



1. Chemical and physical properties:

Form (at 20 °C): Solid granulation

Density (20 °C): 2.0-2.4 g/cm³

Color: White to pale greenish

Odor: Odorless to almost odorless

Melting point >1000 °C (decomposition)

Thermal decomposition: >1000 °C

Bulk density: 400-450 kg/m³

Solubility in water (20 °C): Insoluble

Conditions to be avoided: No further information.

Substances to be avoided: Violent reaction with fluorine.

Other information: Stable under normal conditions of use

pH value (for 100 g/l of water): 7.0-8.0 (slurry)

- VitaLAND is a functional **soil conditioner** in the form of natural zeolite mineral mainly consisting of the active substance clinoptilolite

[Ca/Mg/(K/Na)₂Al₂Si₇O₁₈•xH₂O]

CAS registry number (clinoptilolite): 12173-10-3

CAS registry number (zeolite): 1318-02-1

Chemical name: calcium, magnesium, potassium, sodium aluminosilicate hydrate

Chemical family: zeolites; aluminosilicates

2. Production flowchart:



VitaLAND is a natural mineral supplement intended for soil improvement, moisture regulation, and better nutrient utilization from the soil. Our proprietary **Enhanced Dynamic Activation** (EDA) technology activates VitaLAND so that it changes its structure by acting on its primary component zeolite – natural mineral rock of sedimentary origin – with high content of the active substance clinoptilolite. As a result, EDA multiplies the ion exchange capacity and the electrical potential of VitaLAND, which leads to its higher chemical reactivity positively affecting the treated soil and the plants sprouting from it.

Once worked into the soil, VitaLAND forms a base layer that binds water and available nutrients into its structure and ensures their availability to plants continuously throughout the vegetative period. As a summary of the specific effects outlined in Section 4 of this product data sheet, VitaLAND soil conditioner improves the productivity of plant & crop cultivation, whether through increased yield or higher crop quality or by accelerating plant growth.



3. Scope and method of use:

Vita**LAND** is a 100% natural mineral supplement intended for soil improvement, moisture regulation, and better nutrient utilization from the soil produced by the innovative **Enhanced Dynamic Activation (EDA)** technology.

Incorporate Vita**LAND** via broadcast application into the soil at a rate of 200-500 kg/ha. Application period Spring or Fall. Used once every 2-3 years during the soil preparation phase. Can be mixed with most usual agrochemical products with neutral or basic pH reaction. Incompatible with acidic products.

- For planting young trees, place approx. 200 g of Vita**LAND** in the dug hole and cover with 10 cm of soil so that the roots are not in contact with the product. After planting, water the seedlings thoroughly. Use a similar procedure when planting **seedlings** (dose approx. 50 g) and when rooting **grapes** and **berries** (dose approx. 100 g).
- For growing vegetables, spread a layer of Vita**LAND** approx. 1 cm into the sowing trench, cover with soil and sow the seed. After sowing, water generously.

Additionally, Vita**LAND** is suitable for laying lawns as a drainage layer and for modifying soil properties, for hydroponic growing of plants wherein necessary nutrients are supplied by the fertilizer solution, and for growing flowers in pots.

4. Product benefits

Vita**LAND** mineral soil conditioner:

- Positively impacts the water management system in the soil throughout winter and growing season.
- Absorbs soluble substances – nutrients and trace minerals – into the interior of the crystalline matrix, which are gradually released according to the needs of the plants.
- Enables better uptake and utilization of other fertilizers by plants.
- Delivers cost-efficiency by reducing the dosing rates of other common fertilizers, which is advantageous in areas with high precipitation.
- Improves the nitrogen balance in the soil, subsequently reducing nitrogen leaching to groundwater (cleans the environment)
- Absorbs heavy metals (As, Cd, Pb) and other pollutants from the soil, fixes them in its matrix, and neutralizes them.
- Has a beneficial effect against acidification, improves the sorption capacity of soils and the soil structure itself.

And as an effect of all: Vita**LAND** has a favorable effect on the acceleration of growth and development of crops, on the overall yield and quality of the season's harvest.

5. Packaging

Vita**LAND** is supplied in 25kg paper bags packed at the rate of 40 bags per 1 pallet (120x80 cm). For overseas transport, 20 ft. shipping container fits 11 pallets while 40 ft. shipping container fits between 23 to 24 pallets of Vita**LAND**. If proper storage conditions are met, the shelf life of the product is 2 years.

The information given in this document is based on the present state of our knowledge. It characterizes the product regarding the appropriate safety precautions. It does not represent a guarantee of the properties of the product.