

## BCP35S™

## REFINERY AND CHEMICAL WASTE REMEDIATION IN SOIL

### PRODUCT DESCRIPTION

BCP35S™ is formulated for bioremediation of soil contaminated by petroleum hydrocarbons and related wastes. It contains highly specialized microorganisms that will degrade a wide range of petroleum hydrocarbons (gasoline, diesel, crude oil, and other petroleum products), thus reducing their environmental impact. The product is suitable for many different soils and varying levels of contamination.

BCP35S™ Premium is an enhanced version of BCP35S™ specially formulated to target PAH (polycyclic aromatic hydrocarbons). It includes fungi and a higher percentage of special bacteria to enhance degradation.

### PACKAGING AND STORAGE

Available in bulk, water-soluble pouches (200 x 56 g, 400 x 28 g, 40 x 250 g), and custom packaging.

Store in a cool, dry location. Packaging must be kept intact, dry, and away from sunlight. Please follow the recommendations and use the product before the best before date. Contact Bionetix® with questions. Avoid inhalation and eye contact. Avoid excessive skin contact.



### FEATURES AND BENEFITS

- Reduces petroleum hydrocarbon contamination levels
- Minimizes environmental impact and pollution liability
- Promotes soil health and ecosystem restoration
- Cost-effective (e.g., can lower soil disposal and/or remediation costs)

### TYPICAL APPLICATIONS

- Industrial site remediation
- Oil spill cleanup
- Gas station soil restoration
- Construction site soil rehabilitation
- Landfill site reclamation

### SPECIFICATIONS

Description	Tan free-flowing granular powder
Stability	Max. loss of 1 log/yr
pH (1% Solution)	6.0-8.5
Bacteria Count	5 billion CFU/g
Nutrient Content	Biological nutrients and stimulants

### APPLICATION INSTRUCTIONS

**Land Treatment** – There is no standard protocol for the bioremediation of contaminated soils. However, there are several guidelines that should be followed to obtain the optimum degradation rates of the organic contaminants. Bioremediation of contaminated soils may take place in a lined treatment cell so that the runoff resulting from the degradation of the wastes can be collected.

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The soil is typically treated in lifts of 20 cm to 30 cm to allow maximum oxygen transfer through the soil for the micro-organisms. This transfer is usually accomplished by tilling, which provides for the essential intimate contact needed between the bacterial cultures and the organic contaminants.

To clean up small areas: use BCP35S™ at the rate of 1 kg/20 m<sup>2</sup> of contaminated soil. Rake or till the soil. Maintain the area as if growing a lawn and repeat application as necessary. For larger projects: use 100 kg BCP35S™ plus 200 L of BIOSURF™ per 1,500 m<sup>3</sup> of soil. For deeper contaminated sites, use 100 kg/300 m<sup>3</sup> of soil. Repeated applications may be needed for heavily contaminated soil.

BCP35S™ can be applied to the soil with any appropriate fertilizer or seed spreading equipment. Dry or wet application can be used.

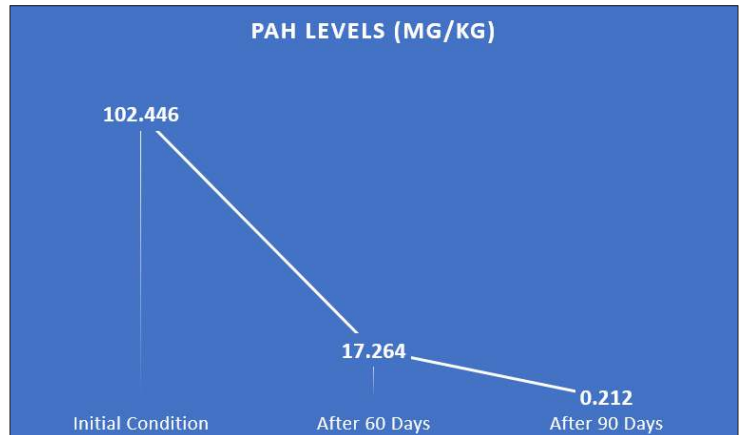
**Direct Injection** – Direct injection of the bacteria and nutrient solutions can be used for treatment. This method is site-specific and an experienced contractor should be contacted. Applications of BCP35S™ should be mixed with clean warm water for a minimum of two hours before injection. Use in accordance with all federal and state regulations. Results will depend upon soil types and climate conditions.

Soil pH, nutrient levels, oxygen availability, and moisture content are critical to the success of bioremediation. All of the requirements will vary according to the soil, weather conditions (humidity, temperature, rainfall amounts), indigenous microbial population, contaminants involved, the concentration of those contaminants, and the amount of time allowed for cleaning up the site.

For further information about application, contact your Bionetix® technical representative.

## CASE HISTORY

A company performing waste management activities on contaminated soils from oil fields, gas stations, and pipeline rights-of-way had been successfully performing bioremediation with BCP35S™ and BIOSURF™ for about six years when it noticed a higher influx of PAH than before. Desiring to improve the quality and speed of its soil bioremediation process in general while specifically targeting PAH, it eventually decided to upgrade to BCP35S™ Premium. Lab testing of soil treated with the premium version showed a significant drop in PAH after 60 days. Levels continued to drop until reaching 0.212 mg/kg at the end of 90 days. The client company was very satisfied with these results and planned to continue improving its bioremediation capabilities using Bionetix® products.



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