

Material Safety Data Sheet

STEEL FURNACE SLAG

Infosafe™ LPW5B **Issue Date** May 2013 **Status** ISSUED by BS: 1.14.3
No. BSLNSW

Not classified as hazardous according to criteria of NOHSC

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Chemical**Product and
Company**

Identification Approval no: 832

Product Name STEEL FURNACE SLAG

Company Name BLUESCOPE STEEL (AIS) PTY LTD (ABN 19 000 019 625)

Address Five Islands Road Port Kembla
NSW 2505

Emergency Tel. 131126 Poison Info

**Telephone/Fax
Number** Tel: 02 4275 7522 (24/7 switch board)
Fax: 02 4275 7159

Recommended Use Steel furnace slag is used as a construction material in asphalt, sealing and roadbase applications. It is also used for rail ballast.

Other Names None Listed

**Additional
Information**

Steel Furnace Slag (SFS) is the non-metallic product consisting essentially of calcium silicates and ferrites combined with fused oxides of iron, aluminium, manganese, calcium and magnesium, that is developed in a molten condition simultaneously with steel in a basic oxygen furnace. Steel furnace slag results from the basic oxygen steelmaking process and is a solid rock-like material. Molten slag is poured into pots which are picked up by pot carrier, tipped into bays adjacent to the furnace and allowed to solidify under atmospheric conditions. Cooling may be accelerated by application of water to the solidified surface, after which the slag is dug, crushed and screened to produce various products.

2. HAZARDS IDENTIFICATION

Hazard Classification	Not classified as Hazardous according to criteria of National Occupational Health & Safety Commission, Australia (NOHSC). Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.
Safety Phrase (s)	S22 Do not breathe dust. S37/39 Wear suitable gloves and eye/face protection.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Name	CAS	Proportion
	Calcium oxide	1305-78-8	30-60 %
	Iron (II) oxide	1345-25-1	10-30 %
	Magnesium oxide	1309-48-4	5-20 %
	Manganese oxide	1344-43-0	3-10 %
	Vanadium pentoxide (V2O5)	1314-62-1	0.1-0.3 %
	Vanadium oxide (VO2)	12036-21-4	0.5-1 %
	Vanadium oxide (V2O3)	11099-11-9	0.5-2 %
	Sulphur	7704-34-9	0-0.2 %
	Aluminium Oxide	1344-28-1	0.5-5 %
	Silica	60676-86-0	5-20 %

Other Information	This product also contains small amounts of Titanium dioxide, Phosphorous oxide, Sodium oxide, Potassium oxide, Chromium oxide and Free lime. Quartz was not detected at the limit of detection of <0.5 % (w/w) Cristobalite was not detected at the limit of detection 1% (w/w)
--------------------------	--

4. FIRST AID MEASURES

Inhalation	If inhaled, remove to fresh area. Keep at rest until recovered. If symptoms persist seek medical attention.
Ingestion	Do not induce vomiting. Wash out mouth and lips thoroughly with water. Seek medical attention.
Skin	Remove all contaminated clothing. Wash gently and thoroughly with water and non-abrasive soap. Ensure contaminated clothing is washed before re-use or discard. If irritation develops or persists, seek medical attention.
Eye	If in eyes, hold eyelids apart and flush the eyes continuously with running water. Continue flushing for several minutes until all contaminants are washed off completely. Seek medical attention.

First Aid Facilities Normal washroom facilities.

Advice to Doctor Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media Use appropriate fire extinguisher for surrounding environment.

Hazards from Combustion Products Under fire conditions this product may emit toxic and/or irritating fumes and gases.

Specific Hazards Non-combustible solid.

Precautions in connection with Fire Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures Wear sufficient respiratory protection and protective clothing to minimise inhalation, skin and eye exposure. Collect the spillage mechanically and transfer to a truck or a holding area. The collected material is normally recycleable. Dispose of unrecycled or waste product according to applicable local and national regulations. If large quantities of this material enter waterways contact the EPA or your local Waste Management Authority.

7. HANDLING AND STORAGE

Precautions for Safe Handling Use with adequate ventilation. Avoid creating dusty conditions. Avoid inhalation of fine dust. Wear appropriate protective clothing/equipment to minimise inhalation, and skin and eye contact. Maintain good personal hygiene; always wash hands after handling the product, and before eating, drinking or smoking.

