



Aurora Construction Materials Pty Ltd

# MATERIAL SAFETY DATA SHEET

E-Crete™ Premixed Concrete



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## SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

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**Product name:** E-Crete™ Premixed Concrete

**Applicable In:** Australia

**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.

**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.

**Company:** Aurora Construction Materials Pty. Ltd. ABN 78 816 385 756

**Address:** 335 O'herns Rd, Epping, Victoria, 3076, Australia

**Telephone:** +61 3 9408 0666 (8-00 am to 4-00 pm Mon to Fri only)

**Facsimile:** +61 3 8401 4962 (8-00 am to 4-00 pm Mon to Fri only)

**Emergency Phone Number:** Poisons Information Centre 13 11 26

**IMPORTANT NOTICE:** This Material Safety Data Sheet (MSDS) is issued by Aurora Construction Materials Pty. Ltd. in accordance with the Safework Australia (formerly National Occupational Health and Safety Commission -NOHSC) guidelines. As such, the information in it must not be altered, deleted or added to. Aurora Construction Materials Pty. Ltd. will issue a new MSDS when there is a change in product specifications and/or Safework Australia/NOHSC guidelines/regulations. Aurora Construction Materials Pty. Ltd. will not accept any responsibility for any changes made to its MSDS by any other person or organisation.

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## SECTION 2: HAZARDS IDENTIFICATION

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### Hazardous Substance - Non-Dangerous Goods

**STATEMENT OF HAZARDOUS NATURE:** classified as **Hazardous** according to the criteria of the Safework Australia (formerly National Occupational Health and Safety Commission -NOHSC) Approved Criteria For Classifying Hazardous Substances [NOHSC:1008] 3rd Edition.

- This product may contain a proportion of fine dust in/on the supplied product which may be respirable crystalline silica. Crystalline silica dust is classified as Hazardous.
- The solid product when dry 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.

Risk Phases	Safety Phrases
<b>R21:</b> Harmful in Contact with Skin	<b>S22:</b> Do not breathe dust
<b>R22:</b> Harmful if swallowed	<b>S24/25:</b> Avoid contact with skin and eyes
<b>R37/38:</b> Irritating to respiratory system and skin	<b>S26:</b> In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
<b>R41:</b> Risk of serious damage to eyes	<b>S28:</b> After contact with skin, wash immediately with plenty of water
<b>R43:</b> May cause sensitisation by skin contact	<b>S29:</b> Do not empty into drains
<b>R48:</b> Danger of serious damage to health by prolonged exposure through inhalation (Applies to concrete dust)	<b>S36/37/39:</b> Wear suitable protective clothing, gloves and eye/face protection
<b>R66:</b> Repeated exposure may cause skin dryness and cracking	<b>S62:</b> If swallowed, do not induce vomiting: seek medical advice immediately

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### SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

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#### Major Constituents:

Name	CAS	Proportion
Sand containing Crystalline silica (quartz)	14808-60-7	20-85%
Crushed stone, gravel, or slag	14808-60-7	20-85%
Ground Granulated Blast Furnace Slag	65996-69-2	0-60%
Fly Ash	69012-84-6	0-60%
Water	7732-18-5	0-20%

#### Other ingredients may be added at levels determined to be nonhazardous:

Name	CAS	Proportion
Silica Fume	7699-41-4	0-4%
Portland Cement	65997-15-1	0-4%
Pigments: Metallic oxide colours		0-4%
Alkali and alkali earth containing salts, minerals and/or glasses		0-4%
Chemical Admixtures such as water reducers, set retarders, set accelerators, plasticisers, and waterproofing agents refer AS 1478		0-10%
Polypropylene or steel fibres		0-10%
Polystyrene beads (reduced density)	9003-53-6	0-60% by volume

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

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## SECTION 4: FIRST AID MEASURES

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**Swallowed:** Rinse mouth and lips with water. Do not induce vomiting. Give water to drink to dilute stomach contents. If symptoms such as abdominal discomfort or nausea persist, seek medical attention.

**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 all contaminated clothing immediately. Wash off skin thoroughly with water and non-abrasive soap. Shower if necessary. Seek medical attention for persistent irritation or burning of the skin.

**Inhaled:** Remove to fresh air, away from dusty area. If symptoms such as nose irritation, coughing or breathing difficulties persist, seek medical attention.

**First Aid Facilities:** Eye wash station. Wash facilities.

**Advice to Doctor:** Treat symptomatically. Extended contact of wet concrete with skin or eyes 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.

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## SECTION 5: FIRE FIGHTING MEASURES

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**Flammability:** Non-flammable or combustible. Concrete is a stable substance, compatible with most other building materials, will not decompose into hazardous by-products or polymerize.

**Suitable extinguishing media:** None

**Hazards from combustion products:** None

**Special protective precautions and equipment for fire fighters:** None

**Hazchem Code:** None allocated

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**Spills:** If spillage is dry, shovel into containers. Avoid generating dust. 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.

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

## SECTION 7: HANDLING AND STORAGE

**Handling:** Prevent all contact with skin and eyes. Ensure a high level of personal hygiene is maintained when using this product. When handling the wet material, always have a source of water available for washing skin and eyes.

Wet concrete is a heavy material, and appropriate control of manual handling risk is required when barrowing, shoveling or carrying quantities of wet concrete.

