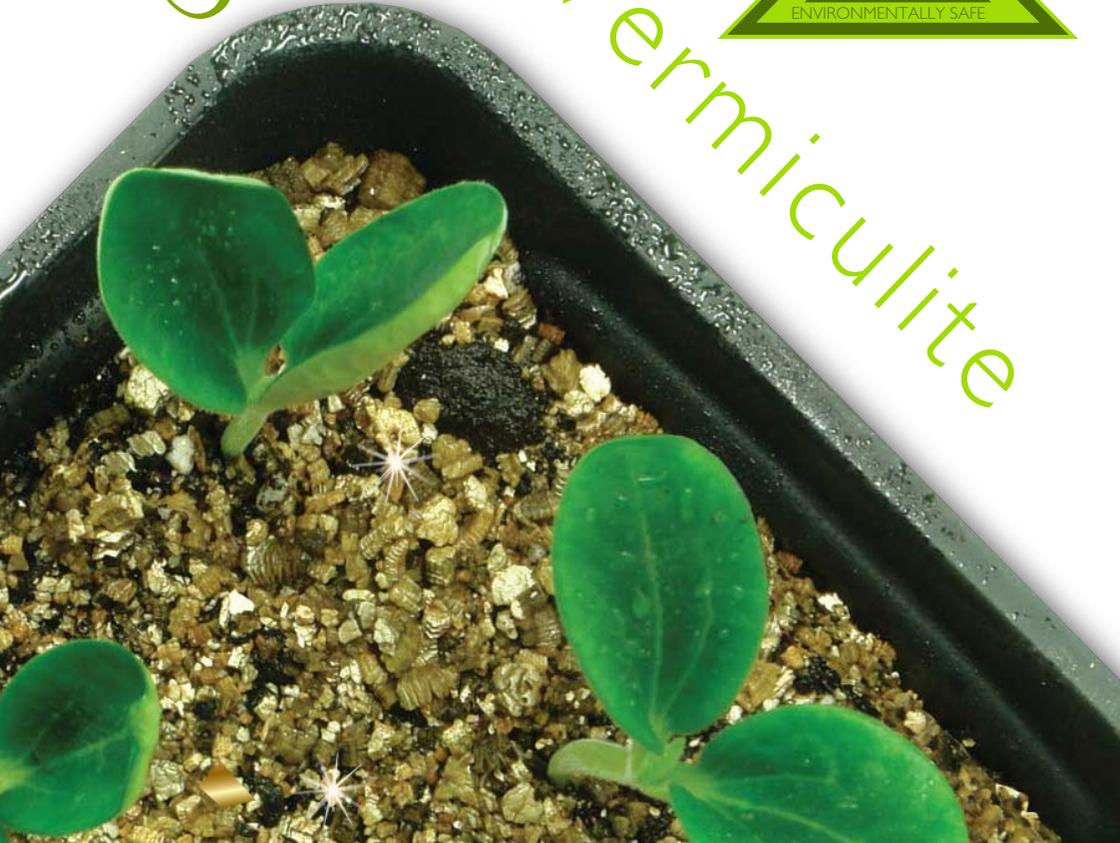




**MATHIOS
REFRACTORIES S.A.**



Vermiculite



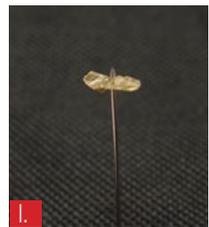
Vermiculite is the geological name given to a group of hydrated phyllosilicate minerals, which are aluminium-iron-magnesium silicates. It is further classified in the group of clays, resembling mica in appearance.

One of its characteristics is that it contains trapped water between the layers of the flakes. This interlayer water at a temperature of 700 - 900 °C evaporates abruptly resulting at the expansion of the mineral up to 30 times compared to its original volume.

The exfoliation process converts the thin flakes of the ore into lightweight porous granules containing numerous air layers. The final product obtained after cooling is composed of flakes at a size of 1-6 mm which have an accordion shape. Because of that particular form of particles, vermiculite is suitable for use in horticulture as a coating material of seeds after sowing in mixtures of substrates.

One of the most important advantages of vermiculite is the high cation exchange capacity (CEC), which helps the release of nutrients to plants. Due to this particular property, vermiculite provides the growing plants with considerable amounts of potassium (K^+), sodium (Na^+), calcium (Ca^{++}), magnesium (Mg^{++}) and ammonium (NH_4^+). The presence of potassium is essential for the plant growth, especially when used in nurseries for the seedling production.

Mathios Refractories SA exfoliates vermiculite over 50 years and disposes it in horticulture, agriculture and plant growers. Besides the agronomic applications, it is also an excellent thermal insulation material in industry, suitable for the production of a wide range of refractory products at temperatures of 1100°C. It is also used in the production of lightweight concrete, in friction lining industry, in animal feedstuffs, as a packaging aid for the safe transportation of hazardous chemicals and as a bio-remediation aid so as to clean contaminated soils.



Advantages of Vermiculite

- 1 Organic product 100 %
- 2 Environmentally safe
- 3 Clean, odorless, non -toxic, sterile, lightweight
- 4 It does not decompose and it does not rot
- 5 It stores nutrients such as potassium, calcium, magnesium, resulting in the fastest and healthiest plant growth
- 6 It improves the soil aeration and retains the moisture
- 7 It protects the plant from severe temperature changes
- 8 It can be used for more than one growing seasons
- 9 It protects the roots during transplanting
- 10 It is used in pure beds and tables rooting cuttings
- 11 It reduces the loss of nitrogen, phosphorus and potassium in the substrates due to runoff, thus it improves the drainage properties of the mixture
- 12 It can hold large amounts of water.
- 13 The plants need less watering





PRODUCT NAME	Grain Size(mm)	Fusion Point at °C	Density at kg/m ³	Thermal Conductivity (under ambient conditions)	Water Absorption Capacity (% b.v.) v	pH
SUPER FINE	0-2	1200-1320	95-120	0.063-0.069	20-50	6-9
FINE	1-3	1200-1320	85-110	0.063-0.069	20-50	6-9
MEDIUM	1-4	1200-1320	80-100	0.063-0.069	20-50	6-9
LARGE	5-8	1200-1320	70-90	0.063-0.069	20-50	6-9



**MATHIOS
REFRACTORIES S.A.**

5 Epidavrou Str.,182 33 Athens, Greece,

International Sales:

Tel.: +30 210 42 57 370,

Fax: +30 210 42 57 377

e-mail: export@mathios.gr,

www.mathios.com