Vermiculite Data

Exfoliated vermiculite particle sizes

Size mm	in		Density kg/m3	lb/ft3	Equivalent names/designations System A	System B
16	5/8	down	56 to 72	3.5 to 4.5	NA	Premium (6)
8	5/16	down	64 to 85	4 to 5	1	Large (4)
4	5/32	down	72 to 90	4.5 to 5.5	2	Medium (3)
2	0.08	down	75 to 112	4.7 to 7	3	Fine (2)
1	0.04	down	80 to 144	5 to 9	4	Superfine (1)
0.5	0.02	down	90 to 160	5.6 to 10	5	Micron (0)

Typical chemical analysis of vermiculite

Element	Percent by Weight
SiO2	38 to 46
AL2O3	10 to 16
MgO	16 to 35
CaO	1 to 5
K2O	1 to 6
Fe2O3	6 to 13
TiO2	1 to 3
H2O	8 to 16
Other	0.2 to 1.2

Thermal conductivity of exfoliated vermiculite at different bulk densities

Bulk density kg/m3	lb/ft3	Thermal conductivity, λ W/mK	Btu in/ft2h °F
56 - 64	3.5 - 4	0.058	0.40
80 - 96	5 - 6	0.064	0.44
160 - 192	10 - 12	0.071	0.49

Typical physical properties of exfoliated vermiculite

Colour	Light to dark brown
Shape	Accordion-shaped granule
Bulk density[a]	64 -160 kg/m3, 4-10 lb/ft3
Moisture loss at 110C(230F)	4 to 10%
pH (in water)	6 to 9
Combustibility	Non-combustible
MOH Hardness	1 to 2
Sintering temperature	1150 - 1250C, 2100 - 2280F
Fusion point	1200 - 1320C, 2200 - 2400F
Cation exchange capacity[b]	50 - 100 me/100g
Specific heat:	0.84 - 1.08 kJ/kgK 0.20 - 0.26 kcal/kgK 0.20 - 0.26 Btu/lb F
Waterholding capacity[a]	220 - 325% by weight 20 - 50% by volume

Notes: [a] Bulk density and water holding capacity vary with article size.
[b] Exchangeable ions are Mg+2 and Ca+2 sodium acetate saturation / ammonium acetate substitution method

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