MILLED SLAG

Material Safety Data Sheet

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

SUPPLIER NAME: SUNSTATE CEMENT LIMITED	**ADDRESS:** 8 Bulk Terminals Drive, Port of Brisbane Qld 4178
TELEPHONE: (07) 3895 9800	**EMERGENCY:** 0488 053 180 (D.Straede)
FAX: (07) 3895 9801	**WEBSITE:** http://www.sunstatecement.com.au/
EMAIL: damian.straede@sunstatecement.com.au	**SDS DATE:** 04 JUNE 2010
SYNONYM(S): GGBS • GROUND GRANULATED BLASTFURNACE SLAG • SLAG	
USE(S): CEMENT ADDITIVE • CONSTRUCTION MATERIAL • GLASS MANUFACTURE • ROAD STABILISATION	

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO ASCC CRITERIA

RISK PHRASES

R36/37/38	Irritating to eyes, respiratory system and skin.
R40	Limited evidence of carcinogenic effect.
R43	May cause sensitisation by skin contact.
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.

SAFETY PHRASES

S20	When using, do not eat, drink or smoke.
S22	Do not breath 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

UN No.	None Allocated	**DG class**	None Allocated	**Subsidiary Risk(s)**	None Allocated
Packing Group	None Allocated	**Hazchem Code**	None Allocated	**EPG**	None Allocated

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
CALCIUM OXIDE	Ca-O	1305-78-8	40-50%
QUARTZ (SILICA CRYSTALLINE)	Si-O2	14808-60-7	30-40%
SILICIC ACID	H2-O3-Si	7699-41-4	30-40%
ALUMINIUM OXIDE	Al2-O3	1344-28-1	10-20%
MAGNESIUM OXIDE	Mg-O	1309-48-4	<10%
MANGANESE	Mn	7439-96-5	<2%
SULPHUR	S	7704-34-9	<1.2%

4. FIRST AID MEASURES

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
Advice to Doctor	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flammability	Non flammable. May evolve toxic gases if strongly heated.
Fire and Explosion	No fire or explosion hazard exists.
Extinguishing	Prevent contamination of drains or waterways.
Hazchem Code	None Allocated

6. ACCIDENTAL RELEASE MEASURES

Spillage	Contact emergency services where appropriate. Use personal protective equipment. Clear area of all unprotected personnel. Ventilate area where possible. Contain spillage, then cover / absorb spill with non-combustible absorbant material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Avoid generating dust.

7. STORAGE AND HANDLING

Storage	Store tightly sealed in a cool, dry, well ventilated area, removed from acids, alkalis, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.
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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Stds	**Ingredient**	**Reference**	**TWA**		**STEL**	
			ppm	**mg/m3**	**ppm**	**mg/m3**
	Aluminium oxide (a)	ASCC (AUS)	--	10	--	--
	Calcium oxide	ASCC (AUS)	--	2	--	--
	Iron oxide fume (Fe2O3) (as Fe)	ASCC (AUS)	--	5	--	--
	Magnesium oxide (fume)	ASCC (AUS)	--	10	--	--
	Manganese, dust & compounds (as Mn)	ASCC (AUS)	--	1	--	--
	Silica, Crystalline Quartz	ASCC (AUS)	--	0.1	--	--
Biological Limits	No biological limit allocated.					
Engineering Controls	Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.					
PPE	Wear dust-proof goggles and rubber or PVC gloves. When using large quantities or where heavy contamination is likely, wear: coveralls. At high dust levels, wear: a Full-face Class P3 (Particulate) or an Air-line respirator. Where an inhalation risk exists, wear: a Class P1 (Particulate) respirator.					

