

# Safety Data Sheet

# WONDERSTONE<sup>TM</sup>

## Protective Clothing



## Classification

Unclassified

**In case of  
Emergency**

**+27 11 770 6892**

**Wonderstonesales@assore.com**

**Operating Hours**

**: 07:00 – 16:00**

**Monday – Thursday**

**: 07:00 – 13:00**

**Friday**

Conforms to SANS 10234(2008) and Regulation No. R930 under the Occupational Health and Safety Act (June, 2003)

## Aluminium Silicate

### 1. Product and Company Identification

**Product Name** : Aluminium Silicate  
**Chemical Product Name** :  $Al_2Si_4O_{10}(OH)_2$   
**Other Names** : Pyrophyllite; Wonderstone  
**Material Uses** : Ceramics, chemical, refractory and electrical components  
**CAS#** : Refer to **Section 2**  
**UN Number** : Not regulated  
**Hazchem Code** : Not applicable

#### Supplied by:

Wonderstone Limited  
 17 Grader Road  
 Spartan  
 Kempton Park, 1619  
 South Africa

### 2. Composition and Information on Ingredients

Ingredients*	CAS Number	Grey Wonderstone %	Black Wonderstone %	Theoretical pyrophyllite
$Al_2O_3$	1344-28-1	29.2	32.5	28.30
$SiO_2^{**}$	7631-86-9	59.0	58.2	66.70
$Fe_2O_3$	-	2.97	0.79	-
MnO	-	<0.1	<0.1	-
MgO	-	<0.5	<0.5	-
CaO	-	<0.1	<0.1	-
$TiO_2$	-	1.43	1.84	-
$K_2O$	-	1.17	0.89	-
$Na_2O$	-	0.26	0.22	-
$P_2O_5$	-	0.14	0.2	-
C	-	0.06	0.8	-
S	-	<0.01	0.01	-
$CO_2$	-	<0.1	0.1	-
$Li_2O$ in ppm	-	17	150	Nil

\*Several other trace elements exist, but none considered hazardous to human health or the environment.

\*\* Independent studies indicate variable amounts of rutile, diaspora, mica and kaolinite (Anglo Vaal Mineralogical Laboratory 2001)

\*\* Analysis performed in 2011 confirms that Pyrophyllite mined by Wonderstone has a free silica content of 0.908% (Dr Ansie Bruwer, Pr No. 1522574)

### 3. Hazards Identification

<b>Hazard Classification</b>	:	Not classified as hazardous for supply
<b>Human Effects</b>	:	Dust generation may cause eye, skin and respiratory tract irritation. Refer to <b>Section 8</b> .
<b>Environmental Effects</b>	:	Inadequate data available
<b>Biological Hazard</b>	:	Inadequate data available
<b>Flammability</b>	:	No specific fire or explosion hazards
<b>Carcinogenicity</b>	:	Inadequate data available
<b>Mutagenicity</b>	:	Inadequate data available
<b>Teratogenicity</b>	:	Inadequate data available

### 4. First Aid Measures

<b>Eye Contact</b>	:	Flush eyes thoroughly with water, remove contact lenses and avoid rubbing eyes. Seek medical attention if discomfort persists.
<b>Skin Contact</b>	:	Wash with mild soap and water.
<b>Inhalation</b>	:	Move exposed person to fresh air. If not breathing or if breathing is irregular or if respiratory arrest occurs, provide oxygen by trained personnel. Refer to <b>Section 8</b> .
<b>Ingestion</b>	:	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink.
<b>Protection of First-aiders</b>	:	No action should be taken involving any personal risk or without suitable training.
<b>Notes to Physician</b>	:	No specific treatment. Treat symptomatically. Never give anything by mouth to an unconscious person. : As a general rule, and in all cases of doubt or when symptoms persist, always seek medical attention. Never give anything by mouth to an unconscious person.

### 5. Fire Fighting Measures

<b>Flammability</b>	:	No specific fire or explosion hazards.
<b>Extinguishing Media</b>	:	Use an extinguishing media appropriate for fine particles that may arise from the material.
<b>Special Exposure Hazards</b>	:	Inadequate data available
<b>Hazardous thermal decomposition products</b>	:	Inadequate data available
<b>Protective clothing</b>	:	Appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode should be worn.

