

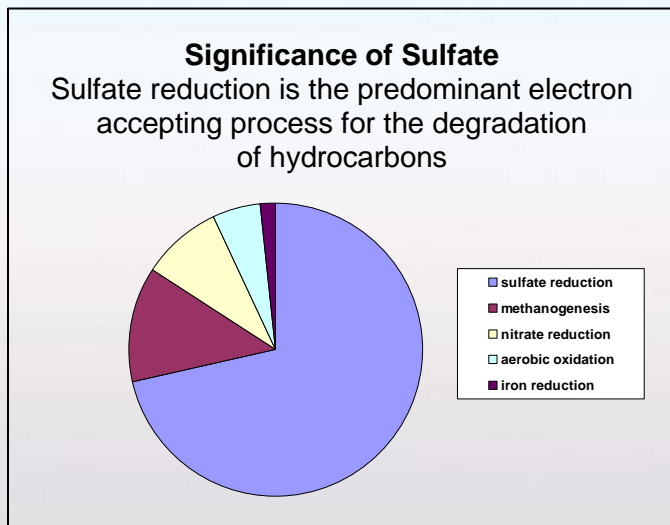
NutriBind®

Sorption and Bioremediation

NutriBind® is a powdered reagent that rapidly sorbs dissolved contaminants and accelerates their biodegradation. When mixed with water, the resulting buffered slurry contains elevated sulfate with a wide array of beneficial vitamins, minerals, and metabolites, designed to increase efficiency of electron donor (hydrocarbon contaminants) utilization.



NutriBind® has a dual function: It immediately binds and immobilizes contaminants in soil and groundwater, removing them from the groundwater. Further, the high surface area provides a matrix favorable for microbial colonization and growth through sulfate enhanced bioremediation.



Sulfate reduction and methanogenesis are the dominant natural degradation processes at most petroleum hydrocarbon impacted sites. Therefore, adding oxygen to the anaerobic portion of the plume may not be the most efficient solution.

NutriBind® stimulates biodegradation by providing a soluble, readily available electron acceptor. In the presence of - sulfate, anaerobic groundwater bacteria can use BTEX, MTBE and other petroleum hydrocarbons for carbon and energy, eventually mineralizing these

compounds to carbon dioxide and water. Sulfate addition enhances natural processes and is a lower carbon footprint solution when compared to conventional remediation techniques.

The metabolic supplements in *NutriBind*® enhance the kinetics and efficiency, reducing remediation time, of sulfate reducing microbial systems related to the biodegradation of BTEX, MTBE, TBA and other petroleum hydrocarbons.

Sulfate Enhanced Bioremediation (SEB) Processes result in metabolic by-products, energy, and new microorganisms (Wiedemeier, 1999), summarized in the following equation:



Benefits

- NutriBind[®] treats water and soil
- Stops plume migration and protects sensitive receptors
- Rapidly reduces dissolved-phase plumes in days/weeks
- Addresses matrix back diffusion
- Highly cost-effective

Chemical Composition (most to least)

- Activated carbon
- Magnesium sulfate
- Nutrimens[®] (yeast fermentation product)

Properties

- Physical state: Solid
- Form: Powder / Granular
- Color: Black
- Odor: Faint fermentation aroma

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