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	OFF-WHITE POWDER	**Solubility (water)**	INSOLUBLE
Odour	ODOURLESS	**Specific Gravity**	2.8 to 2.9
pH	11 (approximately)	**% 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	>1350°C	**Lower Explosion Limit**	NOT RELEVANT
Evaporation Rate	NOT AVAILABLE		

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended conditions of storage.
Conditions to Avoid	Avoid contact with incompatible substances.
Material to Avoid	Incompatible with acids (e.g. nitric acid) and alkalis (e.g. hydroxides).
Decomposition	May evolve toxic gases if heated to decomposition.
Hazardous Reactions	Polymerization is not expected to occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Irritant. Use safe work practices to avoid eye or skin contact and inhalation. Chronic exposure to crystalline silica may result in lung fibrosis (silicosis). However, due to the low levels of crystalline silica, chronic health effects are not anticipated with normal use. Crystalline silica is classified as carcinogenic to humans (IARC Group 1).
Eye	Irritant. Contact may result in irritation, lacrimation, pain, redness and conjunctivitis. May result in burns with prolonged contact.
Inhalation	High chronic toxicity - irritant. Over exposure to dust may result in mucous membrane irritation of the respiratory tract. Chronic exposure to crystalline silica may result in silicosis (lung fibrosis). Crystalline silica is classified as carcinogenic to humans (IARC Group 1).
Skin	Irritant. Contact may result in irritation, redness, pain and rash. May cause sensitisation by skin contact.
Ingestion	Low to moderate toxicity. Ingestion may result in gastrointestinal irritation, nausea, vomiting, abdominal pain and diarrhoea.
Toxicity Data	**QUARTZ (SILICA CRYSTALLINE) (14808-60-7)** LCLo (Inhalation): 300 ug/m3/10 years (human) LDLo (Intratracheal): 200 mg/kg (rat) LDLo (Intravenous): 20 mg/kg (dog) TCLo (Inhalation): 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis) **SILICIC ACID (7699-41-4)** LDLo (Intravenous): 234 mg/kg (mouse) **MANGANESE (7439-96-5)** LD50 (Ingestion): 9000 mg/kg (rat) TCLo (Inhalation): 2300 ug/m3 (man - CNS) **IRON (III) OXIDE (1309-37-1)** LDLo (Subcutaneous): 30 mg/kg (dog) **SULPHUR (7704-34-9)** LC50 (Inhalation): 1660 mg/m3 (mammal) LDLo (Ingestion): 175 mg/kg (rabbit)

12. ECOLOGICAL INFORMATION

Environment	The main component/s of this product are not anticipated to cause any adverse effects to plants or animals.

13. DISPOSAL CONSIDERATIONS

Waste Disposal	Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer if additional information is required.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE					
Shipping Name	None Allocated				
UN No.	None Allocated	**DG class**	None Allocated	**Subsidiary Risk(s)**	None Allocated
Packing Group	None Allocated	**Hazchem Code**	None Allocated	**EPG**	None Allocated

15. REGULATORY INFORMATION

Poison Schedule	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).
AICS	All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Additional Information	**ALUMINO SILICATES:** When alumino silicates have been exposed to service temperatures exceeding 982°C for prolonged periods, cristobalite, a form of crystalline silica may be formed. Exposure to cristobalite dust may cause pulmonary fibrosis-silicosis. A hazard is only anticipated during demolition of used refractory materials. Cristobalite is classified as carcinogenic to humans (IARC Group 1). **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. **ABBREVIATIONS:** ADB - Air-Dry Basis. BEI - Biological Exposure Indice(s) CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds. CNS - Central Nervous System. EINECS - European INventory of Existing Commercial chemical Substances. IARC - International Agency for Research on Cancer. M - moles per litre, a unit of concentration. mg/m3 - Milligrams per cubic metre. NOS - Not Otherwise Specified. NTP - National Toxicology Program. OSHA - Occupational Safety and Health Administration. pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). ppm - Parts Per Million. RTECS - Registry of Toxic Effects of Chemical Substances. TWA/ES - Time Weighted Average or Exposure Standard.

Additional Information	**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 a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate. **PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:** The recommendation for protective equipment contained within this Chem Alert 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.
Report Status	This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Safety Data Sheet ('SDS'). It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer. While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury, or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.
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END OF REPORT.