SAFETY DATA SHEET

Pre-Mixed Concrete

SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product name:	**Pre-Mixed Concrete**
Applicable In:	Australia
Other Names:	Vic Mix
Recommended use:	Premixed concrete is used for a wide variety of applications in building and civil engineering projects. 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. When sprayed it is used for encapsulating steel work as well as structural applications.
Other Information:	From a plastic state, concrete begins to harden about one hour after delivery and is solid within eight hours. The rate of setting depends upon the ambient conditions and the concentration of cementitious ingredients.
Company:	**Vic Mix Pty Ltd** ABN 92 149 268 226
Address:	161-171 Ordish Road Dandenong South Vic 3175, Australia
Telephone:	+61 3 8792 3100 (8-00 am to 4-00 pm Mon to Fri only)
Facsimile:	+61 3 8792 3199 (8-00 am to 4-00 pm Mon to Fri only)
Website:	www.vicmix.com.au
Emergency Phone Number:	Poisons Information Centre 13 11 26, Triple Zero (Australia) 000

SECTION 2: HAZARDS IDENTIFICATION

HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

Classification of the substance or mixture

GHS classification(s):

Skin Corrosion / Irritation:	Category 2
Serious Eye Damage:	Category 1
Skin Sensitisation:	Category 1
Specific Target Organ Toxicity (repeated exposure)	Category 3

Label elements

Signal word:	WARNING
Pictogram(s):	

Hazard Statement(s)
H302 – Harmful if swallowed
P280 – Wear protective gloves/clothing/eye protection.
H314 – Causes severe skin burns and eye damage
H317 – May cause an allergic skin reaction
H318 - Causes serious eye damage
H373 – May cause damage to lungs by inhalation (dust from dried product)

Prevention Statement(s)
P260 - Do not breathe dust.
P264 – Wash thoroughly after handling.
P270 – Do not eat, drink or smoke when using this product
P272 – Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/ protective clothing.

Response Statement(s)
P301 + P330 – If swallowed, rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 – If on skin, immediately remove all contaminated clothing. Rinse skin with water.
P305 + P351 + P338 – If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to.
P312 – Call a Poison Centre or doctor if you feel unwell.
P314 – Get medical advice/attention if you feel unwell.
P333 + P313 – If skin irritation or rash occurs, get medical advice/attention.
P363 – Wash contaminated clothing before reuse.

Storage Statement(s)
None Allocated

Disposal Statement(s)
P501 Dispose of contents/container in accordance with relevant regulations.

Other Hazards
- This product may contain crystalline silica. Crystalline silica dust is classified as Hazardous.
- The product, when it solidifies as supplied, is classified as non-hazardous.
- Dust created when the product is cut, abraded, or crushed may contain crystalline silica some of which may be respirable (particles small enough to go into the deep parts of the lung when breathed in).
- A proportion of the fine dust in/on the supplied product may be respirable crystalline silica.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Significant Constituents by Name:	**Proportion:**	**CAS Number:**
Sand containing Crystalline silica (quartz)	**30-85%**	**14808-60-7**
Crushed Stone, Gravel or Blast Furnace Slag	**30-85%**	**-**
Portland cement Chromium VI (hexavalent chromium)	**10-60%** 2-20 ppm	**65997-15-1** 1333-82-0
Water	**<20%**	**7732-18-5**
OTHER INGREDIENTS MAY BE ADDED:		
Polypropylene or steel fibres	<10%	-
Polystyrene beads (reduced density)	<10%	9003-53-6
Metallic oxide pigments (colouring)	<10%	-
Silica fume (amorphous silica)	<10%	7699-41-4
Admixtures, such as water reducers, set retarders, set accelerators, plasticisers, and waterproofing agents (refer AS 1478)	<10%	-

Notes
Crystalline-silica (quartz) may be a constituent of sand, crushed stone, gravel, blast furnace slag and fly ash used in any particular concrete mix.
Cement in concrete contains traces of Chromium VI.
Cementitious additives may contain traces of metals.

