


Section 1: Identification of Material and Supplier

Supplier	Barro Group Pty Limited ACN 005 105 724
Address	191 Drummond Street Carlton Vic 3053 Australia
Telephone / Facsimile	Tel: 03) 8656 3900
Email	barro@barro.com.au
Emergency Telephone	000 (fire brigade, ambulance, police)
Poisons Information Centre	13 11 26
Product Name	Concrete, Premixed Concrete

Premixed concrete is defined as a thoroughly mixed combination of cement, aggregates and water with or without the addition of chemical admixtures or other materials. It is used to produce hardened concrete in various forms in the building and construction industries. It is delivered to site in purpose built truck mounted mixing and agitating units where it is delivered off the truck chute to the purchaser to be placed where required. The combination of cement aggregates and water with or without the addition of chemical admixtures or other materials will depend upon specifications provided by others or the particular requirements or intended use of the premixed concrete. Whilst different types or grades of concrete are produced for different applications, these notes apply generally throughout the industry.

Section 2: Hazard Identification

Classified as Hazardous in accordance with the GHS/Safe Work Australia criteria.		
Classified as Non-Dangerous Goods according to the Australian Code for Transport of Dangerous Goods by Road and Rail		
GHS CLASSIFICATION		
GHS Classification	GHS Signal Word	GHS Pictogram
Skin corrosion/irritation – Category 1 Serious eye damage/eye irritation – Category 1 Sensitisation of the skin – Category 1 Specific target organ toxicity (repeated exposure due to concrete dust) – Category 2	Danger	
GHS HAZARD (RISK) STATEMENTS		
H302	Harmful if swallowed	
H332, H373	Harmful by inhalation (concrete dust). Danger of serious damage to health by prolonged exposure through inhalation (applies to concrete dust). May cause damage to organs (applies to prolonged exposure to concrete dust)	
H312, H315	Harmful with skin contact. Causes skin irritation. May cause sensitisation/irritation by skin contact	
H 317	May cause allergic skin reaction	
H318	May cause eye damage	
GHS PRECAUTIONARY (SAFETY) STATEMENTS		
P280	Wear protective gloves/protective clothing/eye protection/face protection	
P303, P353, P361	If on skin: wash with plenty of soap and water	
P305, P351, P338	If in eyes: rinse cautiously with water for several minutes. Remove contact lenses, if easy to do. Continue rinsing	
P260	Do not breath in dust	
P270	Do not eat or drink while using/handling product	
P264	Wash thoroughly after handling product	
P333, P313	If skin irritation/rash occurs seek medical advice	
P363	Take off contaminated clothing and wash before re-use	
P301, P310	If swallowed: immediately call a Poison Centre or doctor/physician	
P501	Dispose of contents/container in accordance with local government regulations (do not wash/empty product into drains)	

Section 3: Composition / Information on Ingredients

Chemical Name	Proportion:
Ingredients usually present:	
◦ Portland cement	10-60% (CAS No 65997-15-1)
◦ Aggregates	
Sand – containing crystalline silica (quartz)	20%-30% (CAS No 14808-60-7)
Crushed stone, gravel, or blast furnace slag	to 100% (CAS No not req)
◦ Water	to 20% (CAS No 7732-18-5)



Safety Data Sheet

Concrete

Other ingredients may be added:

- Blast furnace Slag or Fly Ash <20%
 - Pozzolans <10%
 - Fibres, steel or polypropylene <10%
 - Polystyrene beads (reduced density) <10% by volume (CAS No 9003-53-6)
 - Metallic oxide pigments <10% (CAS No 7699-41-4)
 - Condensed amorphous silica fume <10%
 - Silica fume (amorphous silica) <10%
- Admixtures such as water reducers, set retarders, set accelerators, plasticisers and waterproofing agents (refer Australian Standard AS 1478). Chemical admixtures 0-5% (CAS No 9003-53-6).
 - Portland cement in concrete contains a trace impurity of Chromium VI (hexavalent chromium):2-20ppm (CAS No 1333-82-0). Cementitious additives may contain traces of metals.
 - Portland cement, sand, crushed stone, gravel, blast furnace slag and fly ash may contain crystalline silica (quartz). Depending on the source of the material for the above ingredients, the crystalline silica content of the final product can vary from product to product.

