

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name **GROUND GRANULATED BLAST FURNACE SLAG**
Supplier Name **COCKBURN CEMENT LIMITED** ABN 50 008 673 470
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Synonym(s) GGBFS, GROUND GRANULATED BLAST FURNACE SLAG, NEAT MILLED SLAG, NMS, SLAG, GROUND SLAG, GRANULATED BLAST FURNACE SLAG, GBFS.
Use(s) supplementary cementitious material (SCM) that is used in the manufacture of cementitious binders and as a partial replacement for Portland Cement in concrete and other similar products. Also used in glass making, construction sand, and as a agricultural soil conditioner.

2. HAZARDS IDENTIFICATION

This product is classified as hazardous according to Safe Work Australia criteria.
 Not classified as a dangerous good by the criteria of the ADG code, IMDG or IATA.

GHS Classifications

Skin Corrosion/Irritation:	Category 2
Skin Sensitization:	Category 1B
Serious Eye Damage / Eye Irritation:	Category 1
Specific Target Organ Systemic Toxicity (Repeated Exposure):	Category 2

SIGNAL WORD Pictograms

DANGER



Hazard statements

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H373	May cause damage to lungs and respiratory tract through prolonged or repeated exposure.

Prevention statements

P260	Do not breathe dust.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response statements

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.
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UN No	None Allocated	Hazchem Code	None Allocated	Pkg Group	None Allocated
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DG Class None Allocated **Subsidiary Risk(s)** None Allocated **EPG** None Allocated

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	Formula	Conc.	CAS No.
GRANULATED BLAST FURNACE SLAG	Not Available	> 90%	65997-69-2
GYPSUM	CaSO ₄ 2H ₂ O	2 - 5%	10101-41-4
CRYSTALLINE SILICA (QUARTZ)	SiO ₂	< 1%	14808-60-7
CHROMIUM (VI) HEXAVALENT	Cr ⁶⁺	Trace	18540-29-9

4. FIRST AID MEASURES

Eye	Flush thoroughly with flowing water for at least 15 minutes. Seek medical attention if symptoms persist.
Inhalation	Remove from dusty area to fresh air. If symptoms persist, seek medical attention.
Skin	Remove heavily contaminated clothing immediately. Wash off skin thoroughly with water. A shower may be required. Seek medical attention for persistent irritation or burning of the skin
Ingestion	Rinse mouth and lips with water. Do not induce vomiting. Give water to drink to dilute stomach contents. If symptoms persist, seek medical attention.
Advice to Doctor	Treat symptomatically.
First Aid Facilities	Eye wash station.

Additional Information - Aggravated Medical Conditions

Inhalation	Over exposure resulting from prolonged and repeated inhalation of dust containing crystalline silica can cause bronchitis, silicosis (scarring of the lung.) It may also increase the risk of scleroderma (a disease affecting the connective tissue of the skin, joints, blood vessels and internal organs) and lung cancer. Epidemiological studies have shown that smoking increases the risk of bronchitis, silicosis (scarring of the lung) and lung cancer in persons exposed to crystalline silica.
Skin	Prolonged and repeated skin contact with cement in wet concrete, mortars and slurries may result in irritant dermatitis.

5. FIRE FIGHTING

Flammability	Non-flammable. Does not support combustion of other materials.
Fire and Explosion	No fire or explosion hazard exists.
Extinguishing	Non-flammable; use suitable extinguishing agent for surrounding fire.
Hazchem Code	None.

6. ACCIDENTAL RELEASE MEASURES

Spillage	If spilt (bulk), contact emergency services if appropriate. Wear dust-proof goggles, PVC/rubber gloves, a Class P2 respirator (where an inhalation risk exists), coveralls and rubber boots. Clear area of all unprotected personnel. Prevent spill entering drains or waterways. Collect and place in sealable containers for disposal or reuse. Avoid generating dust.
Emergency Procedures	Follow safety requirements for personal protection under Section 8 Exposure Controls/Personal Protection.

7. HANDLING AND STORAGE

Storage	Store off the floor in the original bags in a cool, dry, well ventilated area, removed from excessive moisture and heat. Ensure packages are adequately labelled, protected from physical damage and sealed when not in use.
Handling	Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking, and smoking in contaminated areas.
Property/ Environmental	Refer to Section 13.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation	Do not inhale dust/powder. Use with adequate ventilation. Where a dust inhalation hazard exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.
Exposure Standards	<p>GROUND GRANULATED BLAST FURNACE SLAG (65997-69-2) ES-TWA: 10mg/m³ (Respirable Dust) GYPSUM (10101-41-4) ES-TWA: 10 mg/m³ (Respirable Dust) SILICA, CRYSTALLINE – QUARTZ (14808-60-7) ES-TWA: 0.05 mg/m³ (Respirable Dust). Under Model WHS Law adopted in most Australian jurisdictions. CHROMIUM (VI) HEXAVALENT (18540-29-9) ES-TWA: 0.05 mg/m³ (Chromium VI compounds)</p>
PPE	Wear dust-proof goggles and rubber or PVC gloves. Where an inhalation risk exists, wear a Class P2 respirator. If there is potential for prolonged and/or excessive skin contact, wear coveralls. At high dust levels, wear a Class P3 respirator or a Powered Air Purifying Respirator (PAPR) with Class P3 filter.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Fine white powder	Solubility (water)	Slight, hardens on mixing with water
Odour	Odourless	Specific Gravity	2.8 to 3.2
pH	Approximately 12	% Volatiles	Not Available
Vapour Pressure	Not Available	Flammability	Non Flammable
Vapour Density	Not Available	Flash Point	Not Relevant
Boiling Point	Not Available	Upper Explosion Limit	Not Relevant
Melting Point	> 1200°C	Lower Explosion Limit	Not Relevant
Evaporation Rate	Not Available	Autoignition Temperature	Not Available
Bulk Density	1200 - 1600 kg/m ³		
Particle Size	20 - 40% of particles are < 7 µm (Respirable Range)		

