dupré

EXFOLIATED VERMICULITE

VERMICULITE is the name given to a group of hydrated laminar minerals which are aluminium-iron-magnesium silicates, resembling mica in appearance.

CRUDE VERMICULITE consists of thin, flat flakes containing microscopic layers of water.

EXFOLIATION On being subjected suddenly to high temperatures (700°C to 1000°C) vermiculite flakes will expand to many times their original size due to the microscopic layers of water turning to steam and forcing the laminar layers apart.

EXFOLIATED VERMICULITE consists of accordion-like granules containing microscopic air layers, to which vermiculite owes its light weight and excellent insulation properties.

TYPICAL PROPERTIES

Grade	Nominal Particle Size / mm	Loose Bulk Density / kg m^{-3}
Large Grade (Micafil)	2 – 15	85
Medium Grade	1 – 8	100
Fine Grade	0.5 – 3.0	100
Superfine Grade	0.25 – 1.7	105
Micron Grade	0.1 – 1.0	120

Typical Physical Properties	
Sintering Temperature	1260 °C
Melting Point	~1330 °C
Specific Gravity (Crude)	~2.75
Thermal Conductivity	0.063 W m^{-1} K^{-1}
Specific Heat	1.08 1kJ kg^{-1} K^{-1}
Moh's Hardness (Crude)	1 – 2
Cation Exchange Capacity	60 meq per 100g

Typical Chemical Properties[1]	
% SiO_2	39.6
% MgO	23.5
% Al_2O_3	9.2
% K_2O	6.1
% Fe_2O_3	7.9
% CaO	2.1
% TiO_2	1.0
% F	0.6

[1] based on primary vermiculite source

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Information presented above is given in good faith as accurate and reliable but is not to be taken as a guarantee. The figures provided are intended to be a guide to expected average values and should not be interpreted as a specification. Any potential applications referred to are not to be construed as recommendations. It is the responsibility of the user to determine suitability for any specific purpose.

www.dupreminerals.com

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Dupré Minerals Limited, Spencroft Road, Newcastle-under-Lyme, Staffordshire, ST5 9JE
Telephone +44 1782 383000 Fax +44 1782 383101 Email info@dupreminerals.com

VERMICULITE (also known as Micafil) is exfoliated at Dupré Minerals and is supplied to the demanding specifications required in today's marketplace. Numerous industries are supplied with Vermiculite for a multitude of different applications, Dupré Minerals recognises this and specialises in unique development projects with customers. We are also responsive to the grading and different packaging requirements of all these industries.

PACKAGING

Vermiculite is widely used as a packaging medium. Not only is it lightweight, clean and easily poured around irregular shaped objects, it also acts as a baffle against shocks caused by impact and improper handling. Being highly absorbent, it safely retains leaks from packed materials such as hazardous liquids. As an inorganic mineral, it does not present any fire hazard

INSULATION

Exfoliated Vermiculite is well established as an excellent thermal insulating material capable of withstanding temperatures in excess of 1000°C. The free-flowing properties of loose-fill Vermiculite make installation very simple in applications such as loft insulation. The insulating properties of Vermiculite significantly reduce the loss of heat in cold weather and keep the interior cool in hot weather. Vermiculite is clean to handle, nonabrasive, sound absorbent, resistant to decay, odourless and non-irritant.

HORTICULTURE

Medium Grade Vermiculite will dramatically improve drainage when added to heavy soils. Fine Grade combined with peat forms excellent seed growing compost. When Vermiculite is used with fertilizers, it makes them more efficient, releasing more nutrients and therefore making them more economical.

FRICTION

Dupré Minerals has been one of the leading suppliers to the friction industry for many years, producing demanding minerals including Vermiculite to the highest specification. Dupré Minerals recognizes the unique demands and specifications required by the world's leading friction companies and are constantly carrying out research and development into new and innovative products.

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