SECTION 4: FIRST AID MEASURES

Eyes:	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.
Skin:	Remove heavily contaminated clothing immediately. Wash off skin thoroughly with water. Uses a mild soap if available. Shower if necessary. Seek medical attention for persistent irritation or burning of the skin.
Inhaled:	Remove the source of contamination or move the victim to fresh air. Ensure airways are clear and have a qualified person give oxygen through a face mask if breathing is difficult. If symptoms persist, seek medical attention.
Swallowed:	Rinse mouth and lips with water. Do not induce vomiting. Give water to drink to dilute stomach contents. If symptoms persist, seek medical attention.
First Aid Facilities:	Eye wash and washroom facilities.
Advice to Doctor:	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

Flammability:	None. Concrete is a stable substance that will not decompose into hazardous by-products, or polymerise.
Hazards from combustion products:	None.
Suitable extinguishing media:	Not applicable. Use carbon dioxide, foam, dry chemical or water spray as required for fire in surrounding materials.
Special protective precautions and equipment for fire fighters:	None.
Hazchem Code:	None allocated.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spills:
If spillage is dry, shovel into containers. Avoid generating dust.
Dust is best cleaned by vacuum to avoid making dust airborne. Wetting down before sweeping, may be a useful control measure.
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.
Recommendations on exposure control and personal protection should be followed during spill clean-up.

SECTION 7: HANDLING AND STORAGE

Handling

Exposure to wet concrete via the skin can cause both immediate effects (e.g. alkali burns) and long term effects (e.g. dermatitis).
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. Refer Section 8 for further advice.
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.

Storage:

No special storage requirements.
Wet premixed concrete has a limited life after batching and will set hard. The rate of setting depends on the ambient conditions and concentration of cementitious ingredients.

Transportation:

Not classified as a Dangerous Goods, according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (6th Edition).

Incompatibilities:

Contact with sugars, acids, or solutions of either will cause a degradation of the quality of the material. A safety hazard can be 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

Exposure Limits:

Workplace Exposure Standards for Airborne Contaminants, Safe Work Australia

Exposure to dust should be kept as low as practicable, and below the following NES:-
Crystalline silica (quartz): 0.05 mg/m3 TWA (time-weighted average) as respirable dust
Total dust (of any type, or particle size): 10 mg/m3 TWA
Chromium VI: 0.05 mg/m3 -sensitiser
All occupational exposures to atmospheric contaminants should be kept to as low as reasonably practicable and in all cases to below the Workplace Exposure Standard (WES). 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.

Engineering Controls:

Ventilation:

All work should be carried out in such a way as to minimise dust generation, and exposure to dust.
Mechanical ventilation: Dust extraction and collection may be used, if necessary, to control airborne dust levels
Work areas should be cleaned regularly

Personal Protection

Skin:

Minimise contact with concrete materials. When handling wet concrete, mortar or grout personnel should wear loose comfortable protective clothing and impervious boots, suitable impervious gloves such as PVC.
Contact with plastic concrete will cause severe irritation and possible chemical burns, cement dermatitis, and dry skin.

Portland cement is alkaline in nature so plastic concrete and mortars are strongly alkaline (pH of 12 -13). Strong alkalines, like strong acids, are harmful or caustic to the skin. This may produce alkali burns.
Portland cement is hygroscopic - it absorbs water. Plastic concrete needs water to harden. It will draw water away form any other material in contacts, including skin. This will irritate and dry the skin.

Ensure a high level of personal hygiene is maintained when using this product. That is; always wash hands before eating, drinking, smoking or using the toilet
Remove all contaminated clothing. Wash gently and thoroughly with tepid water and non-abrasive soap. If irritation develops and persists seek medical attention. Wash hands before eating, or smoking immediately and wash skin thoroughly. Wash work clothes regularly. To avoid contamination of face and lips and ingestion, wash hands before eating, or smoking.

Eyes: Avoid contact with eyes. Splash resistant Safety Glasses with side shields, safety goggles (AS/NZ 1336), or a face-shield should be worn. Plastic concrete will cause severe irritation in contact with the eyes, which will result in redness, stinging and lachrymation. Alkaline properties may produce severe alkali burns or serious eye damage.
Dry concrete dust may cause mechanical irritation resulting in redness and lachrymation.

Respiratory: Where engineering and handling controls are not enough to minimise exposure to total dust and to respirable crystalline silica, personal respiratory protection may be required. The type of respiratory protection required depends primarily on the concentration of the respirable crystalline silica dust in the air, and the frequency and length of exposure time. Amount of exertion required during the work, and personal comfort are other considerations in choice of respirator.