**Storage:** 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. Product 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. Contact with sugars, acids or solutions of either will cause a serious degradation of 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. **Incompatibilities:** None

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## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

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**Exposure Standards:** Safework Australia (formerly National Occupational Health & Safety Commission NOHSC) National Occupational Exposure Standard (NES).

Exposure to dry concrete dust should be kept as low as practicable and below the following NES.

Crystalline silica (quartz): 0.1 mg/m TWA (time-weighted average) as respirable dust. ( $\leq 7$  microns particle equivalent aerodynamic diameter).

**Biological Limit:** No biological limit allocated.

**Engineering Controls:** Avoid inhalation. Use in well ventilated areas. Maintain dust levels below the recommended exposure standard. Work areas should be cleaned regularly by wet sweeping or vacuuming.

If placing concrete in enclosed areas or a confined space, ensure adequate forced ventilation. When dry concrete dust is present, ensure exposures to respirable crystalline silica (quartz) are maintained below NES. Local mechanical ventilation may be required in areas where spray droplets from wet concrete or dry dust could escape into the work environment.

### Personal Protection

**Skin Protection:** Prevent all contact with skin.

When handling wet concrete personnel should wear loose comfortable clothing and impervious boots (AS/NZS 4501) and suitable protective/impervious gloves such as PVC or rubber (AS 2161).



Never kneel in wet concrete, or allow extended contact of skin with wet concrete. Contact with plastic concrete will cause severe irritation and possible chemical burns, dermatitis and dry skin.

- The cement is alkaline in nature so plastic concrete and mortars are strongly alkaline (pH of 12 – 13.5). Strong alkalis, like strong acids, are harmful or caustic to the skin.

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- The 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
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If concrete gets into boots, remove socks and boots immediately and wash skin thoroughly. Wash work clothes regularly. When using large quantities or where heavy contamination is likely, wear coveralls.

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.

**Eye Protection:** Prevent all contact with eyes.

Splash resistant Safety Glasses with side shields or safety goggles (AS/NZ 1336). A faceshield should be worn in addition to eye protection..



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 Protection:** In dusty environments use a respirator (filter mask) such as Class P1 or P2 (AS/NZS 1715 and AS/NZS 1716).

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance:** Pre-mixed Concrete is a plastic mixture of water, activators, 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, >11.0 in wet plastic state

**Vapour pressure:** Not determined

**Vapour Density:** Not applicable

**Boiling Point/range:** Not determined

**Freezing/Melting Point:** Melting point >1200°C

**Solubility in water:** Not soluble or slight, reacts on mixing with water forming an alkaline (caustic) solution (pH >11)

**Solubility (Other):** Not applicable

**Specific gravity: (H<sub>2</sub>O = 1)** 2.5

**Evaporation Rate:** Not applicable

**Flammability Limits:** Not applicable

**Flash Point:** Not applicable

**Explosive Properties:** Not applicable

## SECTION 10: STABILITY AND REACTIVITY

**Chemical Stability:** Chemically stable

**Incompatible Materials:** None

**Conditions to avoid:** Keep away from water. Dust generation.

**Hazardous Decomposition products:** None

**Hazardous Polymerisation:** None

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## SECTION 11: TOXICOLOGICAL INFORMATION

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### Health Effects

#### Acute -

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

**Eye:** Irritating and may cause alkaline (caustic) burns to the eyes. A splash of wet concrete into the eye can cause serious and rapid corrosive burning, with potential for permanent loss of vision.

**Skin:** Irritating, abrasive and drying to the skin. May cause alkaline (caustic) burns if direct contact with wet concrete is prolonged without treatment, leading to second or even third degree burns.

**Inhaled:** 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.

#### Long Term (Chronic) 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.

**Inhaled:** 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). Concrete is not listed as a carcinogen by Safework Australia. Risk of cancer has not been identified from using concrete. However the International Agency for Research on Cancer (IARC) has classified Crystalline Silica inhaled in the form of quartz or cristobalite from occupational sources, as carcinogenic to humans (Group 1).

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## SECTION 12: ECOLOGICAL INFORMATION

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**Ecotoxicity:** Product forms an alkaline slurry.

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

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

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## SECTION 13: DISPOSAL CONSIDERATIONS

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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 Section 8 above).

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## SECTION 14: TRANSPORTATION INFORMATION

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### Transport Requirements:

Not regulated as dangerous goods. Transport equipment should be strong enough to contain a fluid with an effective specific gravity of 2.5.

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## SECTION 15: REGULATORY INFORMATION

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**Classification:** Hazardous according to Safework Australia/NOHSC criteria and not classified as Dangerous Goods.

**Hazard Symbol:** None allocated

**Poisons Schedule:** 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 if monitoring indicates excessive exposure (Safework Australia/NOHSC).

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## SECTION 16: OTHER INFORMATION

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**Poisons Information Centre 13 11 26**

**Australian and New Zealand Standards:**

AS 2161: Industrial Safety Gloves and Mittens (excluding electrical and medical gloves).

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/NZS 4501: Occupational protective clothing.

National Code of Practice for the Preparation of Material Safety Data Sheets 2<sup>nd</sup> Edition  
[NOHSC:2011(2003)], April 2003, National Occupational Health and Safety Commission.

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**MSDS Revision Summary**

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**END of MSDS**