Conditions for Safe Storage The product is stored via normal stockpiling methods.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards No exposure value assigned for this material by Safe Work, Australia. However, the available exposure limits for ingredients are listed below:

Safe Work, Australia Exposure Standards:

Substance	TWA	mg/m ³
Vanadium pentoxide (V2O5)		0.05
Manganese oxide (dust & compounds, as Mn)		1
Calcium oxide		2
Iron oxide (fume)		5
Magnesium oxide (fume)		10
Dust (not otherwise specified)		10

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

Biological

Limit Values No biological limit allocated.

Engineering Controls

Use with good general ventilation. If dust is generated local exhaust ventilation should be used.

Respiratory Protection

Where sufficient ventilation is not available, avoid breathing dust by wearing an AS 1716 approved P1 or P2 particulate filter respirator. Final choice of appropriate breathing protection is dependant upon actual airborne concentrations and the type of breathing protection required will vary according to individual circumstances. Expert advice may be required to make this decision. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices.

Eye Protection

Safety glasses with side shields or chemical goggles should be worn. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection

Wear gloves of impervious material. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection

Suitable protective work wear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Dark grey/black coloured rock type material consisting of angular to roughly cubical shaped particles.

Odour

May have a very faint sulphurous odour.

Melting Point

1300-1400°C

Boiling Point

Not applicable

Solubility in Water

Not applicable

Specific

Gravity	Not applicable
pH Value	Not applicable
Vapour Pressure	Not applicable
Vapour Density (Air=1)	Not applicable
Evaporation Rate	Not applicable
Density	Bulk density: 1.60 - 1.90 t/m ³
Flash Point	Not applicable
Flammability	Non-combustible solid.
Flammable Limits - Lower	Not applicable
Flammable Limits - Upper	Not applicable

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions of storage and handling.
Conditions to Avoid	Dusty conditions.
Incompatible Materials	Not available
Hazardous Decomposition Products	Thermal decomposition may result in the release of toxic and/or irritating fumes.
Hazardous Reactions	
Hazardous Polymerization	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information	No toxicity data is available for this product.
Inhalation	Inhalation of fine dust may irritate the respiratory system.
Ingestion	Ingestion of this product may irritate the gastric tract causing nausea and vomiting.
Skin	Skin contact may cause mechanical irritation resulting in redness and itching.

Eye Eye contact may cause mechanical irritation. May result in corneal abrasion.

Chronic Effects Repeated or prolonged inhalation of fine dust may cause respiratory disorders. Prolonged or repeated contact with the skin in the absence of proper hygiene, may cause dryness and dermatitis.

12. ECOLOGICAL INFORMATION

Ecotoxicity No ecological data available for this product.

Persistence / Degradability Not available

Mobility Not available

Bioaccumulative Potential Not available

Environment Protection Do not allow product to enter drains, waterways or sewers.

13. DISPOSAL CONSIDERATIONS

Disposal Considerations The disposal of the waste material must be done in accordance with applicable local and national regulations.

14. TRANSPORT INFORMATION

Transport Information Not classified as Dangerous Goods, according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

IMDG Marine Pollutant (MP) No

15. REGULATORY INFORMATION

Regulatory Information Not classified as Hazardous according to criteria of National Occupational Health & Safety Commission (NOHSC), Australia. Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Poisons Schedule Not Scheduled

16. OTHER INFORMATION

**Date of
preparation or
last revision
of MSDS** MSDS Reviewed: May 2013
 Supersedes: March 2008

End of MSDS

(C) Copyright ACOHS Pty Ltd

Copyright in the source code of the HTML, PDF, XML, XFO and any other electronic files rendered by an Infosafe system for Infosafe MSDS displayed is the intellectual property of Acohs Pty Ltd.

Copyright in the layout, presentation and appearance of each Infosafe MSDS displayed is the intellectual property of Acohs Pty Ltd.

The compilation of MSDS's displayed is the intellectual property of Acohs Pty Ltd.

Copying of any MSDS displayed is permitted for personal use only and otherwise is not permitted. In particular the MSDS's displayed cannot be copied for the purpose of sale or licence or for inclusion as part of a collection of MSDS without the express written consent of Acohs Pty Ltd.

Print Date: 17/10/2013

BS: 1.14.3