SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION

Product Identifier	**ALPHAFLOOR**
SDS Developed for	Australia
Recommended Use of the Product	ALPHAFLOOR has a wide variety of use in floor construction.
Restrictions on the Use of the Product	None
Manufacturer	XCEM Pty Limited
Address	W2-07, 42 Wattle Street, Ultimo NSW 2007
Telephone	1800 88 XCEM (9236)
Email Address	info@XCEM.com.au
Website	www.xcem.com.au
Emergency Phone Number	13 11 26 (Poisons Information Centre)

This Safety Data Sheet (SDS) is issued by the manufacturer 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 manufacturer will not accept any responsibility for any changes made to its SDS by any other person or organization. The manufacturer will issue a new SDS when there is a change in product specifications and/or Standards, Codes, Guidelines, or Regulations.

SECTION 2 – HAZARD(S) IDENTIFICATION

Hazard Class and Category:

Serious eye damage/irritation – Category 1
Skin irritation – Category 2
Specific target organ toxicity (single exposure) – Category 3

Signal Word: Danger

(Corrosion)

(Exclamation mark)

SDS DATE: March 2021
VERSION NO: 5

Hazard Statements	Precautionary Statements
H315 - Causes skin irritation. **H318** - Causes serious eye damage. **H335** - May cause respiratory irritation. **H336** - May cause drowsiness or dizziness.	**P261 -** Avoid breathing dust. **P264** - Wash hands thoroughly after handling. **P271** - Use only outdoors or in a well-ventilated area (if dust is generated). **P280** - Wear eye protection/face protection and protective gloves. **P304 + P340** - IF INHALED: Remove person to fresh air and keep comfortable for breathing. **P305 + P354 + P338** - IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **P310** - IF IN EYES: Immediately call a POISON CENTRE or doctor/physician. **P302 + P352** - IF ON SKIN: Wash with plenty of soap and water **P332 + P319** - If skin irritation persists or feeling unwell: Get medical help. **P362 + P364** - Take off contaminated clothing and wash it before reuse.

SECTION 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Name	Other Identifiers	Proportion (by mass)
PORTLAND CEMENT[1]	CAS# 65997-15-1	35–65%
OTHER INGREDIENTS INCLUDING LIGHT WEIGHT AGGREGATES, ADMIXTURES, AND SUPPLEMENTARY CEMENTITIOUS MATERIALS THAT ARE NON-HAZARDOUS OR DO NOT IMPACT CLASSIFICATION OF THE PRODUCT		35–65%
ALKALI-RESISTANT GLASS FIBRES	CONTINUOUS GLASS FIBRES; GLASS OXIDE; CAS# 65997-17-3	<5%
LIMESTONE	CALCIUM CARBONATE; CALCITE; CAS# 1317-65-3	<5%

[1] May include minor amounts of calcium oxide (CAS# 1305-78-8).

SECTION 4 – FIRST AID MEASURES

First aid measures relate to exposure to dust generated from the product (e.g. during cutting, drilling, crushing, cleaning, etc.). Contact exposures with the dust are made worse with moisture on skin/eye/respiratory tract.

Skin Contact	Key Signs/Symptoms: Irritating to the skin; redness; chemical/caustic burn. First Aid: Remove heavily contaminated clothing immediately. Wash off skin thoroughly with water; use a mild soap if available. Shower if necessary. Seek medical attention for persistent irritation or burning of the skin.
Eye Contact	Key Signs/Symptoms: Irritating to the eye; lacrimation; pain; redness; may cause irreversible, severe lesions in cornea. First Aid: Immediately flush eyes with clean, tepid water for 15–20 minutes while occasionally lifting the upper and lower eyelids, to remove all traces. Do not rub eyes. If irritation or redness persists, seek medical attention.
Inhalation	Key Signs/Symptoms: Irritating to the respiratory system; coughing; sneezing; aggravation of pre-existing conditions (e.g. asthma, chronic obstructive airways disease, emphysema, etc.). First Aid: If irritation for discomfort occurs, remove to fresh air, away from dusty area. If irritation or discomfort persists, seek medical attention.
Ingestion	Key Signs/Symptoms: Irritating to mucous membranes of the mouth, throat, oesophagus, and stomach; may cause ulcerations. First Aid: Rinse mouth and lips with water. Do not induce vomiting. If symptoms persist, seek medical attention.
Advice to Doctor	Treat as for moderate to strong alkali and symptomatically.

