



Alginite SK

100% natural fertilizer

Exceptional ECO-BIO quality

Alginite SK - a miracle from Slovakia

What is Alginite SK ?

Alginite SK is a rock of volcanic origin formed by the accumulation of organic (algae) and inorganic material (clays and volcanic material) with a high content of humus, mineral nutrients and trace elements.

Alginite SK is a 100% ecological raw material on an exclusively natural basis, which does not contain any foreign chemicals or artificial additives and has a naturally low content of salts and heavy metals.

Alginite SK is a dark gray or dark green-gray laminated rock, resembling clay in appearance, in the dry state a brittle clayey shale with a slightly scaly decay.

Alginite SK has a wide range of uses.

Thanks to its unique ability to bind water and nutrients, Alginite SK has an exceptional perspective of use, especially in agriculture and forestry.

The substance improves the entry of water and nutrients into plants, increases the quality and durability of crops, restores and improves the soil structure and, as an organic fertilizer, increases fertility and helps to suppress the negative effects of the environment (drought period).

Use of Alginite SK

Use of Alginite SK in agriculture and forestry

- Retains moisture and prevents nutrients from leaching into groundwater and surface water as a humidity regulator
- Restores the soil structure and has a progressive effect on its improvement
- Increases crop quality and durability
- Use for composts
- Ecology, protection against pests, bacteria and crop infestations
- Improving the conditions of growth and condition of plants, protection in adverse climatic soil conditions by increasing immunity and reducing mortality of plants and seedlings

Other uses of Alginite SK

Wastewater treatment, sludge treatment, increasing the quality of sludge.

Heavy metal sorbent.

Silicate industry.

Healthcare and pharmacy.

Alginite SK maintains moisture and prevents leaching of nutrients into groundwater and surface water as a humidity regulator.

- Alginite SK improves and supports the entry of water into plants and at the same time appropriately blocks the outflow of water to lower horizons, which is crucial for forest cultivation during the first years, when the plant root system is unable to draw water from deeper soil horizons.
- Alginite SK is suitable for sandy soils in which it eliminates their insufficiently developed structures as a result of which they are permeable. Without the ability to retain water for a long time, the plant dies.
- It is this unfavorable property of the soil that Alginite SK significantly improves. Soil moisture increases with increasing dose of Alginite SK, where it significantly increases the amount of available water - **moisture is almost 5 times that of soil without the addition of Alginite SK.**
- A particularly valuable feature of Alginite SK is that **due to its high content of algal organic matter** and water-absorbing clay mineral (smectite) absorbs very well and retains water.
- Thanks to its high sorption properties (absorbency on average around 110% by weight), when applied to the soil, it retains nutrients (N, P, K and others) in the soil, prevents their leaching into groundwater and surface flows, regulates the optimal supply of nutrients to cultivated crops. retains water in the soil and prevents it from drying out.

- As a fertilizer, **it increases fertility, where it helps plants to bridge the drought without much damage**, so they do not suffer from a lack of moisture even during the precipitation deficit and remain green and fresh.
- The same is true for growing crops and maintaining greenery in subtropical arid areas. Thanks to its high water resistance, Alginite SK is a very grateful natural conditioner for light sandy soils, on which it is able to **increase fertility by more than 40%**.
- It can regenerate forest tree seedlings after the shock of transplanting from a forest nursery to a forest habitat.

Without application of Alginite SK :

The soil shows a large percentage of permeability, irrigation and rainwater into the subsoil, which is inaccessible to plants.

Along with this water, nutrients are washed away from the upper layers of the soil at the same time, as a result of which the viability of the plant decreases.

After application of Alginite SK:

Alginite SK retains water and nutrients in the root layer of the soil, where they are immediately available to plants and gradually released.

At the same time, Alginite SK prevents water from evaporating from the soil into the atmosphere and thus reduces the need for rainwater or irrigation water.

Alginite SK restores the soil structure, and progressively affects its improvement.

Alginite SK helps to restore the soil structure, which fundamentally affects the fertility of the soil, expanding Smektit also protects part of the organic matter from rapid oxidation and thus fulfills the second important function in the soil.

