



## TECHNICAL DATA SHEET

# Biyorem BioSorb Oil Absorbent and Bioremediation Product

### PRODUCT DESCRIPTION

Biyorem BioSorb is a 100% natural, environmentally friendly bacterial product. It absorbs all types of organic pollution, primarily petroleum-based heavy hydrocarbons, and then digests and breaks them down. It has a wide pH range. It can function in high salinity environments such as seawater. After absorbing all organic pollution in the environment, it biologically reduces itself. BioSorb is a powdered product designed for cleaning up pollution using natural bioremediation methods.

### APPLICATION AREAS

BioSorb is used for direct intervention in spills. It is a highly powerful and effective oil/fuel absorbent used in hydrocarbon-contaminated soils and water. It is a bioremediation product. The product contains natural bacteria found in soil and plants. When BioSorb comes into contact with hydrocarbons and is provided with a suitable moist environment, the bacteria inside the fibers rapidly multiply. The multiplying bacteria break down the pollution into harmless components.

### PETROLEUM SPILLS IN SOIL AND BIOSORB APPLICATIONS

BioSorb is a dry absorbent containing microorganisms. It is applied to contaminated soil by blending homogeneously. As soon as the hydrocarbon is in contact with BioSorb, it is absorbed and encapsulated with fibers. BioSorb is applied to soil with basic agricultural tools. Unlike other bacterial applications, there is no need to wash, grind or any other process. BioSorb can be applied on site or externally. Compared to other conventional methods; it is much more practical, effective and eco-friendly.

### DIRECTIONS FOR THE APPLICATION OF BIOSORB IN SOIL

The application of bioremediation method with BioSorb is easy, rapid and economical. It is enough to use BioSorb, between 1/2 and 1/5 ratios of the waste amount. The first step of the application is to spread the powder product to the contaminated area. The second step is to mix the product with the waste. In this way, lower layers of the soil, which is contaminated with hydrocarbons, can contact with BioSorb and the waste is absorbed. The product encapsulates the waste after contacting the waste and prevents leakage to lower layers. This feature prevents contamination of larger areas or underground water resources by taking the contaminated area under control.

According to the condition of the contaminated area, basic agricultural tools (shovel and harrow) are sufficient for this process. As BioSorb absorbs the waste, a noticeable difference can be observed. After the mixing process, the application area should be irrigated by sprinkling according to the humidity rate of the soil. With the help of this process, the bacteria in spore forms in the product are activated and begin to break down the hydrocarbons. In order to maintain the activity of the bacteria in the dry season, the irrigation process should be repeated every 5-7 days. While the air temperature is between 4.5°C and 49°C, the bacteria continue their activity. At lower temperatures, operation stops, but starts again



with the increase of the temperature. If the temperature falls below 4.5°C, activity can be continued by laying black nylon cover on the application area.

Depending on the climate, weather conditions and the soil structure, the bioremediation process is completed within 90 to 240 days. Hydrocarbons are converted into water and carbon dioxide. The waste generated at the end of this application is harmless biomass. 30-80% reduction in hydrocarbon content is observed in the first 30 days when ambient conditions were optimum.

A general application protocol is available upon request.

## COMPOSITION / INGREDIENTS INFORMATION

It is a natural cellulose-based agricultural byproduct used for the absorption of petroleum-based oil and petroleum hydrocarbons.

**Component:** Powdered cellulosic substance.

**Concentration:** % 94-96

## PHYSICAL AND CHEMICAL FEATURES

**Appearance :** Brown, fibrous, powdered

**Odour :** None

### Physical State Change

**Boiling Point:** Not Applicable ( 0 °C, 760 mm Hg )

**Melting Point:** Not Applicable ( 0 °C , 760 mm Hg )

**Auto Ignition Temperature:** > 260 0 °C.

**(L.E.L.):** 50.000 mg/m<sup>3</sup> in air

**(U.E.L.):** Not Available

### Physical Parameters

**Density:** 0,367 gr/mL

**Vapour Pressure:** Not Applicable (25 °C (mm Hg))

**pH:** 4-8 ( in water )

**Water solubility:** Insoluble

**Volatility rate :** None

**Particule Size:** 97% >10 µm, 0.6%<1 µm

## PACKAGING

13,5 Kg Kraft Bag

## STORAGE CONDITIONS

The product must be stored in accordance with local regulations. The product should be stored in dry, cool, well-ventilated areas, away from high temperatures and potential sources of ignition. It has a shelf life of 5 years.



## HEALTH AND SECURITY

**Eye contact:** Eyes should be rinsed with water and get medical attention immediately if irritation continues.

**Skin contact:** If skin is irritated and rash has started because of long-term contact, get medical attention immediately.

**Ingestion:** Rinse your mouth thoroughly with water. Drink 1-2 glasses of water. Do not induce vomiting. Get medical attention immediately if any discomfort continues.

**Inhalation:** If any respiratory problems occur, move affected person from the dusty area and get to fresh air. Get medical attention if any discomfort continues.

**First aid measures:** Sterile eye-washer solution.

Ensure to review the necessary precautions listed on the packaging.