VICORE VERMICULITE

COMPANY DETAILS

Name	:	MANDOVAL VERMICULITE (PTY) LTD
Postal Address	:	P.O. Box 124114 ALRODE 1451
Physical Address	:	8 Johnson Street ALRODE
Telephone No.	:	011-864-5205/06
Fax No.	:	011-908-3049
Emergency No.	:	08 6000 3333

1. Product Identification

Trade Name	:	Vicore
Chemical Name	:	Vermiculite
CAS Number	:	1318-00-9

2. Composition

Vermiculite is a hydrated laminar magnesium-aluminum – iron silicate, which resembles Mica in appearance.

Ingredient Name	%	CAS Number
Vermiculite $(Mg,Fe,Al)_3(Al,Si)_4O_{10}(OH)_2 \cdot 4H_2O$	>85%	1318-00-9
Apatite $Ca_5(F,Cl)(PO_4)_3$	<5%	N/A
Diopside $Ca(Mg,Fe)Si_2O_6$	<5%	14483-19-3
Mica Phlogopite $K2(Mg,Fe)_6(Si_6Al_2)O_{20}(OH,F)_4$	<5%	12001-26-2
Alpha Quartz SiO2	<0.05%	14808-60-7

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3. Hazardous Identification of Product.

Main hazard	:	Vermiculite is a non-flammable, non-combustible mineral. The primary occupational hazard is airborne dust generated during handling, which may cause eye and respiratory tract irritation if inhaled or if it enters the eyes.
Flammability	:	Nonflammable, non-combustible.
Chemical hazards	:	None
Biological hazards	:	None
Reproductive hazards	:	None
Eye effects	:	Possible irritation from dust particles
Health effects – skin absorption	:	None
Health effects – ingestion	:	None
Health effects – inhalation	:	Excessive inhalation over long period may cause harmful irritation
Carcinogenicity	:	Non-carcinogenic
Mutagenicity	:	n/a
Neurotoxicity	:	n/a

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4. First Aid Measures

Product in eye	:	Wash out with clear water. In severe cases where particles are not removed by washing out, refer to a doctor.
Product on skin	:	Not harmful
Product ingested	:	Not harmful
Product inhales	:	In cases where excessive amounts have been inhaled, remove the affected individual from the dusty are and allow to breath clean air. Drinking of water will assist in clearing remaining dust particles from the mouth and throat. (The wearing of a paper dust mask in dusty area is recommended to prevent discomfort.

5. Fire Fighting Measures

Vermiculite is a fully oxidised, non-flammable mineral. It is non-combustible and nonflammable and does not present any fire hazards.

6. Accidental Release Measures

Personal Precautions	:	Wear eye protection and paper dust masks in Windy conditions
Environmental Precautions		: Vermiculite is inert and does not present any hazard to the environment.
Spill Procedure	:	Dampen with water and sweep up.

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7. Handling and Storage

Loading/Uploading precautions		: Avoid damage to packaging and follow good housekeeping procedures. No other special precautions required.
Handling and storage precautions	:	As above

8. Exposure Controls / Personal Protection

Occupational Exposure Limits	:	TWA 10mg/m³ (total dust) TWA 3mg / m³ (respirable dust.)
Engineering control measures	:	Dust extraction equipment can be used to prevent excessively dusty conditions and maintain dust level below exposure limits.
Personal protection – respiratory		: Type FF1 paper dust mask, SABS approved or equivalent.
Personal protection – hand	:	Not required
Personal protection – eye	:	SABS approved eye protection
Personal protection – skin	:	Not required
Other protection	:	None

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9. Physical and Chemical Properties

Appearance	:	Brown flakes
Odour	:	None
Boiling point	:	n/a
Melting point	:	>1350°C
Flash point	:	Vermiculite is a fully oxidised non-flammable material.
Flammability	:	Non-combustible and non-flammable.
Explosive Properties	:	n/a
Oxidising Properties	:	n/a
Vapour pressure	:	n/a
Specific Gravity	:	2.5
Specific Heat	:	0.27 – - 0.41kcal/kgK
Thermal Conductivity	:	0.062 - 0.065 W/m°C
pH	:	8.0 – 9.5
Solubility – water	:	Less than 1%
Water absorption	:	20 – 50% (by volume)
Moisture Loss @ 110°C	:	4 – 10%

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Typical Chemical Analysis:

	Mass%
Silicon Oxide	35 – 41
Magnesium Oxide	21.5 – 25.5
Aluminum Oxide	6.5 – 10.0
Iron Oxide	6.0 – 9.5
Potassium Oxide	3 – 6
Calcium Oxide	2 – 6
Carbon Dioxide	0.6 – 2.5
Titanium Oxide	0.6 – 1.4
Phosphorus Pentoxide	0.2 – 2.0
Chromic Oxide	0.01 – 01
Fluoride	0.2 – 0.8
Chlorine	0.0 – 0.5

10. Stability and Reactivity

Conditions to avoid	:	Vermiculite is a stable, inert material.
Incompatible materials	:	None. Hazardous
decomposition	:	None.

11. Toxicological Information

Vermiculite is a non-toxic.

12. Ecological Information

Vermiculite is a naturally occurring mineral, which is not harmful to fauna and flora. Vermiculite is not biodegradable, but as a stable, inert, non-toxic product, does not pose any threat to the environment.

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13. Disposal Considerations

Disposal Methods : Dispose in accordance with local authority's Requirements and regulations. No specific treatment required.

Disposal of Packaging : The standard polypropylene packaging used for Vicore Vermiculite products can either be disposed of as above or recycled.

14. Transport Information

Vicore Vermiculite is transported locally by road or rail and due to its non -hazardous classification does not require any special transport precautions.

15. Regulatory Information

Occupational Health and Safety Act No. 85 of 1993
Hazardous Chemical Substances Guideline No. 36 – Dust
Personal exposure to be kept within the limits detailed in Section 8 above.

16. Other Information

Bibliography: Material Safety Data Sheet: Palabora Mining Company (14-10-1999)
Vermiculite Properties: The Vermiculite Association

Revision history:

Previous issue	May 2020
Revision 6	March 2021
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Key Abbreviations:
SABS = South African Bureau of Standards
ACGIH = American Conference of Governmental Industrial Hygienists
TWA = Time Weighted Average

EXCLUSION OF LIABILITY

The information contained in this document is based on current knowledge and experience at the date of publication. The purpose of this data sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty regarding the product properties.

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