



Natural, non-toxic, inert, light, heat insulating, non-combustible, obtained from effusive volcanic rock used as a cultivation substrate and as a soil conditioner and corrector. The use of raw materials, originally selected, and the thermal expansion process with methane burners, allow to obtain an inorganic, stable and chemically inert product.

Volcanic Energy is subjected to careful sieving, to obtain a product with a large particle size and light weight, with a prevalent fraction between 2 and 6 mm.

Volcanic Energy resists biological attacks and does not exhibit degradation or rotting phenomena, even after long periods of conservation.

Chemical-physical characteristics

Type	granular solid
Granulometry	1 – 6 mm
Free fall density	100 ± 20 kg/m ³
Compacted density	120 ± 25 kg/m ³
Colour	grey/black
Thermal conductivity	1,27 – 3,25 W/mK
Reaction to fire	A1 Euroclasse 837
Specific heat	J/kg°K
pH	6,5 – 7
CE	67 microS/cm

Solubility **insoluble** - in water, in organic and mineral acids, at low and high temperatures

Chemical composition of the raw material

Silica oxide	SiO ₂	47,32%
Aluminum oxide	Al ₂ O ₃	16,76%
Iron oxide	Fe ₂ O ₃	10,25%
Sodium oxide	Na ₂ O	3,99%
Potassium oxide	K ₂ O	1,49%
Calcium oxide	CaO	10,48%
Magnesium oxide	MgO	5,94%
Titanium oxide	TiO ₂	1,42%
Manganese oxide	MnO	0,15%
Phosphorus pentoxide	P ₂ O ₅	0,50%
Lead	Pb	6 mg/kg
Cadmium	Cd	< 1 mg/kg
Total chromium	Cr	72 mg/kg
Nickel	Ni	32 mg/kg
Mercury	Hg	< 1 mg/kg
Arsenic	As	3 mg/kg
Field capacity		8,1%

Packaging

Coextruded polyethylene bags white on the outside and black on the inside 150 micron thickness,

treatment with UV inhibitors resistant 24-36 months micro-perforated at the base for drainage

Sack dimensions: width 23 cm; length 75 cm; height 10 cm from 23 liters per linear meter n. 6 holes

Sack dimensions: width 25 cm; length 45 cm; height 10 cm from 27 liters per linear meter n. 4 holes

Sack dimensions: width 25 cm; length 50 cm; height 10 cm from 30 liters per linear meter n. 4 holes

Quality

Volcanic Energy is produced under quality control, therefore all the operations that regulate the production line follow specific standardized procedures and reported in the manuals drawn up in accordance with the UNI EN ISO 9001 standard. The machinery, equipment and raw materials are constantly checked during production.

This document provides information based on current tests and shows the typical characteristics of the products. However, no guarantees are given on the final results as the conditions of use are not under our control

Lava stone from Etna

Petrographic name of the stone (EN 12407): Basalt

Standard	Analysis	Unit of measure	Average value
EN 1936	Apparent density	Kg/m ³	2785
EN 1936	Open porosity	%	4,9
EN 13755	Water absorption at atmospheric pressure	%	0,8
EN 1925	Capillary water absorption coefficient	g/m ² * s ^{0,5}	9,8
EN 14157	Abrasion resistance	mm	16,5
EN 14231	Slip resistance by the pendulum tester (wet) - polished	Scala C	22
EN 14231	Slip resistance by the pendulum tester (dry) - polished	Scala C	74
EN 14231	Slip resistance by the pendulum tester (wet) - bushhammered	Scala C	72
EN 12371	Frost resistance, compressive strength Standard deviation (MPa): 6.34 Coefficient of variation: 0.03	MPa	186,1
EN 12371	Frost resistance, flexural strength Standard deviation (MPa): 1.0 Coefficient of variation: 0.08	MPa	12,4
EN 14066	Resistance to aging from thermal shock Dynamic modulus of elasticity - before Edo cycles in extension Edo down	MPa MPa	13775 16333
EN 14066	Resistance to aging from thermal shock Dynamic modulus of elasticity - after Edo cycles in extension Edo down	MPa MPa	13857 16793
EN 14205	Determination of Knoop hardness	MPa	3564
	Residual 105 °C		98,2%
	Residual 1000 °C		98,0%

FRUIT ENERGY Sh.p.k

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