



# Material Safety Data Sheet



## Product Name **Granulated Blast Furnace Slag**

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<b>Product Name</b>	<b>GRANULATED BLAST FURNACE SLAG</b>
<b>Supplier Contact Details</b>	Cockburn Cement A.B.N. 50.008.673.470 PO Box 38, Hamilton Hill, WA 6963 Munster Works, Lot 242, Russell Road East, Munster WA 6166 Kwinana Works, Leath Road, Kwinana WA 6167
<b>Telephone</b>	08 9411 1000
<b>Fax</b>	08 9411 1150
<b>Emergency</b>	Bus Hrs 08 9411 1000 A/Hrs 08 9411 1000
<b>Email</b>	orders@cockburncement.com.au
<b>Web Site</b>	<a href="http://www.cockburn.com.au">http://www.cockburn.com.au</a> & <a href="http://www.swacement.com.au">www.swacement.com.au</a>
<b>Synonym(s)</b>	Granulated slag, slag, blast furnace slag
<b>Use(s)</b>	Supplementary cementitious material in blended cements. Used in glass making, construction sand and a soil conditioner in agriculture.

### 2. HAZARDS IDENTIFICATION

This product is self classified as hazardous according to criteria of UN GHS and NOHSC.

Respirable dust may contain >0.1% respirable crystalline silica.

#### Current EU Classification (Under EC Directive 67/548)

The classification of crystalline silica as R48/20 is voluntary (as defined in Article 6 of the European directive 67/548/EEC) as no European classification currently exists. Classification is based on increased cancer risk as secondary to silicosis and high doses are recognised to cause silicosis.

#### UN GHS Classification

Based on evidence supporting increased cancer risk as secondary to silicosis and high doses are recognized to cause silicosis, crystalline silica is classified as Specific Target Organ Toxicity (STOT) repeated dose cat 1.

#### RISK PHRASES

R26/37/38	Irritating to eyes, respiratory system and skin.
R40	Limited evidence of a carcinogenic effect.
R48/20 H372	Harmful : danger of serious damage to health by prolonged exposure through inhalation.

#### SAFETY PHRASES

S20/21	When using do not eat, drink or smoke.
S22	Do not breathe dust.
S24/25	Avoid contact with skin and eyes.
S36/37	Wear suitable protective clothing and gloves.
S38	In case of insufficient ventilation, wear suitable respiratory equipment.

Not classified as a dangerous good by the criteria of the ADG code

<b>UN No</b>	None Allocated	<b>Hazchem Code</b>	None Allocated	<b>Pkg Group</b>	None Allocated
<b>DG Class</b>	None Allocated	<b>Subsidiary Risk(s)</b>	None Allocated	<b>EPG</b>	None Allocated

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	Formula	Conc.	CAS No.
Granulated blast furnace slag	Not Available	90-100%	65996-69-2
Crystalline silica	SiO <sub>2</sub>	>0.1%	14808-60-7
Sulphides	S <sup>2-</sup>	<2%	
Iron oxide	Fe <sub>2</sub> O <sub>3</sub>	0 – 3%	



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## 4. FIRST AID MEASURES

<b>Eye</b>	Flush thoroughly with flowing water. Seek medical attention if symptoms persist.
<b>Inhalation</b>	Remove from dusty area to fresh air. If symptoms persist, seek medical attention.
<b>Skin</b>	Flush thoroughly with flowing water.
<b>Ingestion</b>	Rinse mouth and lips with water. Do not induce vomiting. If symptoms persist, seek medical attention.
<b>Advice to Doctor</b>	Treat symptomatically.
<b>First Aid Facilities</b>	Eye wash facilities should be provided.

### Additional Information - Aggravated Medical Conditions

<b>Inhalation</b>	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.
<b>Skin</b>	Prolonged and repeated skin contact with slag may result in irritant dermatitis.

## 5. FIRE FIGHTING

<b>Flammability</b>	Non flammable. Does not support combustion of other materials.
<b>Fire and Explosion</b>	Non flammable. Does not cause dust explosions.
<b>Extinguishing</b>	Non flammable.
<b>Hazchem Code</b>	None.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Spillage</b>	Spray lightly with water to avoid creating dust and sweep/shovel into a suitable container for small spills. For larger spills, remove spilled material with mechanical equipment (eg front end loader). Avoid generating dust.
<b>Emergency Procedures</b>	Follow safety requirements for personal protection under Section 8 Exposure Controls/Personal Protection.