### 6. Accidental Release Measures

<b>Personal Precautions</b>	:	Operators should use personal protective equipment (PPE). No action shall be taken involving any personal risk or without suitable training. <b>Refer to Section 8</b> .
<b>Environmental Precautions</b>	:	Avoid excessive dust generation. Ensure contaminated run offs are dealt with appropriately, according to approved environmental management plans. Apply limited water to suppress potential dust before collection.
<b>Clean-up Methods</b>	:	If dust is formed, use water spray to settle the dust and sweep or shovel product into designated areas or containers. : Any solid waste that cannot be re-used should be disposed of according to local laws and regulations. See <b>Section 13</b> for further guidance.

## 7. Handling and Storage

- Safe Handling** : Maintain a clean work place to prevent dust accumulation. Wash face, hands and fore-arms thoroughly after handling.
- Safe Storage** : In powder form, store in 1 ton bulk bags sealed, to avoid dust generation, sources of ignition and oxidising agents. Product and environmental contamination should be avoided. In solid form, stack as required.
- Packaging and Transport** : Approved bulk handling techniques should be used when packaging and transporting the materials.

## 8. Exposure Control/Personal Protection

- Exposure Controls** : The material is not classified according to SANS 10228 as a class danger group.  
The Occupational Exposure Limits (OEL's) are represented in the table below.

- Biological Limits** : No biological limit determined.

Ingredient Name	Time-Weighted Average Occupational Exposure Limits*
Aluminium oxide (Al <sub>2</sub> O <sub>3</sub> )	TWA OEL-RL mg/m <sup>3</sup> : 10.5 mg/m <sup>3</sup>
Silica dioxide (SiO <sub>2</sub> )	TWA OEL-RL mg/m <sup>3</sup> : 6.3 mg/m <sup>3</sup>

\*Occupational Health and Safety Act (1993) Hazardous Chemical Substances Regulations (Occupational Exposure Limits – Recommend Limits)

- Control Measures** : To reduce dust generation, ventilation should be in place.  
: The material contains 0.9% silica, however should silica measurements exceed 10% of the OEL; the appropriate monitoring and reporting should be undertaken. It is recommended that any person working in close contact with the material should undergo regular medical examinations with a focus on visual and respiratory functions.

- Personal Protective Equipment (PPE)** : **Eyes:** Safety eyewear to avoid exposure to dust particles.  
: **Hands:** No specific recommendation.  
: **Respiratory Protection:** Masks and respirators with appropriate particle filter should be worn.

- General Precautions** : Clean protective equipment should be used daily. Workers should be provided with shower facilities and should wash their hands before eating or drinking.

- Environmental Exposure Control** : Liquid waste that is considered to be contaminated should be treated at a waste water treatment plant.  
Solid waste that cannot be recovered and reused should be disposed of according to **Section 13**.

## 9. Physical and Chemical Properties

- Appearance** : Grey pyrophyllite is pale grey in colour with homogenous appearance whilst black pyrophyllite is dark grey to black rock with patches of light colours.
- Size** : Grey pyrophyllite consists of fine grains. Black pyrophyllite consists of coarse grain sizes.
- Odour** : None
- pH** : 7.5 (Estimated value)
- Density** : 2.68 – 2.72 g./c.c.
- Boiling Point** : Decomposes on melting at 1 630°C
- Flash Point** : Not applicable for this material as an inorganic substance
- Melting Point** : Approximately 1630°C
- Solubility in Water** : Insoluble
- Flammability** : No specific fire or explosion hazards
- Exposure Properties** : Not known
- Oxidising Properties** : Not known
- Vapour Pressure** : Not applicable

Viscosity	:	Not applicable
Organic Solvents	:	Insoluble
Freezing Point	:	Not applicable
Explosive properties	:	Not applicable

## 10. Stability and Reactivity

Reactivity	:	Not reactive*.
Chemical Stability	:	Stable under normal conditions.
Possibility of Hazardous reactions	:	None known.
Conditions to Avoid	:	Avoid generating excessive fine particles.
Incompatible material	:	None known.
Hazardous decomposition products	:	None known.

\* Under normal ambient and storage and handling conditions.