The soil treated with Alginite SK is airy even after long-term watering, as it regulates the water regime of the soil and if necessary is able to protect it from excessive moisture. It is also suitable for afforestation and desert planting.

Alginite SK increases the quality and durability of crops.

By using Alginite SK, the products (fruits and vegetables) are more resistant to pests, the flowers have a richer color and darker leaves.

Lawn watered with alginite solution is of better quality and has a longer shelf life.

It improves the quality of agricultural crops and fruit, increases the content of biogenic elements, strengthens the flesh, prolongs the storage time for fruits, improves and enhances the taste properties of fruits and vegetables.

It is also suitable for spraying and helps the absorption of calcium by plants.

Use for composts

Added to compost shortens the decomposition time of organic matter (accelerates ripening), reduces the amount of adverse bacteria (eg the content of streptococci) and increases the content of nutrients, which it gradually releases for plant needs.

Ecology, protection against pests, bacteria, crop infestation

Alginite SK is a natural raw material without industrial additives, it has no phytotoxic effects. It helps to protect the environment very effectively.

Alginite SK is a highly efficient trap and absorber of heavy metals and nitrates, a water filter and a cleaner after industrial accidents.

Alginite SK protects groundwater and surface water from contamination by nitrates and other nutrients added to soils.

Improving the conditions of growth and condition of plants, protection in adverse climatic soil conditions by increasing immunity and reducing the mortality of plants and seedlings

Alginite SK is suitable for improving the conditions of growth and condition of plants. The results of the tests show that plants in which Alginite SK was used tolerated even very unfavorable climatic and soil conditions much better.

On mineral - poor and soil - forming substrates, on cotton sands, it improves basic hydropedological processes such as accumulation, retention and permeability of soil for water, preferred flow and dynamics of soil moisture and thus increases the acceptance of seedlings several times over.

Other uses of Alginite SK

Wastewater treatment, sludge treatment, increasing the quality of sludge

Alginite SK can be used in the processing of sludge from wastewater treatment plants.

The performed experiments confirmed that Alginite SK supports the increase of the sludge sedimentation rate and water sorption, reduces the space requirements when evaporating water from sludge in sludge fields.

In addition, sewage sludge is enriched with macro and micronutrients, thus increasing its value.

Heavy metal sorbent

Alginite SK is one of the ecological raw materials that are able to bind heavy metals in soil and wastewater and thus contributes to the creation of a favorable condition and a sustainable environment.

Alginite SK is a good sorbent for heavy metals, especially lead.

At a concentration of about 5 mg / l, the efficiency of sorption of heavy metals is from 98.5 - 99.5%, which is higher than the efficiency of common foreign preparations, on the other hand, its unique feature is that it binds these heavy metals and does not let them into the soil. and the plants that are in his presence.

They are protected from these heavy metals even after they have absorbed the heavy metals.

Silicate industry

Possibilities of using Alginite SK :

- in the production of heat and sound fibers - results in energy savings for the production of quality cement
- for the production of sintered ceramics - the coefficient of expansion is small and the resistance to chemicals is high
- for lightweight ceramic from Alginite and foaming additives for use up to 1000 ° C
- foam glass - alginate, sand, chromium oxide, sodium sulfate and foaming agent
- binder for abrasive material - good mechanical properties without stress.

Healthcare and pharmacy

Alginite SK has been tested and used in the following areas:

- as a filler of medicinal ointments (Pityol, Saloxyl, Ichtamolu)
- medicinal ointments in the diagnosis of ulcus cruris (shin ulcers)
- as a wrap material in the treatment of rheumatic joint diseases

Properties of Alginite SK

Alginite SK - the pearl of the earth

Alginite SK is a material of natural character with optimal Ph, with a rich representation of organic matter, a balanced content of biogenic and trace elements and exceptional sorption capacity.

Alginite SK does not contain heavy metals or salts, which predestines it for use in fully organic agriculture without the risks associated with traditional fertilizers and substances.

Alginite SK is a rock with a high content of organic carbon (TOC content is 10.9% by weight), which was formed by the accumulation of dead algae. Alginite contains a lot of humus, a lot of mineral nutrients and various trace elements.