Section 4: First Aid Measures

- Swallowed:** Wash out mouth with cold clean water. DO NOT induce vomiting. Then drink water at significant levels and seek medical advice.
- Eye:** Thorough washing with much clean flowing water, preferably sterile, for at least 15 minutes. Seek medical attention immediately for thorough examination of eye surface. If wet concrete is plashed into eye, flush with flowing water and get urgent medical attention.
- Skin:** Remove heavily contaminated clothing, wash skin thoroughly with tepid water and non-abrasive soap if necessary and remove source of contamination. If irritation develops and persists, seek medical attention.
- Inhaled:** Remove source of contamination and move victim away from dusty area to fresh air. If irritation continues, seek medical advice.
- First Aid Facilities:** Eye wash and normal washroom facilities
- Advice to Doctor:** Advise of abrasive and alkaline nature and treat symptomatically or consult Poisons Information Centre. Wet concrete burns to skin/eyes may result in corrosive caustic burns. Ingestion of concrete is unlikely. Do not induce emesis or perform gastric lavage. Neutralization with acidic agents is not advised due to increased risk of exothermic burns. Water-mineral oil soaks may aid in removing hardened concrete from skin. Ophthalmological opinion should be sought for ocular burns.

Section 5: Fire Fighting Measures

- Flammability : Non-flammable or combustible
- Hazards from combustion products : Nil
- Suitable extinguisher media : Not applicable
- Special protective precautions and equipment for fire fighters : Nil
- Hazchem code : None allocated
- Concrete is stable and will not burn or explode.

Section 6: Accidental Release Measures

Spills and Disposal:

- When spills do occur, most material is best removed by mechanical means (sweepers/vacuums) wherever possible (shovel into containers).
- Avoid dust generation – wetting down may assist control measures.
- Removal should occur as soon as possible due to the setting involved. The spillage can and will bond to other surfaces unless removed quickly. Damage may involve deterioration of the surface due to the high pH.
- Final cleaning up of cement paste from surfaces may require sluicing with water
- Exposure control and personal protection recommendations should be followed during spill cleanup.
- Prevent spillage or wash down water from entering drains, sewers, stormwater and water courses, pipes, etc.



Safety Data Sheet

Concrete

- If contamination of drains or watercourses has occurred, advise the relevant state environment protection agency and the company.
- Concrete (plastic) – concrete/washout waste must be disposed of in accordance with local authority regulations.
- Concrete (dry) waste may be disposed of as inert landfill in accordance with local authority regulations.

Section 7: Handling and storage

- Storage Precautions:** No special storage requirements.
Premixed concrete normally only has a usable life of several hours from the time of initial mixing to final placing where required in the product or the structure. Premixed concrete is adversely affected by contact with excess water and organic materials such as sugar which will delay setting and early strength development.
- Transport:** Not classified as a Dangerous Goods.
- Handling:** Prevent all contact with the skin and maintain high standard of personal hygiene – always wash hands before eating, drinking, smoking or using the toilet. Wet concrete is heavy and appropriate manual handling risk control is required for barrowing, shoveling or carrying quantities of wet concrete. When cutting using powered tools on dry concrete, dust containing respirable crystalline silica can be generated. Controls to prevent inhalation of dust are detailed in Section 8.
- Proper Shipping Name** None allocated

Section 8: Exposure Controls/Personal Protection

The following applies to Dust from this product:

Exposure Limits:

Workplace Exposure Standards (WES) for airborne contaminants – Safe Work Australia

Keep exposure to dust as low as practicable and below the following WES:

