Safety Data Sheet
Ground Granulated Blast Furnace Slag

Section 1: Material and Supplier Information

Product Name: Ground Granulated Blast Furnace slag

Applicable In: Australia

Other Names: GGBS, Slag powder

Recommended Use: Slag can be used to produce blended cements, It can be also used to stabilization processes in soil stabilization, civil engineering construction as a supplementary Cementous material.

Company Details: Independent Cement & Lime Pty Ltd
750 Lorimer Street
Port Melbourne, VIC 3207
ABN 49 005 829 550

Emergency Contact Number: Contact Person: Technical Manager
Telephone**:** Office hours-03 9676 0000 or Poisons information Centre 13 11 26

Phone: VIC 03 9676 0000

Fax: VIC 03 9646 4954

This Safety Data Sheet (SDS) is issued by Independent Cement & Lime Pty Ltd in accordance with the Code and guidelines from the Australian Safety and Compensation Council (ASCC). The information in it must not be altered, deleted or added to. Independent Cement & Lime Pty Ltd will not accept any responsibility for any changes made to its SDS by any other person or organization. Independent Cement & Lime Pty Ltd will issue a new SDS when there is a change in product specifications and/ or ASCC standards, guidelines or regulations.

Section 2: Hazards Identification

Statement of 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	Criteria 2
Serious Eye Damage/Eye Irritation:	Criteria 1
Specific Target Organ Systematic Toxicity (Repeated Exposure):	Category 2

SIGNAL WORD **DANGER**

Pictograms

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/fume/gas/mist/vapours/spray
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.

Disposable Statements

P501	Dispose of contents/container in accordance with relevant regulations.

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

Section 3: Composition / Information on Ingredients

Ingredient	Formula	Proportion	CAS Number
Slag	Not available	>95%	65996-69-2

Product may contain 3-8% Gypsum (10101-41-4) and crystalline silica (Quartz)(14808-60-7)

Section 4: First Aid Measures

Eye: If slag powder is splashed in to the eyes, immediately flush thoroughly with flowing water for 15 minutes and seek urgent medical attention.

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 (scaring of the lung) and lung cancer in persons exposed to crystalline silica.

Skin Prolonged and repeated skin contact with slag may result in irritant dermatitis or alkaline burns.

Eye Irritating to the eye. If wet slag is splashed in to the eye, alkaline burns can cause permanent damage.

Section 5: Fire Fighting

Flammability: Not 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 Allocated

Section 6: Accidental Release Measures

Spillage: If spill (bulk), clean up by vacuum device to avoid generating airborne dust. 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.

Section 7: Handling and Storage

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.

Storage: Store in a cool, dry, well ventilated area, removed from excessive moisture and heat.

Property/Environmental Refer to Section 13.

Section 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

Slag (65996-69-2)

ES-TWA: 10 mg/m^3 (Respirable Dust)

Gypsum (10101-41-4)

ES-TWA: 10 mg/m^3 (Respirable Dust)

Crystalline Silica (Quartz) (14808-60-7)

ES-TWA: 0.1 mg/m^3 (Respirable Dust)

PPE Wear dust-proof goggles/safety glasses and rubber or PVC gloves. Where an inhalation risk exists, wear a clear P2 respirator. If there is potential for prolonged and/or excessive skin contact, wear long sleeve shirts and full-length trousers or similar clothing like overalls. At high dust levels, wear a Class P3 respirator or a Powered Air Purifying Respirator (PAPR) with class P3 filter. Check the site's specific risk assessment.

Section 9: Physical and Chemical Properties

Appearance	Fine white powder	**Solubility (water)**	Slight, hardens when mixing with water.
Odor	Odorless	**Specific Gravity**	2.9 to 3.2
pH (in water)	11-13	**% Volatiles**	Not Available
Vapor Pressure	Not Available	**Flammability**	Non-Flammable

Vapor Density	Not Available	**Flash Point**	Not Relevant
Boiling Point	Not Available	**Upper Explosion Limit**	Not Relevant
Melting Point	> 1200ºC	**Lower Explosion Limit**	Not Relevant
Evaporation Rate	Not Available	**Autoignition Temperature**	Not Available
Bulk Density	950-1600 kg/m^3		
Particle Size	20 – 40% of particles are <7 µm (Respirable Range)		

Section 10: Stability and Reactivity

Chemical Stability: Chemically Stable

Conditions to Avoid: Keep free of moisture

Incompatible Materials Incompatible with acids, alkali, ammonium salts and aluminum metal. Slag dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Water contact may increase the temperature of the product (2-3°C). Water reacts with slag and form silicate and calcium hydroxide.

Decomposition Products: Hydrogen sulfide may be released from moist slag when heated. Unlikely to evolve toxic gases when heated to decomposition.

Hazardous Reactions: None

Section 11: Toxicological Information

Acute Toxicity No known toxicity data for this product.

Eyes Irritant upon contact with powder/dust. Over exposure may result in pain, redness, corneal burns and ulceration with possible permanent damage.

Inhalation Slightly corrosive. 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 blast furnace slag is not classified as a carcinogen by NOHSC. Crystalline silica is classified as carcinogenic to humans (IARC Group 1), however due to low levels present and product application, the criteria for classification is not met.

Section 12: Ecological Information

Toxicity	Product forms a slightly alkaline product when mixed with water. This product is nontoxic to aquatic life forms when present in cured solid form.
Persistence and Degradability	Product is persistent and would have a low degradability.
Mobility in Soil	A low mobility would be expected in a landfill situation.

Section 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 storm water drains.

Section 14: Transport Information

Not classified as a dangerous good by the criteria of the ADG code.
Transport is by rail or road in bulk or bag form.
Drivers of trucks transporting bagged products should ensure that the bags are properly restrained.

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

Section 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 Standards (AICS).

Section 16: Other Information

Additional Information	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/m^3 – 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 Independent Cement & Lime Pty Ltd 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, Building Product Supplies 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 03 9676 0000

Facsimile: 03 9646 4954

Web site: http://www.independentcement.com.au

Advice Note

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

03 9676 0000

Or

http://www.independentcement.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.

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