A suitable P1 or P2 particulate respirator chosen and used in accordance with AS/NZS 1715 and AS/NZS 1716 may be sufficient for many situations, but where high levels of dust are encountered, more efficient cartridge type or powered respirators or supplied-air helmets or suits may be necessary. 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 providing a greater protection factor should be worn. Procedures for effective use of respirators should be applied and supervised. Do not contaminate the home environment with dusty work clothes and shoes. Do not shake out work clothes before laundering.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Pre-mixed Concrete is a plastic mixture of water, cementitious materials, and aggregates. The latter are usually sand and stone or gravel. Its plasticity ranges from near liquid to a friable damp earth-like mixture. The most common plasticity has a cohesive porridge-like appearance. The colour is usually grey. If special concretes with pigments are used the colour may range from near-white to any other colour.
Odour:	Some added ingredients used in concrete may create a smell of ammonia.
pH, at stated concentration:	> 7.0 dry state. >10 in wet state.
Vapour pressure:	Not determined
Vapour Density:	Not determined
Boiling Point/range:	Not determined

Freezing/Melting Point:	Melting point >1200^{o}C
Solubility:	Not soluble or slight, reacts on mixing with water forming an alkaline (caustic) solution (pH >11).
Specific gravity: (H2O = 1)	2.4 to 2.5
Flammability Limits:	Not applicable
Flash Point:	Not applicable
Ignition Temp:	Not applicable
Particle Size:	A proportion of the dust may be respirable (below 10 microns).

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability:	Chemically stable under normal conditions
Incompatible Materials:	Sugar, acids or solutions of either (see Section 7)
Conditions to avoid:	Keep away from water
Hazardous Decomposition products:	None
Hazardous Reactions:	None

SECTION 11: TOXICOLOGICAL INFORMATION

Health Effects

Acute (Short Term) Exposure:

Swallowed: Unlikely in normal use in the industrial situation. Abrasive and highly irritant (burning) to mouth and throat. May cause nausea, stomach cramps and vomiting.

Eye: Plastic concrete will cause severe irritation in contact with the eyes, which will result in redness, stinging and lachrymation. Alkaline properties may produce severe alkali burns or serious eye damage. Dry concrete dust may cause mechanical irritation resulting in redness and lachrymationIrritating and may cause alkaline (caustic) burns to the eyes.

Skin: 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.
Portland cement is alkaline in nature so plastic concrete and mortars are strongly alkaline (pH of 12 - 13). Strong alkalines, like strong acids, are harmful or caustic to the skin. This may produce alkali burns Portland cement is hygroscopic - it absorbs water. Plastic concrete needs water to harden. It will draw water away from any other material in contacts, including skin. This will irritate and dry the skin.

Inhaled: Concrete dust is irritating to the nose, throat and respiratory tract causing coughing, sneezing and breathing difficulties. Pre-existing upper respiratory and lung diseases including asthma and bronchitis may be aggravated.

Chronic (Long Term) Exposure:

Eyes: In dust form, it may cause inflammation of the cornea.

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.

Inhaled: Plastic concrete is not considered a chronic inhalation hazard 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. Long term occupational overexposure 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), including acute and/ or accelerated silicosis. 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 Inhalation of dust, including crystalline silica dust, is considered by medical authorities to

increase the risk of lung disease due to tobacco smoking.

The product contains a proportion of respirable free crystalline silica in the quartz component. Crystalline silica (inhaled in the form of quartz or cristobalite from occupational sources) has been classified by The International Agency for Research on Cancer (IARC) as carcinogenic to humans (Group 1).

Additional Notes:

Long Term Effects: 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. IARC have recently classified respirable crystalline silica dust as carcinogenic to humans (IARC Group1). This means it may 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.

Special Toxic Effects: 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

Eco-toxicity: Product forms an alkaline slurry when mixed with water.

Persistence & Degradability: Product is persistent and is non-degradable.

Mobility: A low mobility would be expected in a landfill situation.

Dust: Crystalline silica is non-toxic to aquatic and terrestrial organisms; is not biodegradable; is insoluble and is expected to have low mobility in landfill.

SECTION 13: DISPOSAL CONSIDERATIONS

Pre-Mixed Concrete can be treated as a common waste for disposal or 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: TRANSPORTATION INFORMATION

Transport Requirements:

Transport equipment should be strong enough to contain a fluid with an effective specific gravity of 2.5.

UN number: None allocated.
UN Proper Shipping Name: None allocated.
Class: None allocated.
Subsidiary Risk: None allocated.
Packaging Group: None allocated.

Hazchem code: None allocated.
DG Class: None allocated.
EPG: None.
Incompatibilities: None.

SECTION 15: REGULATORY INFORMATION

Classification: Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals. The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].
Inventory Listing(s): AICS (Australian Inventory of Chemical Substances)
All components are listed on ASICS or are exempt.
Poisons Schedule: None 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

Additional Information concerning 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. It is anticipated that users will assess the risks and apply control methods where appropriate.

Poisons Information Centre: 13 11 26

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.

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END of SDS