SECTION 5 – FIRE-FIGHTING MEASURES

Suitable Extinguishing Equipment	Use carbon dioxide, foam, dry chemical, or water spray as appropriate for surrounding materials on fire.
Unsuitable Extinguishing Equipment	None.
Hazardous Combustion Products	None.
Special Protective Equipment and Precautions for Firefighters	None – See Section 8 for general personal protective measures.
Hazchem Code	Not assigned.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, protective equipment and emergency procedures	Recommendations in Section 8 should be followed if conditions are dusty.
Environmental Precautions	No specific precautions required.
Methods and materials for containment and clean up	Clean dust with a vacuum (preferably industrial grade, HEPA-filtered) to avoid airborne dust. If cleaning manually, wear personal protective equipment (Section 8) and applying water or sweeping compound before wiping or mopping. Avoid dry sweeping and use of compressed air.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling	Use/handle in a well-ventilated area (if dust is generated). Wash hands thoroughly after handling. Change out of contaminated clothing and protective equipment. Practice safe material handling (lifting) techniques for large loads.
Conditions for Safe Storage	No special requirements. Safety aspects of stockpiles and storage areas require risk assessment and control.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE STANDARDS				
Safe Work Australia Workplace Exposure Standards, unless otherwise stated	**Chemical Name**	**TWA (8 hours)**	**STEL / Peak Limit**	**Advisory**
	Portland cement	10 mg/m^3 (as inhalable dust)	Not established.	None.
	Continuous glass filament	2 mg/m^3 (as inhalable dust)	Not established.	The classification as a carcinogen need not apply to the alkali-resistant glass fibres in the product[2].
	Limestone/ Calcium carbonate	10 mg/m^3 (as inhalable dust)	Not established.	None.
	Calcium oxide	2 mg/m^3	Not established.	None.
Notes on Exposure Standards	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).			

[2] The classification as a carcinogen need not apply to fibres with a length weighted geometric mean diameter less two standard geometric errors greater than 6 µm; otherwise, Carc. 2.

	8-hour TWA (Time-weighted Average): the average airborne concentration of a particular substance permitted over an eight-hour working day and a 5-day working week. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers. For non-standard work shifts (i.e. longer than 8 hours per day or 40 hours per week), the WES for certain substances may require to be adjusted to account for the extended exposure time and shortened recovery time.
Biological Limit Values	Not established.
ENGINEERING CONTROLS & WORK PRACTICES	
Work Set-up	Use outdoors/in open air or in a well-ventilated area (if dust is generated). Mechanical local exhaust ventilation (LEV) or extraction systems may be required for dust-generating work in areas where there is insufficient natural/general dilution ventilation. Dust suppression methods (e.g. wetting) should also be considered.
Work Practices	Clean dust with a vacuum (preferably industrial grade, HEPA-filtered) to avoid airborne dust. If cleaning manually, wear personal protective equipment (Section 8) and applying water or sweeping compound before wiping or mopping. Avoid dry sweeping and use of compressed air. Where possible, vacuum or wash down contaminated equipment or mobile plant prior to maintenance and repair work.
PERSONAL PROTECTION	
Personal Hygiene:	Wash hands before eating, drinking, using the toilet, or smoking. Wash work clothes regularly.
Eye/Face:	For dust generating work (e.g. cutting, drilling, crushing, cleaning, etc.), wear safety glasses with side shields or dust-proof goggles to avoid contact with eyes.
Hand:	For dry handling/work, use any work-compatible protective gloves. For wet-handling/work, use water-proof/impervious, alkaline-resistant gloves (e.g. butyl, neoprene, nitrile, etc.).
Body:	Wear long sleeve shirt and full-length pants, or full coveralls. Where a body part is likely to be in contact with wet product, select protective clothing/PPE with water-proof/impervious materials covering that part.
Respiratory:	For dust generating work (e.g. cutting, drilling, crushing, cleaning, etc.), use Class P1 (Particulate) respirator at minimum. Respiratory protective equipment should be selected based on an assessment of the working conditions (conducted by a competent person and should be informed by occupational hygiene exposure assessment results). Refer to AS/NZS 1715.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance	PRE-CAST SOLID CONCRETE – GREY COLOUR
Odour	CEMENT ODOUR
Odour Threshold	NOT DETERMINED
pH	>7.0
Melting Point	1200 °C
Initial Boiling Point and Boiling Range	NOT DETERMINED
Flammability	NON-FLAMMABLE
Flash Point	NOT APPLICABLE
Evaporation Rate	NOT APPLICABLE
Partition Coefficient	NOT APPLICABLE
Vapour Pressure	NOT APPLICABLE
Vapour Density	NOT APPLICABLE
Relative Density	1.3–1.9
Viscosity	NOT APPLICABLE
Solubility	Slightly soluble. Reacts on mixing with water forming an alkaline (caustic) solution (pH >11).
Decomposition Temperature:	NOT DETERMINED
Auto-ignition Temperature:	NOT APPLICABLE
Volatile Organic Compounds (VOC) Content: (as specified by the Green Building Council of Australia)	0%

SECTION 10 – STABILITY AND REACTIVITY

Reactivity	Reacts with acids, powerful oxidisers (e.g. fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, oxygen difluoride, etc.), and slightly with water.
Chemical Stability	Stable under normal conditions.
Hazardous Reactions	None.
Conditions to Avoid	None.
Incompatible Materials	None.
Hazardous Decomposition Products	None.

