

BIO CLEANING SOLUTIONS

Microzyme™ Surf Clean BIO HC Powder RTU



Product Description:

A biodegradable and biologically active product used for the bio-augmentation of oil-contaminated areas. This includes landfill, water, and waste treatment applications. The products decrease total petroleum hydrocarbon (TPH), which is made up of grease and oils.

Product Variants:

This product comes in a ready-to-use

- 25 kg bags poly bag

Bacterial Consortium:

Bacteria

GPA 6.2-Bacillus: Consortium of *Bacillus*, including *Bacillus methylotropicus* and *Paenibacillus* spores,

: GPA 6.2-Bacillus methylotropicus

: GPA 7.1-Bacillus subtilis

: GPA 11.2-Bacillus subtilis

Product Specifications:

Colour: Brown

Appearance: Powder

Smell: Natural

pH (Dissolution): 6.0± 0.5

Cell concentration

8.06 x10⁸ CFU. Gram -1

Colour Orange Brown

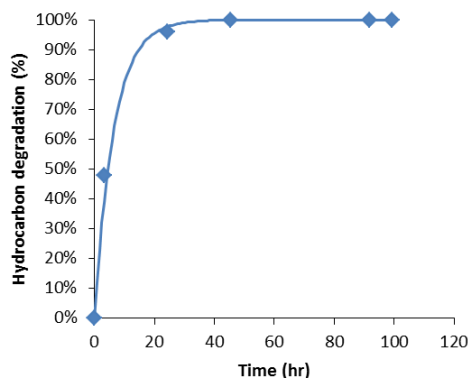
Appearance Powder

Smell Acidic Natural

pH (Dissolution) 4.7 ± 0.16.0± 0.5

Application:

Total petroleum hydrocarbons are any mixture found in crude oil or derived from there. The bacteria in the product breaks down TPH.



This figure shows the complete hydrocarbon degradation in TPH-contaminated water using FBB technology.

The powder derivatives of this product incorporate activation nutrients that aid in the growth of the bacteria under nutrient-deficient or nutrient-imbalanced conditions.

Ready-to-use product applications include:

- The biological treatment of oil-contaminated soil.
- The biological treatment of liquid effluents generated by industry.
- Oil spill treatments.

Ongoing use of the product correctly will have the following benefits: -

- Bioremediation of the oil waste
- Lowers the tendency for oil waste to leach into groundwater and cause contamination.
- Reduces unpleasant odour
- Less growth and transfer of pathogenic disease-causing organisms
- Reduced environmental pollution

Dosage:

Microzyme Surf Clean Powder RTU:

Add 1- 5 kg per cubic meter for bioremediation of solid waste. Disperse evenly across the waste to be treated. In some cases, additives such as peat, sawdust, or clay improve dispersion and moisture retention.

Monitor and repeat doses monthly or as necessary to complete the bioremediation process.

Always maintain effective dosage.

For Soil contamination:

1. Firstly, if it is a fresh spill, it is contained using absorbents. The absorbents are poured around the spill to ensure it does not spread. It also absorbs the excess oil.
2. The soil is excavated up to the deepest level of contamination.
3. The soil is treated in place (in situ) or moved into a banded containment area (ex-situ) before samples are taken.
4. All large clods of soil need to be broken up to ensure even coverage by the microbes.
5. The microbes, including activation nutrients, are mixed into the soil. 1kg of Microzyme Surf Clean Powder is used for 1m³ of soil to be treated per dose. In some cases, a double dose is used where it is suspected likely to complete the treatment in a single treatment step.
6. Some treatment experts will mix the powder onto a carrier/adsorbent (~1kg into 20L), such as coco-peat, coco-husk, clay, etc., to get even more microbes' dispersion and improve moisture retention. In this case, the microbes are first mixed into the carrier/adsorbent, then the entire contents are mixed into the soil.
7. The soil is then sprayed with water (typically 10 to 20%, depending on moisture), and only when necessary is a bio-degradable eco-friendly degreaser added to assist in the remediation process.
8. In some cases, the microbes, water, and a biodegradable degreaser may be premixed and sprayed onto the soil, passing on a conveyor to enhance emulsification and provide even dispersion.
9. Depending on the scale of the work, the treatment may need to be mechanized.
10. The treatment is typically repeated ~once monthly. Depending on the nature and load of petroleum hydrocarbon, the complete treatment process can take between 1 to 9 months. Soil samples are taken and measured for TPH to determine the level of treatment, which informs whether another dose is necessary.

Usage considerations:

- Control pH ~ 7.00
- Ensure that the treatment system is properly mixed.
- Ensure sufficient air supply
- In solids applications, maintain moisture around 30%.
- Do not use non-biodegradable detergents
- Do not use anti-bacterial or biocidal (kill the good bacteria) products, as this will prevent the treatment from working.
- Do not use any harsh chemicals such as strong acids or bases as this will kill the bacteria. All the ingredients for effective bioremediation are included in the product.







Safety:

- Non-hazardous.
- Non-carcinogenic.
- Non-genetically modified.
- Non-pathogenic




Key Features:

- Ingredients Readily Biodegradable (OECD 301)
- Biological active (contains active natural bacteria)
- Compatible and enhances water treatment and water re-use systems
- Packaging minimized, re-useable and recyclable
- Global Green Tag Certified

Designed to produce enzymes on demand: Active natural bacteria incorporated into the product produce waste-degrading enzymes:

Protease	
Lipase	
Cellulase	
α -amylase	
Urease	
Xylanase	

Starts the waste treatment process at source:

Odour control	
Solids breakdown	
Phosphate	
Nitrate	
Nitrite	
Ammonium	
COD	
Fats, Oils, and greases	

Stability:

The product is stable for two years when stored between 4 and 40oC. Due to the use of natural colorants, colour changes may occur.

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