



MATERIAL SAFETY DATA SHEET (MSDS)

Identification

Product: CONCRETE, PREMIXED CONCRETE
Company: BGC Concrete
Level 6, 18 Mount Street
PERTH WA 6000

Other Names:

- Ready-mixed concrete
- Mortar
- L-Stone
- Grout

Product Use: Use Premixed concrete is used for a wide variety of building and construction applications

Other Information: Plastic concrete begins to harden about one hour after delivery and is quite hard within eight hours. The rate of setting depends on ambient conditions (temperature, wind and humidity) and the concentration of cementitious ingredients

Hazard Identification

- Classified as hazardous according to the criteria of the Australian Safety and Compensation Commission ASCC (formerly NOHSC) (Approved Criteria for Classifying Hazardous Substances[NOHSC:1008] 3rd Edition).
- This product may contain crystalline silica. Crystalline silica dust is classified as Hazardous.
- The solid product 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.

The following are Risk may apply to product.

- Harmful by Inhalation (applies to concrete dust)
- Harmful in Contact with Skin
- Harmful if Swallowed
- May cause sensitisation by skin Contact
- Danger of serious damage to health by prolonged exposure through inhalation (Applies to concrete dust)

The following precaution should be taken

- Do not breathe dust
- After contact with skin, wash immediately with plenty of water
- Do not empty into drains
- Wear suitable protective clothing e.g. rubber gloves, safety glasses, long pants, rubber/pvc steel cap boots

INGREDIENTS

NAME	CAS	PROPORTION
Sand	14808-60-7	20 – 85%
Crush stone, Gravel or Blast furnace slag	Not Required	20 – 85%
Portland Cement	65997-15-1	10 – 60%
Water	7732-18-5	0 – 20%
Other ingredients that may be added		
Blast Furnace Slag or Fly Ash		0 – 20%
Pozzolans		1 – 10%
Pigments		1 – 10%
Silica Fume (amorphous silica)	7699-41-4	1 – 10%
Chemical Admixtures		2 – 10%
Polystyrene Balls	9003-53-6	1 – 60% By Volume
Polypropylene fibres		0 - 10%
Steel Fibres		0 – 10%

NOTE: Chromium VI is a trace impurity in Portland Cement. 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.

FIRST AID

Swallowed	Rinse mouth and lips with water. Do not induce vomiting. If symptoms persist, seek medical attention
Eye	Flush thoroughly with flowing water, while holding eyelids open, for 15 minutes to remove all traces. If symptoms such as irritation or redness persist, seek medical attention
Skin	Remove heavily contaminated clothing. Wash off skin thoroughly with water. Use a mild soap if available. Shower if necessary. Seek medical attention for persistent redness, 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 irritation develops seek medical attention.

Advice to Doctor: Treat symptomatically or consult a Poisons Information Centre

FIRE FIGHTING

Flammability:	Not flammable or combustible
Hazards from combustion products:	None
Suitable extinguishing media:	Not applicable
Special protective precautions and equipment for fire fighters:	None
Hazchem code:	None allocated

ACCIDENTAL RELEASE MEASURES

Spills:

- 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
 - Plastic concrete;
->Recover spilled material by shovelling into containers and using mechanical sweepers, but avoid generating dust. Prevent spillage or wash down water from entering sewers drains, storm water and watercourses.
- >If contamination of drains or watercourses has occurred, advise the relevant state environment protection agency and the company

Disposal:

- May be disposed of as inert landfill in accordance with local authority regulations

HANDLING AND STORAGE

Storage Precautions:

No special storage requirements

Transport:

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

Code

Handling:

is

Prevent all contact with skin. Ensure a high level of personal hygiene maintained when using this product. That is; always wash hands before eating, drinking, smoking or using the toilet

before

Proper Shipping Name:

None Allocated

EXPOSURE CONTROLS / PERSONAL PROTECTION

The following applies to dust from this product, Exposure Limits:

- National Occupational Exposure Standard (NES) Australian Safety and Compensation Commission ASCC (formerly NOHSC)
- Exposure to dust should be kept as low as practicable, and below the following NES:-
- Crystalline silica (quartz): 0.1 mg/m³ TWA (time-weighted average) as respirator dust
- Total dust (of any type, or particle size): 10 mg/m³ TWA
- Chromium VI: 0.05 mg/m³ -sensitiser

ENGINEERING CONTROLS

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: Prevent all contact with skin

When handling wet concrete personnel should wear loose comfortable clothing and impervious boots, suitable protective/impervious gloves

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 from any other material in contact, 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