SECTION 11 – TOXICOLOGICAL INFORMATION

Possible Routes of Exposure: Dermal/skin and eyes, Inhalation, Ingestion.

Early Onset Exposure Signs/Symptoms: See Section 4.

Delayed Health Effects: Depending on exposure conditions (e.g. quantities, moisture content, etc.), burns may develop at different rates.

Toxicological Effects:

Acute Toxicity

Portland cement, Alkali-resistant glass fibres, Limestone, Calcium oxide	Dermal • Based on available data, the classification criteria are not met. Inhalation • Based on available data, the classification criteria are not met. Oral • Based on available data, the classification criteria are not met.

Skin Corrosion/Irritation

Portland cement	Portland cement dust causes corrosions and ulcerations of the skin on contact with moisture when strongly alkaline calcium hydroxide (pH of 10–12) forms.
Alkali-resistant glass fibres	A few well-designed studies have supported previous findings of mechanical irritative effects on the skin, eyes and upper respiratory tract associated with coarse fibres.
Limestone	May cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling, and blistering.
Calcium oxide	Mild exposure causes irritation and partial-thickness burns. Prolonged exposure or high concentration products can cause full-thickness burns.

Serious Eye Damage/Irritation

Portland cement	Direct contact with cement may cause corneal damage by mechanical stress, immediate or delayed irritation or inflammation. Direct contact by larger amounts of dry cement or splashes of wet cement may cause effects ranging from moderate eye irritation (e.g. conjunctivitis or blepharitis) to chemical burns and blindness.
Alkali-resistant glass fibres	A few well-designed studies have supported previous findings of mechanical irritative effects on the skin, eyes and upper respiratory tract associated with coarse fibres.
Limestone	May cause mechanical irritation to the eyes.
Calcium oxide	Ocular exposure can produce severe conjunctival irritation and chemosis, corneal epithelial defects, limbal ischemia, permanent visual loss and in severe cases perforation.

Respiratory or Skin Sensitisation

Portland cement	Some individuals may develop eczema upon exposure to wet cement dust, caused either by the high pH which induces irritant contact dermatitis after prolonged contact, or by an immunological reaction to soluble hexavalent

	chromium (Cr(VI)) which elicits allergic contact dermatitis. The response may appear in a variety of forms ranging from a mild rash to severe dermatitis and is a combination of the two above mentioned mechanisms. Sensitization is unlikely to be induced by a chromate concentration of less than 2 ppm in portland cement dust. However, it cannot be ruled out that low-chromate portland cements may also induce allergic reactions in the case of an existing chromate sensitization. There is no indication of sensitisation of the respiratory system.
Alkali-resistant glass fibres, Limestone, Calcium oxide	Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity

Portland cement	The frequencies of sister chromatid exchanges (SCEs) measured in the lymphocytes of workers from an Indian portland cement plant found a higher mean SCE rate (8.98 per cell) among exposed workers, compared to that of the control group (3.5). The SCE rates were significantly increased in relation to the employment period. No adjustment for age was made. The relevance of these findings is unclear. Based on available data, the classification criteria are not met.
Alkali-resistant glass fibres, Limestone, Calcium oxide	Based on available data, the classification criteria are not met.

Carcinogenicity

Portland cement	Some epidemiological studies showed an increased risk of laryngeal cancer for the occupational group of construction workers who had been exposed to portland cement (with earlier co-exposure to lime), but there was no dose- or exposure-response relationship. No animal studies are available on the carcinogenic effects of portland cement. Due to the epidemiological findings, a suspected carcinogenic potential in humans cannot be ruled out for portland cement. IARC Carcinogenicity Classification: Not assigned. ACGIH Carcinogenicity Classification: A4 (Not classifiable as to its carcinogenicity to humans).
Alkali-resistant glass fibres	Results were available from two cohort studies in the USA and Canada. The US cohort study on one continuous glass filament plant, which included a nested case-control study, with information on smoking and co-exposure, provided no consistent evidence of an excess risk for lung cancer. The Canadian cohort study of one continuous glass filament plant did not

	include an assessment of smoking or co-exposure. This study also provided no consistent evidence of an excess risk for lung cancer. IARC Carcinogenicity Classification: 3 (Not classifiable as to its carcinogenicity to humans). ACGIH Carcinogenicity Classification: A4 (Not classifiable as to its carcinogenicity to humans).
Limestone, Calcium oxide	Based on available data, the classification criteria are not met.

