PTS

PETROLEUM TREATMENT SOLUTION

Petroleum Treatment Solution – 100% Biodegradable Micro- & Macro- Nutrients for Biostimulation and Hydrocarbon Bioremediation

Enhanced bioremediation product comprised of an all-natural solution of essential micro- and macro-nutrients and a complete source of electron acceptors required for stimulation and the proliferation of indigenous microorganisms and accelerated biodegradation of petroleum hydrocarbons, fuel oxygenates, polycyclic aromatic hydrocarbons, chlorinated benzene and many more contaminants in both soil, groundwater and surface water environments.

Benefits Include

High purity source of micro and macronutrients

Complete source of electron acceptors

Economical solution compared to other available products

100% soluble for better injection ROI

Applications

Soil Mixing: Excavation and treatment of impacted soils for backfill or off site use

In-Situ Bioremediation: Direct push injection in groundwater

Soil bio piles and land farming

Combined with petroleum degrading bacteria in bioaugmented treatment approach

Crude Oil and Refined Fuel Spills in oceans, rivers, and on-land

May be combined with non-toxic non-ionic surfactant to improve emulsification of residual non-aqueous phase liquids

Target Contaminants

Petroleum Hydrocarbons:
BTEX-
Benzene, toluene, ethylbenzene, xylenes
MTBE-
Methyl tert-butyl-ether
GRO- Gasoline Range Organics
DRO- Diesel Range Organics
ORO- Oil Range Organics

Polycyclic Aromatic Hydrocarbons (PAHs)

Specifications:
Composition: N, PO_4, SO_4, and other proprietary biodegradable, non-toxic, colloidal micro- and macro-nutrients

For Environmental Applications of Soil, Water and Groundwater Remediation:

After decades of research and 1,000's of remediation sites cleaned up in North America and around the world, hydrocarbon remediation project results have shown us that no one solution works best for all situations as a stand-alone approach. For example, petroleum may degrade aerobically and anaerobically (biological processes), mechanically (SVE and airsparge) or chemically (Oxidation).

PTS™ was designed to enhance aerobic and anaerobic biological degradation processes but it also facilitates degradation in mechanical remediation systems such as SVE, DPE, MPE and Air Sparge because those systems help induce oxygen and the bacteria still need PTS™ to increase the rate of biodegradation resulting in faster cleanup.

Injection of PTS™ can be done easily as it is 100% soluble and ready to inject. PTS™ is diluted with clean water or groundwater and injected into the contaminated groundwater zone in a recirculation approach, push-pull approach, or "gravity feed" under natural pressure conditions. It is non-corrosive to underground structures or piping systems, biodegradable and non-toxic.

PTS™ can be combined with petroleum degrading bacteria **PTSBac™** when bioaugmentation is desired for faster results.

PTS Advanced™ works in conjunction with **PTS™** and delivers an ecologically safe and non-toxic surfactant blend specifically tailored to enhance the solubilization and emulsification of petroleum hydrocarbons that increases the bioavailability of the hydrocarbons for native bacteria or in combination with bioaugmentation.

Powder activated carbon can be combined to improve barrier applications to quickly sequester VOCs from migration off-site.

Technical design support, references, papers, and reliable customer services available to all customers.

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