A very important nutrient for plants, **phosphorus**, reaches a value of around 120 ppm.

The available **potassium** content is higher, about twice that of phosphorus. **Magnesium** reserves are very good, which predestine SK alginite for use in sandy areas.

Also important is the good content of all plant-accessible micronutrients, i.e. **iron, manganese, boron, copper, zinc, molybdenum and boron, which perform a function similar to vitamin C in animal organisms in plants.**

The elements Fe, Mn and Zn are best represented in **Alginite SK**, the least, sometimes only in trace concentrations of Mo.

The application of Alginite SK in agriculture does not pose a risk of soil contamination with heavy metals or acidification of soils.

Similarly, the salt content is low, not exceeding 0.1% so there is no risk of salinization of the soils.

Clays are the main and important component of Alginite SK.

The proportion of clay fraction varies from 0 to 60%. up to 60%.

Of the clay minerals, Illit and kaolinite predominate, the accompanying mineral is Smectite.

Of the chemical characteristics, a neutral to slightly basic chemical reaction is interesting.

Alginite SK enriches the soil with nutrients and creates a system for plants of regular and long-term supply of these nutrients.

Other properties of Alginite SK

Mineralogical composition of Alginite SK

Thermal analysis confirms that the dominant in Alginite SK is Smectite containing molecular waters of 6.25% (water content in smectites is 10-12%).

From the above, the representation of Smectite in Alginite SK can be estimated at 60%.

Physical-mechanical properties of Alginite SK

The specific weight of Alginite SK $1,568 \text{ g.cm}^{-3}$ is lower than that of cultivated soil.

The porosity with a value of 40.8% complements the above parameters and the high absorbency of 82.0% testifies to the high sorption capacity, which originates in the polymineral composition of Alginite containing clay minerals and organic matter.

Atterberg consistency constants together with the content of grain fractions suggest an improvement that SK alginate could cause when mixed with soil.

The colloidal fraction of the fractions is supplemented mainly by the specific surface area of $350.9 \text{ m}^2.\text{g}^{-1}$, which has a unique and highly significant application for the sorption capacity.

The identified parameters do not in any case pose a risk of deterioration of soil properties during its application for tillage and plant treatment.

Chemical properties of Alginite SK

The mineralogical composition of Alginite SK limits its chemical properties.

The quantitative representation of the silicate components of Alginite SK is supplemented by a high percentage loss on ignition, which is actually an indication of a high proportion of organic matter.

This indicator classifies alginite as a fossil product.

Pedological - agrochemical properties of Alginite SK

The basic pH values allow Alginite SK to be classified as a neutral substance with a relatively high percentage of humus.

From the biogenic elements it is possible to positively evaluate the presence of N, P, K, Ca, SO₄ with a significant proportion of Mg.

There is also a broad spectral representation of trace elements, which complete the complex picture of the agrochemical value of Alginite SK.

Of the risk elements (As, Cd, Pb, Ag, Cr, Se, Hg), in no case were the values of mobile (available) forms of limit contents according to European Union standards exceeded.

A complementary but highly important evaluation of Alginite SK from an agrochemical point of view is its high sorption capacity, characterized by the value of the specific surface area, which reaches 350.9 m².g⁻¹.

Its negative charge is significant for the real use of Alginite SK.

Our offer :

Life Innovation s.r.o is the exclusive representative for mining, distribution and sale of top quality Alginite SK.

The Alginite SK deposit is located in the village of Pinciná, which is less than 10 kilometers from Lučenec and 255 kilometers from Bratislava.

It is the only source of Alginite in Slovakia and at the same time **one of the best sources of Alginite** in the world.

The dimensions of the Alginite SK deposit are approximately 760 x 930 m, while the expected amount of mineral in the deposit is up to 9,780,000 m³ with a extraction capacity of up to 150,000 tons per year.

At the same time, the deposit enables surface mining of Alginite SK, which significantly reduces the final price of the raw material for our customers.

If you are interested in further information about alginate SK and its use, do not hesitate to contact us:

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