Eyes: Safety glasses with side shields or 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

PHYSICAL AND CHEMICAL PROPERTIES

Appearance: A mouldable generally grey mixture which will set and harden to become a stable solid. Colour may vary from near white to any other colour

Odour: Some added ingredients used in concrete may create a smell of ammonia

Ph: >7.0 dry state. >10 in wet plastic state

Vapour Pressure: Not determined

Vapour Density; Not determined

Boiling Point:	Not determined
Freezing/melting point:	Melting point >1200 0C
Solubility:	Not soluble. Can react on mixing with water forming an alkaline solution with Ph >11
Specific gravity:	2.5
Flash Point:	Not applicable
Upper and lower flammability Limits:	Not applicable
Ignition Temp:	Not applicable
Particle Size	A proportion of the dust may be respirable (below 10 microns) and if it becomes airborne constitutes an exposure if inhaled.

STABILITY AND REACTIVITY

Chemical Stability: Chemically Stable

Condition to avoid: Keep away from water. Dust generation.

Incompatible

materials: None

Hazardous

Decomposition: None

Products

Hazardous Reactions: None

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

TOXICOLOGICAL INFORMATION

Health Effects

Acute -

Swallowed: Unlikely in normal use in industrial situation .Concrete is abrasive and mildly corrosive. Swallowing either plastic or hardened concrete will result in abdominal discomfort. Symptoms can include 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 lachrymation

Skin: 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

Inhaled: Sprayed plastic concrete droplets and dry concrete dust may irritate 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-

Eyes In dust form may cause inflammation of the cornea

Skin Repeated or prolonged skin contact with plastic concrete can dry the skin and cause alkali burns due to the caustic nature of the product. This condition is described as irritant contact dermatitis. Some individuals may experience allergic dermatitis because there are trace amounts of water soluble hexavalent chromium salts (Chromium VI) present in Portland Cement (0 - 20ppm). Once a person is sensitised to water soluble chromates any further skin exposure to chromates will bring back the symptoms.

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 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), 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). However (in the view of CC&AA) the research on this is inconclusive and ASCC/NOHSC has not classified crystalline silica as a carcinogen. The most current research indicates no excess risk of lung cancer or other cancers from using these products.

Other

Information: Inhalation of airborne particles from other sources in the work environment, including those from cigarette smoke, may increase 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

ECOLOGICAL INFORMATION

Concrete

Ecotoxicity: Product forms an alkaline slurry when mixed with water

Persistence and

Degradability: Product is persistent and would have a low degradability

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

DISPOSAL CONSIDERATIONS

Spills & Leaks

Plastic concrete; Recover spilled material by shovelling into containers and using mechanical sweepers, but avoid generating dust. Prevent spillage or wash down water from drains, stormwater and watercourses. If contamination of or watercourses has occurred, advise the relevant state environment protection agency and the company.

Disposal: May be disposed of as inert landfill in accordance with local authority regulations. Measures should be taken to prevent dust generation during disposal and exposure and personal precautions should be observed (see above)

TRANSPORT information

UN Number: None Allocated

UN proper

Shipping name: None Allocated

Class and

subsidiary risk: None Allocated

Packing Group: None Allocated

Hazchem Code: None Allocated

Special precautions

for user: See Above

DG class: None Allocated

REGULATORY INFORMATION

Classification: Hazardous according to ASCC/NOHSC criteria and not classified as Dangerous Goods

Hazard Symbol: None allocated

Poisons Schedule: None allocated

- Exposures by inhalation to high levels of dust may be regulated under the Hazardous Substances Regulations (State and Territory) as they are applicable to Respirable Crystalline Silica, requiring exposure assessment, and control of inhalation exposure below the NES
- Persons who have potential for exposure above the NES may be required by Regulations to have periodic health surveillance including Chest X-ray (see relevant State Government Regulations and ASCC/NOHSC documentation)

PLEASE NOTE!

We believe the information contained in this Material Safety Data Sheet is accurate and is given in good faith, but no warranty expressed or implied is made.

The suggested procedures are based on experience as of the date of publication. They are not necessarily all-inclusive nor fully adequate in every circumstance. Users are advised to make their own independent determination of suitability and completeness of information at their own risk, in relation to the particular purposes and specific circumstances.

Since the information contained in this document may be applied under conditions beyond our control, no responsibility can be accepted by us for any loss or damage caused by any person acting or refraining from action as a result of any information contained in this Material Safety Data Sheet. Where the information provided herein disclosed a potential hazard or hazardous ingredient, adequate warning should be provided to employees and users and appropriate precautions taken.