

# Microbiate™ WS Technical Data Sheet



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## Product Overview

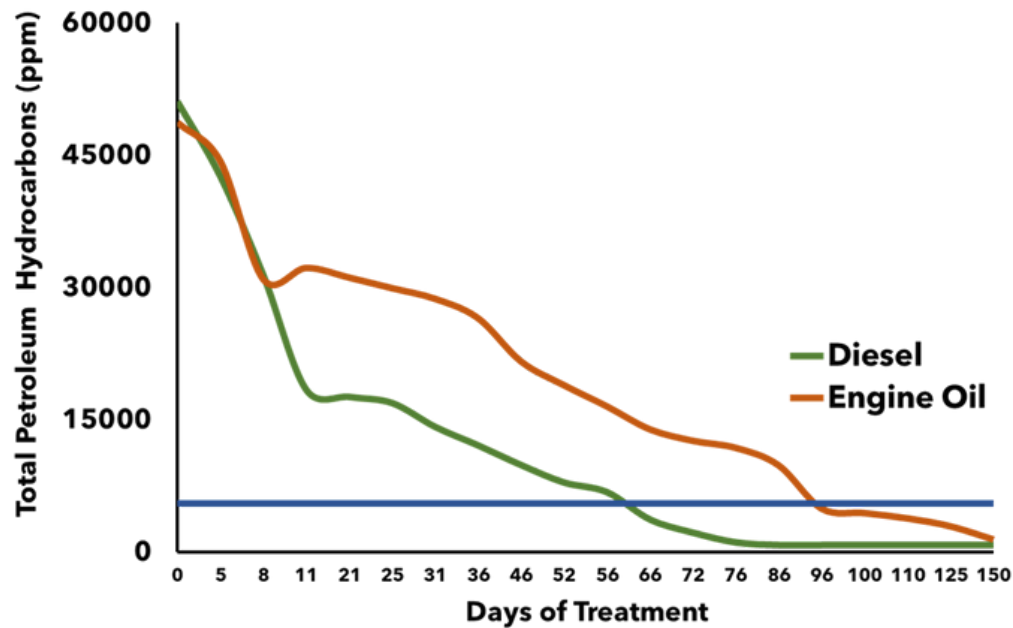
Microbiate™ WS (water soluble) is an environmentally friendly, low cost, all-natural proprietary microbial formulation that digests gasoline, fuel, oil, other hydrocarbons, and other organic contaminants in soils, wetlands, and water. The formulation is more aggressive, more consistent, and more efficient than any other product on the market. The microbes work in the widest temperature range and with the lowest moisture requirements. Importantly, this is a water-soluble product that is easy to use.

Remediate spills, rather than simply relocating them; and return your soil, wetlands, and water back to their natural state with Microbiate™ WS.

## Benefits

- Cold climate adapted; Microbiate™ WS offers the lowest operating temperature rating on the market (0°C)
- Active remediation through seasonal temperatures and continues up to the highest range on the market (49°C).
- Simply add water to this soluble, light weight formulation, and the microbes start to work.
- Proprietary manufacturing methods eliminate impurities, ensuring the microbes are highly effective and will propagate rapidly.
- Once the product is mixed with water, the formulation can be applied in multiple ways; sprayed, gravity fed into wells, or pressurized injection.
- Fully customizable packaging to suit specific remediation needs – from small projects to large projects.
- Significant cost savings over traditional ‘dig & dump’ remediation.





## Uses of Microbiate™ WS

- Hydrocarbon spills: gasoline, diesel, hydraulic, engine and many mixed oils on soil and gravel.
- Surface application of Microbiate™ WS is effective up to 1 metre in depth.
- Bore hole application of Microbiate™ WS is effective at depth (with or without oxygen).
- Injection application of Microbiate™ WS is effective at depth (with or without oxygen) and can be performed through monitoring wells via direct push or directly injected to the soil under pressure.
- Notwithstanding the mode of application, the microbes in the product will migrate up to 1 metre in area as the biofilm formation takes place.
- Can be used in biopiles, backfilling, and drilling applications.
- Can be used preventatively in areas prone to spills, subject to soil conditions.

## Application Instructions

Please consult your contact at BioNorth Solutions.



## Hazards and Restrictions

- Non-hazardous by WHMIS criteria.
- Dust may cause irritation to eyes or respiratory system.

## Handling and Storage

Use only with adequate ventilation. Do not breathe dust. Avoid contact with eyes, skin and clothing. When using do not eat or drink. Wash thoroughly after handling. Use good industrial hygiene practices in handling this material. Wear appropriate personal protective equipment when handling this product. Keep container tightly closed.

Store in a closed container in a dry place. Keep out of reach of children.

Dispose of in accordance with all applicable regulations.

## Shelf Life

Stable for 3 years from time of manufacturing. Temperatures greater than 50°C or less than -80°C may inactivate bacterial cultures.

## Available Product Sizes

Product No.	Product Weight	Spill Volume	Product Coverage
MB-WS	20 g	1-15 L	1.0 m <sup>3</sup>

Custom product packing available for all remediation projects.



# List of Contaminants

## **F1 | F2 | F3 | F4 | F4G Hydrocarbons**

- Methanol
- Butane
- Propane
- Gasoline
- Methyl Tertiary Butyl Ether
- Kerosene
- Aviation & Jet Fuels
- Diesel Fuel
- Heating Oil
- Motor Oil
- Lubricating Oil
- Lubricating Grease
- Hydraulic Oil
- Transmission Fluid
- Paraffin
- Mineral Oil & Spirits
- Petroleum Jelly
- Crude Oil

## **Polycyclic Aromatic Hydrocarbons (PAH)**

- Napathalene
- Pyrene
- Anthracene
- Fluorene

## **Solvents**

- Dimethylformamide
- Paint Thinners

## **Volatile Organic Compounds (VOCs)**

- Benzene
- Ethylbenzene
- Toluene
- Xylene

## **Organics**

- Acetone
- Anti-Freeze
- De-Icing Products
- Glycols

This list of contaminants is non-exhaustive. Please consult your contact at BioNorth Solutions to determine if this product will work for you.

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