

SILICA EARTH RESOURCES	SAFETY DATA SHEET (SDS)	
SER-OHS-SDS-001		
Revision B		

1. IDENTIFICATION

Chemical Name:	Amorphous Silica
Other Names:	Radiolarite, Diatomite, Opal C-T; Silicon Dioxide
Chemical Family:	Inorganic Silicate
Company Name:	Silica Earth Resources Pty Ltd
Company Address:	45 Gladstone Street, East Perth, Western Australia 6004
Company Telephone:	+61 (0)459 103 771
Emergency Telephone:	+61 (0)459 103 771 or +61 (0)427 105 200
Product Form:	Solid; Granulated Amorphous Silica
Product Name:	GrowSil; RemSil
Other Names:	Supersucker; General Purpose, Industrial Grade; Kitty Litter
Product Use:	Various; Soil ameliorant; Growth Substrate; Fertiliser; Absorbent; Filter Medium

2. COMPOSITION

General Description:	Naturally occurring biogenic radiolarite.		
XRF Analysis (Typical):	Constituent	Proportion (%)	CAS Number
	SiO ₂	85.6	7631-86-9
	Al ₂ O ₃	7.2	1344-28-1
	CaO	1.3	1305-78-8
	Fe ₂ O ₃	0.8	1309-37-1
	MgO	0.3	1309-48-4
	Loss of Ignition (LOI)	4.7	-
Other Information:	Given the material is naturally occurring, the above typical composition may vary.		

3. HAZARD IDENTIFICATION

Classification:	Not classified as hazardous according to the National Occupational Health and Safety Commission (NOHSC).
	Not classified as a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.
	Store in a dry, ventilated area.

4. FIRST AID MEASURES

Skin Contact:	Wash thoroughly with soap and water. Seek medical attention if symptoms develop.
Eye Contact:	Flush eyes immediately with large amounts of water for 15 minutes. Seek medical

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A	Murray Loxton	Mining Director	-	-	-
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	attention if symptoms develop.
Inhalation:	If cough, shortness of breath or other breathing problems occur, move to fresh air. Seek medical attention if symptoms persist. If necessary, restore normal breathing through standard first aid measures
Ingestion:	Material is non-hazardous, but could represent a choking hazard if large granules are swallowed. If ingested rinse mouth out with water and if symptoms develop seek medical advice.
First Aid Facilities:	Eye wash station and standard washroom facilities.
Advise to Medical Personnel:	Treat symptomatically
	Treat the same as any fine inert absorbent dust. This product is an absorbent and may cause dryness to the area of contact, treat with copious quantities of water. Pre-existing respiratory and lung conditions may be aggravated by exposure to dust.

5. FIRE-FIGHTING MEASURES

Extinguishing Media:	Silica is non-combustible, therefore no extinguishing media needs to be identified
Unsuitable Extinguishing Media:	None.
Specific hazards arising from the chemical:	None
Hazardous Combustion Products:	None
Precautions & Protective Equipment:	Natural product is non combustible, absorbed material may suppress or delay combustion of the absorbed volatiles, combustibility should be determined after evaluating the absorbed material.
Risk of Dust Explosion:	Not Applicable
Hazchem Code:	None Allocated

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures:	None required. Material is inert and non-hazardous to humans and the environment.
Containment and Clean-up:	Use suitable personal protective equipment (PPE). Clean-up by vacuum or brushing. Avoid using compressed air to minimise dust generation. Product can be recycled.

7. HANDLING AND STORAGE

Safe Handling:	Product requires no special handling requirements. Avoid creating and breathing fine dust and ensure adequate ventilation when handling.
Safe Storage:	Store in a dry, clean area, preferably off the ground.
Incompatible Materials:	None known.

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8. EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure Guidelines: Safe Work Australia (2013) *Workplace Exposure Standards for Airborne Contaminants*, Canberra, Australia.
 Work Health and Safety (WHS) Act 2011
 Work Health and Safety (WHS) Regulations 2011

Exposure Limits:	Constituent	Fraction	CAS Number	Time Weighted Average (TWA) (mg/m ³)
	SiO ₂	Inhalable	7631-86-9	10
		Respirable		2
	Al ₂ O ₃	Inhalable	1344-28-1	10
		Respirable		5
	CaO	Inhalable	1305-78-8	2
		Respirable		1
	Fe ₂ O ₃	Inhalable	1309-37-1	5
		Respirable		5
	MgO	Inhalable	1309-48-4	10
		Respirable		5
	Dust NOS*	Inhalable	-	5
		Respirable		2

* Dust NOS = Dust Not Otherwise Specified

Biological Exposure Limits: None known.

Engineering Controls: Ensure adequate ventilation to maintain exposures below occupational limits. Provide appropriate local exhaust ventilation at machinery and at places where dust can be generated.

Personal Protective Equipment

Eye / Face Protection: Not required under normal conditions of use. Protection may be required if handling large quantity of material.

Skin Protection: Not required under normal conditions of use. For prolonged exposure apply moisturizer or barrier cream to prevent skin from drying. Use of gloves and coveralls is advisable and wash hands and other exposed skin with mild soap and water.

Respiratory Protection: Not required under normal conditions of use. Approved respiratory or dust mask may be necessary if local exhaust ventilation is not adequate.