## 11. Toxicological Information

Bio-Availability	:	Limited bio-availability expected in solid form.
Inhalation	:	Pyrophyllite dust may cause irritation of eyes and respiratory tract typical of a nuisance dust. Refer to <b>Section 8</b> .
Ingestion	:	Not toxic. If ingested, apply <b>Section 4</b> measures.
Dermal	:	Absorption through the skin is negligible.
Sensitisation	:	No evidence of respiratory or skin sensitisation.
Acute Effects	:	The product is not classified as acute toxic.
Chronic Health Effects	:	The product does not contribute to chronic health effects.
Carcinogenicity, Mutagenicity and toxic to Reproduction (CMR) effects	:	The product is not classified as carcinogenic, mutagenic or toxic to reproduction.

## 12. Ecological Information

Eco Toxicity	:	Pyrophyllite is not known to have adverse effects to the environment.
Mobility	:	Not enough information is available to determine mobility in soil.
Persistence and Degradability	:	Not applicable to inorganic substances.
Bio-accumulation Potential	:	No information available.

## 13. Disposal Considerations

Waste Disposal	:	Re-use of pyrophyllite is recommended. In cases where re-use is not possible, the material can be disposed of on a general landfill site according to national and local legal requirements as the material is not considered hazardous.
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## 14. Transport Information

Transport guidelines	:	Not regulated
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The handling and transportation of this material must be in compliance applicable legislation.

## 15. Regulatory Information

- Chemical Safety Assessment** : A chemical safety assessment is not required as the substance is unclassified.
- Handling, Storage and Disposal** : National Environmental Management Waste Act, 2008.  
: Department of Water Affairs and Forestry, Minimum Requirements for Waste Disposal by Landfill, Second Edition, 1998.
- Transport** : SANS 10228, 2003: The Identification and Classification of Dangerous Goods for Transport. South African Occupational Health and Safety, 1993 (Act 85 of 1993) as amended.
- Occupational** : Occupational Health and Safety Act (1993). Hazardous Chemical Substances Regulations, 1995. Occupational Exposure Limits – Recommend Limits (South Africa, 1995).  
: Mine Health and Safety Act, 1996 (Act 29 of 1996) as amended.
- MSDS Content** : Occupational Health and Safety Act (1993), General Amendment Regulation 930, June 2003.  
: Occupational Health and Safety Act (1993), Hazardous Chemical Substances Regulation 1179, August 1995.  
: SANS 10234, 2007: Global Harmonized System of classification and labelling of chemicals (GHS). Standards South Africa, Edition 1.  
Bruwer A, 2011: Occupational Tuberculosis as Occupational Disease. Occupational Health Consulting.
- Risk Phrases** : R20/22 Harmful by inhalation and if swallowed.
- Safety Phrases** : S20 When using material, do not eat or drink.  
: S22 Do not breathe dust.  
: S25 Avoid contact with eyes.  
: S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
: S29 Do not empty into drains.  
: S36 Wear suitable protective clothing.



## 16. Other Information

MSDS Update	
Reason for update:	To conform to SANS 10234:2007 and the Occupational Health and Safety Act (GNR930)
Date of Issue:	30 November 2012
Version:	2.0
Next Review	10 September 2015

## **Notice to reader**

**“All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. The safety of the material has only been examined for the uses described in this document”**

**Wonderstone Ltd.** urges each customer or recipient of this MSDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this MSDS and any hazard(s) associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all state, provincial or local laws. In the event of the material being re-routed to a jurisdiction other than that indicated on this MSDS, regard must be given to the legal requirements prevailing in such other jurisdiction.

The information presented herein pertains only to the product as supplied. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific MSDSs, we are not and cannot be responsible for MSDSs obtained from any source other than ourselves. If you have obtained an MSDS from another source or if you are not sure that the MSDS you have is current, please contact us for the most current version.

## **Abbreviations and Acronyms**

<b>CAS</b>	:	Chemical Abstracts Services
<b>CMR</b>	:	Carcinogenicity, Mutagenicity and toxic to Reproduction effects
<b>OEL</b>	:	Occupational Exposure Limits
<b>PPE</b>	:	Personal Protective Equipment
<b>SANS</b>	:	South African National Standards
<b>SCBA</b>	:	Self-Contained Breathing Apparatus
<b>TWA</b>	:	Time-weighted Average
<b>UN</b>	:	United Nations

**END OF MSDS**