fresh air. If symptoms persist, seek medical attention. Apply artificial respiration if not breathing.
<b>Skin:</b>	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair thoroughly with running water. Use a mild soap if available. Shower if necessary. Seek medical attention for persistent irritation or burning of the skin.
<b>Ingestion:</b>	Rinse mouth and lips with water. If swallowed, do not induce vomiting. For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).
<b>Advice to Doctor:</b>	Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

<b>Flammability:</b>	Non flammable. May evolve toxic gases if strongly heated.
<b>Fire and Explosion:</b>	No fire or explosion hazard exists.
<b>Extinguishing:</b>	Use carbon dioxide, foam, dry chemical or water spray as required for fire in surrounding materials.
<b>Hazchem Code:</b>	None Allocated.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Methods and materials for containment and clean up:</b>	Dust is best cleaned up by vacuum device to avoid making dust airborne. Wetting down before sweeping up dust may be a useful control measure. Recommendations on Exposure Controls / Personal Protection (see Section 8 below) should be followed during spill clean-up if conditions are dusty.
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## 7. STORAGE AND HANDLING

<b>Storage:</b>	No special requirements. Safety aspects of stockpiles and storage areas require risk assessment and control.
<b>Handling:</b>	Manual handling should be in accordance with Manual Handling Regulations and Codes. Use of safe work practices are recommended to avoid eye or excessive skin contact and inhalation. Observe good personal hygiene, including washing hands before eating.

## 8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

<b>National Exposure Standards:</b>	National Occupational Exposure Standard (NES), Safe Work Australia (formerly ASCC/NOHSC) Crystalline silica (quartz): TWA – 0.1 mg/m <sup>3</sup> respirable dust. (≤ 7 microns particle equivalent aerodynamic diameter). Total dust (of any type, or particle size): TWA – 10 mg/m <sup>3</sup>
<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 Limits</b>	No biological limit allocated.

## Engineering Controls

<b>Ventilation:</b>	When dry geopolymer concrete dust is present, ensure exposures to respirable crystalline silica (quartz) are maintained below NES. Work in the open air, and the opening of external openings (such as doors and windows in buildings) generally provides adequate ventilation. Local mechanical ventilation or extraction may be required in areas where dust could escape into the working environment. Local dust extraction and collection may be used, if necessary, to control airborne dust levels. If generated dust cannot be avoided, follow personal protection recommendations.
<b>Special Consideration for Repair &amp;/or Maintenance of Contaminated Equipment:</b>	Recommendations on Exposure Control and Personal Protection should be followed. When dry geopolymer concrete dust is present, ensure exposures to respirable crystalline silica (quartz) are maintained below NES. Where possible vacuum or wash down all gear, equipment or mobile plant prior to maintenance and repair work. If compressed air cleaning cannot be avoided, wear eye and respiratory protection, and clothing as listed below.
<b>Personal Protection</b>	
<b>PPE:</b>	Wear dust-proof goggles and/or safety glasses with side shields (AS/NZ 1336)  Wear loose comfortable clothing and gloves (standard duty leather, PVC or rubber gloves or equivalent AS 2161). 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 or P2 (Particulate) respirator in accordance with AS/NZS 1715 and AS/NZS 1716.
<b>Personal Hygiene:</b>	Wash hands before eating, drinking, using the toilet, or smoking. Wash work clothes regularly.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Solid concrete – grey or pale yellow colour
<b>Odour:</b>	Cementitious odour
<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 applicable
<b>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

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**Autoignition Temperature:** Not applicable

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**10. STABILITY AND REACTIVITY**

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**Chemical Stability:** Stable under normal conditions

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**Conditions to avoid:** None

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**Incompatible Materials:** None

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**Hazardous Decomposition Products:** None

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**Hazardous Reactions:** None

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**11. TOXICOLOGICAL INFORMATION**

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The following advice refers mainly to exposure to geopolymer concrete dust following cutting or crushing of product.

No specific toxicology data available, but toxicity of this product is anticipated to be very low with LD50 >5,000mg/kg. Health effects information is based on reported effects in use from overseas and Australian reports.

**Health Effects: Acute (short term)**

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**Swallowed:** Unlikely in normal use in the industrial situation. Abrasive and irritant to mouth and throat.

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**Eyes:** Irritating and may cause redness and watering.

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**Skin:** Irritating, abrasive and drying to the skin.

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**Inhaled:** 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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**Health Effects: Chronic (long term)**

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**Eyes:** May cause inflammation of the cornea.

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**Skin:** 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. Where dermatitis becomes established, secondary infection of the skin may occur.

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**Inhaled:** May cause inflammation of lining tissue of the respiratory system, and pre-existing diseases including asthma and bronchitis may be aggravated. 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).

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## 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.

## 12. ECOLOGICAL INFORMATION

<b>Eco-toxicity:</b>	Products as delivered are not biodegradable, have low ecotoxicity and are not regarded as posing any ecological risk. Crushed product and dust may form a mildly alkaline or neutral 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.

## 13. DISPOSAL CONSIDERATIONS

<b>Disposal:</b>	Precast geopolymer concrete can be treated as a common waste for disposal in accordance with local authority guidelines. Crushed product and dust should be kept 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>	Precast geopolymer concrete can be dumped into a landfill site in accordance with local authority guidelines.

## 14. TRANSPORT INFORMATION

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

<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>	None
<b>HAZCHEM code:</b>	None allocated

## 15. REGULATORY INFORMATION

**Poisons Schedule:** Not scheduled

**AICS** All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

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).

## 16. OTHER INFORMATION

**Date of revision of this MSDS:** 27 February 2014

### 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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END OF MSDS