10. STABILITY AND REACTIVITY

Chemical Stability	Chemically Stable
Conditions to Avoid	Keep free of moisture
Incompatible	Incompatible with oxidising agents (e.g. hypochlorites), ethanol, acids (e.g. hydrofluoric acid) and interhalogens (e.g. chlorine trifluoride). Water contact may increase product
Materials	
Decomposition Products	Unlikely to evolve toxic gases when heated to decomposition.
Hazardous Reactions	None

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	No known toxicity data available for this product.
Eye	Irritant upon contact with dust. Over exposure may result in pain, redness, corneal burns, and ulceration with possible permanent damage.
Inhalation	Irritating to the respiratory system, causing coughing and sneezing. Over exposure may result in severe mucous membrane irritation and bronchitis. Crystalline silica can cause silicosis (lung disease) with chronic over exposure, however due to low levels present and product application, adverse health effects are not anticipated.
Skin	Irritating to the skin. Prolonged and repeated contact with powder or wetted form may result in skin rash, dermatitis, and sensitisation.
Ingestion	Slightly corrosive. Ingestion may result in burns to the mouth and throat, with vomiting and abdominal pain. Due to product form, ingestion is not considered a likely exposure route.
Mutagenicity	Insufficient data available for this product to classify as a mutagen.
Carcinogenicity	Ground granulated blast furnace slag is not classified as a carcinogen by NOHSC. Crystalline silica is carcinogenic to humans (IARC Group 1), however due to low levels present and product application, the criteria for classification is not met.

12. ECOLOGICAL INFORMATION

Toxicity	Product forms an alkaline slurry when mixed with water. This product is non-toxic to aquatic life forms when present in cured solid form.
Persistence & Degradability	Product is persistent and would have a low degradability.
Mobility in soil	A low mobility would be expected in a landfill situation.

13. DISPOSAL CONSIDERATIONS

Waste Disposal	Reuse or recycle where possible. Alternatively, ensure product is covered with moist soil to prevent dust generation and dispose of to an approved landfill site. Contact the manufacturer for additional information.
Legislation	Dispose of in accordance with relevant local legislation. Keep out of sewer and stormwater drains.

14. TRANSPORT INFORMATION

Only classified as a dangerous good when transported by air (ADG Code).

Transport is by rail or road in bulk or bag form.

Drivers of trucks transporting bagged product should ensure that the bags are properly restrained.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

Shipping Name	None Allocated				
UN No	None Allocated	Hazchem Code	None Allocated	Pkg Group	None Allocated
DG Class	None Allocated	Subsidiary Risk(s)	None Allocated	EPG	None Allocated

15. REGULATORY INFORMATION

Poison Schedule AICS	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP). All chemicals listed on the Australian Inventory of Chemical Substances (AICS).
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16. OTHER INFORMATION

Additional Information	<p>CEMENT CONTACT DERMATITIS: Individuals using wet cement, mortar, grout, or concrete could be at risk of developing cement dermatitis. Symptoms of exposure include itchy, tender, swollen, hot, cracked, or blistering skin with the potential for sensitisation. The dermatitis is due to the presence of soluble (hexavalent) chromium.</p> <p>IARC – GROUP 1 – PROVEN HUMAN CARCINOGEN. This product contains an ingredient for which there is sufficient evidence to have been classified by the International Agency for Research into Cancer as a human carcinogen. The use of products known to be human carcinogens should be strictly monitored and controlled.</p> <p>RESPIRATORS: In general, the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.</p>
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PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The Recommendation for protective equipment contained within this SDS report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

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. Given that it is impractical to prepare an SDS report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

ABBREVIATIONS:

mg/m³ – Milligrams per cubic metre

ppm – Parts Per Million

ES-TWA – Exposure Standard - Time Weighted Average

CNS – Central Nervous System

NOS – Not Otherwise Specified

pH – relates to hydrogen ion concentration – this value will relate to a scale of 0 – 14, where 0 is highly acidic and 14 is highly alkaline.

CAS# - Chemical Abstract Service Number – used to uniquely identify chemical compounds.

IARC – International Agency for Research on Cancer.

Report Status

This document has been compiled by Cockburn Cement Limited the manufacturer of the product and serves as the manufacturer's Safety Data Sheet.

While the information in this Safety Data Sheet has been prepared in good faith, Cockburn Cement Limited does not warrant that the information is accurate, complete, or up to date.

Contact Point

For further information on this product contact:

Telephone: Office hours 08 9411 1111

Web site: www.cockburncement.com.au

Advice Note

The information in this document is believed to be accurate. Please check the currency of this SDS by contacting:

08 9411 1111

or

www.cockburncement.com.au or www.swacement.com.au

Each user of any information, or any product referred to, in this Safety Data Sheet must:

- Determine whether the information or product is suitable for their purpose;
- Assess and control any risks associated with the information or product; and
- Obtain professional advice in relation to the use of the information or product.

To the extent permitted by law, Cockburn Cement Limited:

- Excludes all representations, warranties, and guarantees in relation to any information in this Safety Data Sheet; and
- Will not be liable for any direct, indirect, consequential, incidental, special or economic loss (including but not limited to any loss of actual or anticipated profits, revenue, savings, production, business, opportunity, access to markets, goodwill, reputation, publicity, or use) arising from any use of or reliance on any information in this Safety Data Sheet.