- Crystalline Silica: 0.05mg/m³ TWA (time weighted average) as respirable dust.
- Total dust NOS (not otherwise specified) (of any type or particle size): 10mg/m³ TWA as inhalable dust
- Chromium VI (hexavalent) 0.05mg/m³ – sensitiser – as respirable dust

Engineering Controls

- Avoid generating dust and inhaling dusts and minimize exposure to dust.
- Provide adequate mechanical ventilation and/or local dust extraction or water spray to control airborne dust levels.
- Clean work areas regularly by wet sweeping and vacuuming in restricted areas and where there are strong winds.
- Work in well ventilated area and wear PPE.
- Note – all occupational exposures to atmospheric contaminants should be kept as low as possible and be below the Workplace Exposure Standard (WES)

Eye Protection:

- Splash resistant **Safety Glasses** with side shields, safety goggles/face shields where splashing may occur or dust is likely. AS/NZS 1336 & 1337.
- Plastic concrete/plastic washout waste will cause severe irritation with eyes and alkaline properties may produce severe alkali burns or serious eye damage.
- Dry concrete dust may cause mechanical irritation, redness

Skin Protection:

- Wear **full clothing** covering sections of body likely to come in contact with concrete and/or wet concrete washout waste during handling and placing including use of sleeves, long trousers, impervious boots, suitable protective/impervious gloves etc. Wash work clothes regularly and use barrier cream on hands
- Prevent all contact with skins; never kneel in wet concrete or allow extended contact of skin with wet concrete
- To avoid contamination of face and lips and ingestion, wash hands before eating, drinking, or smoking.
- Contact with plastic concrete / washout waste will cause severe irritation and possible chemical burns, cement dermatitis and dry skin. Portland cement is alkaline in nature so plastic concrete and plastic concrete washout waste are strongly alkaline which are harmful or caustic to the skin and may produce alkali burns.

Respirator Type

- Where engineering controls are not enough to minimize exposure to total dust and to respirable crystalline silica, **personal respiratory protection** may be required. Depending on the work circumstances, a suitable P2 particulate



Safety Data Sheet

Concrete

respirator chosen and used in accordance with AS/NZS 1715 and AS/NZS 1716 may be sufficient, however where higher levels of dust are encountered cartridge or powered types of respirators may be necessary.

- Where dust levels are approaching or exceeding the WES above greater respiratory protection may be required.

Section 9: Physical and Chemical Properties

Appearance:

Concrete is typically grey in colour unless pigmented. When first mixed, it is described as being in a plastic or mouldable state and its condition is influenced by the raw materials in use and the amount of water used. It can range from an earth dry to a flowing condition. It has the typical appearance of stone or gravel mixed in a mortar containing cement paste. Concrete can set and harden.

Boiling Point:	Not available	Flamm. Limits:	Not applicable
Vapour Pressure:	Not available	Vapour Density	Not applicable
Freezing/Melting Point	Melting point > 1200°C	Auto-ignition temperature:	Not applicable
Specific Gravity (H₂O=1)	2.5	Solubility (other)	Not applicable
Solubility in Water	Forms Slurry- alkaline (caustic) solution (pH>11)		
Flash Point:	Not applicable		
Odour	Some additives used may create a smell of ammonia		
Particle Size	a proportion of the dust may be respirable (below 10 microns) – if airborne, becomes an exposure if inhaled		
pH Value:	The pH of freshly mixed concrete is generally > 10; in its dry state >7.		
Bulk Density:	1900 to 2600 kg/m ³ (typical range)		
VOC Content:	not available		

Section 10: Stability and Reactivity

Stability:

Stable. The final setting time is influenced by many factors including the temperature and this can be up to 10-12 hours later. Strength development commences from that stage and continues almost indefinitely. Both setting and strength gain occur more slowly in cold weather than in hot weather. The setting process starts within minutes of the cement and water being mixed.