## 7. HANDLING AND STORAGE

<b>Storage</b>	Store in dry, well ventilated area, removed from moisture, oxidising agents (eg. hypochlorites, phosphorus oxide), acids, (eg. hydrochloric acid), ethanol, interhalogens (eg. chlorine trifluoride) and foodstuffs. Ensure packages are adequately labelled, protected from physical damage and sealed when not in use.
<b>Handling</b>	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.
<b>Property/ Environmental</b>	Refer to Section 13.



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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Ventilation</b>	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.
<b>Exposure Standards</b>	Silica, Crystalline – Quartz (14808-60-7) ES-TWA: 0.1 mg/m <sup>3</sup> (Silica Quartz, respirable, NOHSC) ES-TWA#: 0.1 mg/m <sup>3</sup> (QLD); 0.15 mg/m <sup>3</sup> (NSW) WES-TWA: 0.2 mg/m <sup>3</sup>
<b>PPE</b>	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

<b>Appearance</b>	Fine powder to sand sized ranging in colour from grey to off-white	<b>Solubility (water)</b>	Slight, hardens on mixing with water
<b>Odour</b>	Odourless	<b>Specific Gravity</b>	2.9
<b>pH</b>	Approximately 12 (Alkaline)	<b>% Volatiles</b>	Not Available
<b>Vapour Pressure</b>	Not Available	<b>Flammability</b>	Non Flammable
<b>Vapour Density</b>	Not Available	<b>Flash Point</b>	Not Relevant
<b>Boiling Point</b>	Not Available	<b>Upper Explosion Limit</b>	Not Relevant
<b>Melting Point</b>	> 1200°C	<b>Lower Explosion Limit</b>	Not Relevant
<b>Evaporation Rate</b>	Not Available	<b>Autoignition Temperature</b>	Not Available
<b>Bulk Density</b>	1000 - 1600 kg/m <sup>3</sup>		

### 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	Incompatible with oxidising agents (eg hypochlorites), ethanol, acids (eg hydrochloric acid) and interhalogens (eg chlorine trifluoride) in the presence of water.
<b>Decomposition Products</b>	May evolve toxic gases when heated to decomposition.

### 11. TOXICOLOGICAL INFORMATION

<b>Health Hazard Summary</b>	Avoid eye or skin contact or dust inhalation. This product has the potential to cause acute and chronic health effects with over exposure. 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. Crystalline silica is classified as carcinogenic to humans (IARC Group 1).
<b>Eye</b>	Abrasive. Severe irritant upon contact with powder/dust. Over exposure may result in pain, redness, corneal burns and ulceration with possible permanent damage.
<b>Inhalation</b>	Slightly corrosive. Over exposure may result in severe mucous membrane irritation and bronchitis. Hexavalent chromium is reported to cause respiratory sensitisation, however due to the trace amount present, a hazard is not anticipated under normal conditions of use.
<b>Skin</b>	Slightly corrosive. Prolonged and repeated contact with powder or wetted form may result in skin rash, dermatitis and sensitisation.
<b>Ingestion</b>	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.
<b>Toxicity Data</b>	Silica, Crystalline - Quartz (14808-60-7) Carcinogenicity: Classified as a human carcinogen (IARC Group 1) Chromium (VI) (18540-29-9) Carcinogenicity: Confirmed human carcinogen (IARC Group 1) Health Surveillance: Required [NOHSC:1005(1994)] Calcium hydroxide (1305-62-0) LD50 (Ingestion): 7300 mg/kg (mouse)

### 12. ECOLOGICAL INFORMATION



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**Environment** Very low in natural form. Most acute and chronic toxicity values are <1.0 mg/L. Most impact on aquatic systems relate to smothering rather than toxicity.

### 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

<b>Shipping Name</b>	None Allocated	<b>Hazchem Code</b>	None Allocated	<b>Pkg Group</b>	None Allocated
<b>UN No</b>	None Allocated	<b>Subsidiary Risk(s)</b>	None Allocated	<b>EPG</b>	None Allocated
<b>DG Class</b>	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).

### 16. OTHER INFORMATION

**Additional** CONTACT DERMATITIS: Individuals handling slag without appropriate PPE could be at risk of developing dermatitis from the sharp glass shards present in the product. Symptoms of exposure include itchy, tender, swollen, cracked or blistering skin with the potential for sensitisation.

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.

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.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The Recommendation for protective equipment contained within this MSDS 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 MSDS report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

ABBREVIATIONS:  
mg/m<sup>3</sup> - Milligrams per cubic metre  
ppm - Parts Per Million