Reproductive Toxicity

Portland cement, Alkali-resistant glass fibres, Limestone, Calcium oxide	Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity (Single Exposure)

Portland cement	Cement dust on the mucosal surface leads to strongly alkaline reactions and may cause considerable irritation to the mucosa or even ulcerations. Cement dust may irritate the throat and respiratory tract. Coughing, sneezing, and shortness of breath may occur following exposures in excess of occupational exposure limits. Overall, the pattern of evidence clearly indicates that occupational exposure to cement dust has produced deficits in respiratory function.
Limestone	May cause mechanical irritation to the respiratory tract.
Calcium oxide	Industrial experience has shown calcium oxide to be very irritating to mucous membranes and moist skin as a result of local liberation of heat and dehydration of tissues upon slaking of the small size particles and the resulting alkalinity of the slaked product. Inflammation of respiratory passages and ulceration and perforation of the nasal septum have been attributed to inhalation of lime dust.

Specific Target Organ Toxicity (Repeated Exposure)

Portland cement	There is an indication of COPD. The effects are acute and due to high exposures. No chronic effects or effects at low concentration have been observed. Based on available data, the classification criteria are not met.
Alkali-resistant glass fibres, Limestone, Calcium oxide	Based on available data, the classification criteria are not met.

Aspiration Hazard

Portland cement, Alkali-resistant glass fibres, Limestone, Calcium oxide	Based on available data, the classification criteria are not met.

Additional Notes

• No specific toxicology data available for the overall product, but toxicity of the product is anticipated to be very low with LD50 >5,000mg/kg. • Inhalation of dust, is considered by medical authorities to increase the risk of lung disease due to tobacco smoking.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity	Product as delivered has low eco-toxicity and are not regarded as posing any ecological risk. Crushed product and dust may form an alkaline slurry when mixed with water.
Persistence and Degradability	Product is persistent and would have a low degradability.
Bio-accumulative Potential	There is no evidence to suggest bioaccumulation will occur.
Mobility in Soil	A low mobility would be expected in a landfill situation.
Other Adverse Effects	None.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal Methods: Product can be treated as a common waste for disposal or dumped into a landfill site in accordance with local authority guidelines.

Measures should be taken to prevent dust generation during disposal, and exposure and personal precautions should be observed (see Section 8 above).

SECTION 14 – TRANSPORT INFORMATION

UN Number	Not assigned.
Propper Shipping Name or Technical Name	Not assigned.
Transport Hazard Class	Not assigned.
Packing Group	Not assigned.
Environmental Hazards for Transport Purposes	None.
Special Precautions for User	None.
Additional Information	None.
Hazchem Code or Emergency Action Code	Not assigned.

SECTION 15 – REGULATORY INFORMATION

Poisons Standard (Standard for the Uniform Scheduling of Medicines and Poisons; SUSMP)	Not scheduled.
Australian Inventory of Chemical Substances (AICS)	No permitting requirements.

SECTION 16 – OTHER INFORMATION

Date of SDS Revision: March 2021

Abbreviations and Acronyms

Abbreviation / Acronym	Description
ACGIH	American Conference of Governmental Industrial Hygienists
AICS	Australian Inventory of Chemical Substances
AIOH	Australian Institute of Occupational Hygienists
AS/NZS	Australian/New Zealand Standard
CAS	Chemical Abstracts Service (Registry)
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
HCIS	Hazardous Chemical Information System
IARC	International Agency for Research on Cancer
LD50	Median lethal dose
mg/m^3	Milligram per cubic metre
PPE	Personal protective equipment
pH	Potential of hydrogen
SDS	Safety data sheet
STEL	Short term exposure limit
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TWA	Time-weighted average
UN	United Nations
VOC	Volatile organic compound(s)
WES	Workplace Exposure Standard(s)

Australian Standards References

AS/NZS 1336	Eye and Face Protection - Guidelines
AS/NZS 1715	Selection, Use and Maintenance of Respiratory Protective Devices
AS/NZS 1716	Respiratory Protective Devices
AS/NZS 2161	Occupational Protective Gloves

AS 3640	Workplace atmospheres – Method for sampling and gravimetric determination of inhalable dust

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Prospective monitoring of exposure and lung function among cement workers, Interim report of the study after the data collection of Phase I-II 2006-2010, Hilde Notø, Helge Kjuus, Marit Skogstad and Karl-Christian Nordby, National Institute of Occupational Health, Oslo, Norway, March 2010.

TNO report V8801/02, An acute (4-hour) inhalation toxicity study with Portland Cement Clinker CLP/GHS 03-2010-fine in rats, July 2010.

TNO report V8815/09, Evaluation of eye irritation potential of cement clinker G in vitro using the isolated chicken eye test, April 2010.

TNO report V8815/10, Evaluation of eye irritation potential of cement clinker W in vitro using the isolated chicken eye test, April 2010.

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