Other: Handle in accordance with good industrial hygiene and safety practice. Emergency eyewash and safety shower should be located nearby.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid	
Appearance:	Granules	
Colour:	Off-white	
Odour:	None	
Bulk Density (Loose):	0.7 t/m ³ (may vary from 0.65 – 0.75 kg/m ³)	
Particle Density:	2.0 t/m ³ (may vary from 1.9 – 2.2 t/m ³)	
Particle Size Distribution (for typical GrowSil & RemSil Products):	Size Fraction	%
	5 – 2.36 mm	50
	2.36 – 1.18 mm	37
	1.18 – 0.6 mm	11
	0.6 – 0.425 mm	0.8
	0.425 – 0.212 mm	0.2
	0.212 – 0.150 mm	0.2
	0.150 – 0.075 mm	0.6
	<0.75 mm	0.2
Specific Surface Area (BET):	30 – 40 m ² /g (for typical GrowSil and RemSil Product)	
Melting Point:	>1,500°C (approximate)	
Boiling Point:	Not Applicable	
Vapour Pressure:	Not Applicable	
Vapour Density:	Not Applicable	
Oil Adsorption Value:	70 – 75 g/100g	
pH:	8.5 (1:5 water extract)	
	8.1 (1:5 CaCl ₂ extract)	
	8.6 (1:5 KCl extract)	
Salinity (1:5 water extract):	340 mS/m (1:5 water extract)	
Solubility in Water:	Insoluble	
Solubility in Acid:	Insoluble	
Solubility in Alkali:	Moderate to highly soluble	
Cation Exchange Capacity (CEC):	30-40 meq/100g	
Explosive Properties:	Non-Explosive	
Flash Point:	Non-Combustible	

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Flammability: Non-Flammable

10. STABILITY AND REACTIVITY

Reactivity: Not reactive. Substance is an inert inorganic solid.

Stability: Stable under normal conditions of use.

Possibility of Hazardous Reactions: None under normal conditions of use.

Conditions to Avoid: None known.

Incompatible Materials: None known.

Hazardous Decomposition Products: None known.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity: Not Classified.

Oral LD50: For Silicon, amorphous (112945-52-5LD50).
LD50/oral/rat = > 5000 mg/kg. No deaths occurred and no signs of toxicity were seen during the observation periods after single oral administration of silica(OECD 401).

Inhalation LC50: For Silicon, amorphous (112945-52-5LD50)
Due to the product's physical characteristics, no suitable testing procedure is available.

Dermal LD50: For Silicon, amorphous (112945-52-5LD50).
LD50/dermal/rabbit = > 2000 mg/kg. Very slight transient erythema in one animal. No signs of systemic or organ toxicity (OECD 402).

Skin Corrosion / Irritation: Primary irritation index = 0/8 @ 24 hr. Not classified as an irritant (OECD 404).

Serious Eye Damage / Eye Irritation: Draize score 1.0/110 @ 24 hr. Not classified as an irritant in rabbit studies (OECD 405). High dust concentrations may cause mechanical irritation.

Acute Health Effects: None known. Possible respiratory and or eye irritation if dust levels are allowed to exceed exposure limits.

Chronic Health Effects: None known.

Possible Pathways for Exposure: Ingestion – Ingested material may cause discomfort, but no long-term effects expected. Larger granules may represent a choking hazard.

Eye – May cause mechanical irritation in contact with eyes.

Skin - May cause drying of skin resulting in itching and or redness.

Inhalation - May cause irritation to the mucous membranes of the nose, throat and respiratory tract.

Reproductive Toxicity: Not classified.

Carcinogenicity: Not classified.

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Germ Cell Mutagenicity: Not classified

12. ECOLOGICAL INFORMATION

Ecotoxicity: None known.

Persistence / degradability: Not biodegradable; Structurally stable

Mobility: Only dust fraction considered mobile. Dust fraction will remain temporarily suspended in water, but will settle-out due to high particle density (compared to water).

13. DISPOSAL CONSIDERATIONS

Disposal Methods: Landfill. When product has been used as an absorbing or filter medium dispose of as per state and local regulations.

Special Precautions for Landfill or Incineration: Product is designed to absorb a large variety of possible contaminants which may or may not be suitable for landfill or incineration. Check federal, state and local legislations and regulations prior to landfilling or incinerations. In most circumstances product will not leach absorbed solutes but consideration should be given to the correct method of disposal of the absorbed material. Incineration at high temperature can modify the amorphous silica content.

14. TRANSPORT INFORMATION

UN Number: None allocated.

UN Proper Shipper Name: None allocated.

UN Class & Subsidiary Risk: None allocated.

UN Packing Group: None allocated.

Special Precautions for Users: No special precautions required for transport

Hazchem Code: None allocated.

15. REGULATORY INFORMATION

Poisons Schedule: Not Scheduled.

Listing: Silicon, amorphous (112945-52-5) Listed on the AICS (Australian Inventory of Chemical Substances)

16. OTHER INFORMATION

General Information: This natural product is mined and packaged in Western Australia by Silica Earth Resources Pty Ltd.

Disclaimer: The information set forth in this SDS is based on information that Silica Earth Resources Pty Ltd believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and Silica Earth Resources assumes no legal responsibility for use or reliance thereon.

END OF SAFETY DATA SHEET (SDS)

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