Haz. Polymerization:	Will not occur	Autoignition Temp:	Not Applicable
Chemical Stability	Chemically stable	Incompatible Materials	None
Hazardous Polymerisation	None	Hazardous Decomposition	None
Explosive Properties	Not applicable	Hazardous Reactors	None
Per Cent Volatiles:	Not Available		
Conditions to avoid	Keep away from water; dust generation		

Crystalline silica is stable, compatible with other materials and does not polymerise, and will not decompose into hazardous by-products

Section 11: Toxicological Information

Swallowed:

Unlikely in normal industrial situation. Acute if swallowed. Abrasive and mildly corrosive action. Highly irritant (burning) to mouth and throat. Symptoms may include nausea, stomach cramps and vomiting.

Eye:

Acute to severe irritation. Abrasive and corrosive action. Symptoms include 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.

Skin:

Acute. Skin irritation and possible chemical burns, cement dermatitis and dry/burning skin. Abrasive and corrosive action in the short term. (Portland cement is alkaline in nature making plastic concrete strongly alkaline – alkalines are harmful or caustic to the skin and may produce alkali burns; Portland cement is hygroscopic – it absorbs water - concrete needs water to harden so will draw water away from any other materials, including skin, and this will irritate and dry the skin).



Safety Data Sheet

Concrete

Inhaled:

Acute. Droplets or concrete dust may irritate the nose, throat and respiratory tract causing coughing, sneezing and breathing difficulties. Pre-existing upper respiratory or lung 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 (disease of connecting skin tissue, joints, blood vessels and internal organs). Concrete is not listed as a carcinogen by ASCC; risk of cancer has not been identified by using concrete, however the International Agency for Research on Cancer (IARC) has classified Chromium VI (hexavalent) and Crystalline Silica inhaled in the form of quartz or cristobalite from occupational sources, as carcinogenic to humans Group 1.

Long Term (Chronic) Exposure

Eyes – dust may cause inflammation of the cornea

Skin – repeated contact causes irritation and drying of the skin and can result in persistent skin reddening and rash (dermatitis). Persons allergic to chromium could develop allergic dermatitis

Inhaled - Inhalation of airborne particles from other sources in the work environment, including those from cigarette smoke, may cause the risk of respiratory diseases. It is recommended that all storage and work areas should be smoke-free zones and that other airborne contaminants should be kept to a minimum.

Concrete Dust – long term exposure of crystalline silica dust above the WES carries potential risk of chronic health effects.

Section 12: Ecological Information

Ecotoxicity: Product forms an alkaline slurry when mixed with water

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

Persistence & Degradability: Product is persistent and would have a low degradability

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

Spills and leaks

Concrete in plastic form/washout waste – recover spilled materials into containers, but avoiding dust generation. Prevent substance /wash down water from entering waterways, drains or sewers. If contamination of drains or waterways occurs advise relevant state environment authority and the company

Disposal

- Take measures to prevent dust generation
- Concrete (plastic) - washout waste must be disposed of in accordance with local authority regulations.
- Concrete (dry) waste may be disposed of as inert landfill in accordance with local authority regulations.

Section 14: Transport

UN Proper Shipping Name: None allocated

Class None allocated

Subsidiary Risk 1 None allocated

Hazchem Code: None allocated

UN Number: None allocated

DG Class: None allocated

Packing Group: None allocated

Special precautions for users: See above

Transport is generally by mechanical equipment readily available in the industry. Transport equipment should be strong enough to contain a fluid with an effective specific gravity of 2.5

Section 15: Regulatory information

Exposure by inhalation to high levels of dust may be regulated under the Hazardous Substances Regulations as they apply to Respirable Crystalline Silica, requiring exposure assessment and control of inhalation exposure below the WES

Persons who have potential for exposure above the WES may be required by Regulations to have periodic health surveillance including chest x-ray (refer applicable State Govt Regulations).



Safety Data Sheet

Concrete

Other Information

This SDS is applicable: in Australia
SDS issue date: **January 2022**

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CONTACT POINT

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END of SDS