

Foremost Environmental Solutions



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Isolite®CG - 2

The Environmental Superfind

ISOLITE®* and SOS**

Isolite®CG is used as a superior support/filter material in the bioremediation of contaminated air, soil, and water. Isolite®CG and SOS are environmentally friendly products for improving air, soil, and water.

* Isolite®CG (FES US Patent 5,733,067)

Isolite®CG is produced from diatomaceous earth, formed in uniform granules with proprietary combustion, resulting in an extremely stable porous ceramic that will not break down or migrate in the soil. The majority of the internal pore spaces will support bacteria making it an ideal support matrix for bioremediation.

** Solid Oxygen Source (EPA patent US 7,252,986) FES has been granted exclusive rights

SOS granules are made of sodium percarbonate, coated with a proprietary blend of compounds that will slowly release oxygen. When applied in the soil with Isolite®CG, the released oxygen will disperse both in the Isolite®CG and the surrounding soil. A long-term super-rich saturation of oxygen in the soil or water is created, establishing robust colonies of biodegrading bacteria.

Soil & Ground Water Remediation Uses for Isolite®CG and SOS

1. Soil treatment – As a biological support matrix - 1 gram of Isolite®CG supports 2×10^7 bacteria for colonization (200,000,000) - As a proppant for hydraulic & pneumatic fracturing – As an absorb/adsorb fluid wastes such as oil & gasoline spills
2. Vapor phase treatment – VOC's in a biofilter for both industrial and site remediation applications - Enhances soil vapor extraction, bio-venting, and pump & treat operations
3. Aqueous phase treatment – bioreactor – For use as root support matrix for constructed wetlands



Constructed Wetlands
Bioremediation Process of Isolite®CG and SOS Using



Typical Underground Storage Remediation Using Isolite and SOS

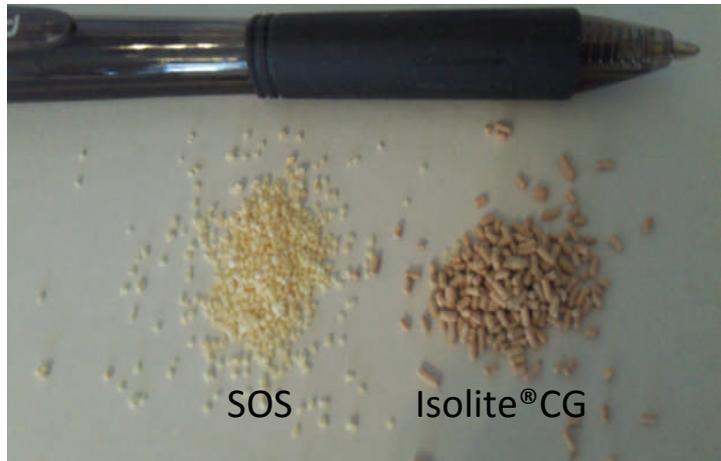
Hydraulic Fracturing

Foremost Environmental Solutions uses hydraulic fracturing as their method of bioremediation. The fracturing is accomplished using pressurized Isolite®CG pre-inoculated with specific microorganisms, SOS, and guar gum. Microorganisms within the Isolite®CG are introduced into the fractures where they begin to degrade the pollutants. The encapsulated sodium per carbonate, called SOLID OXYGEN SOURCE (SOS), developed by the EPA, provides a slow constant release of oxygen for the microorganisms. The Isolite®CG /SOS laden fractures create a preferential pathway to the super support matrix (Isolite®CG /SOS) for the mitigation of the contaminant. Because of the long-term super-rich saturation of oxygen in the soil or water, very robust colonies of biodegrading bacteria are established.

FES' hydraulic in situ fracturing using ISOLITE®CG combined with the SOS offers numerous advantages over standard bioremediation methods. Operational costs are minimized because equipment maintenance is not required (i.e. surface pumps or meters, which tend to freeze and fail, are not needed); the process doesn't spread pollutants as they do with pump & treat remediation methods; the in situ treatment allows businesses to remain open during cleanup (i.e. underground storage tanks at gas stations); and the slow release of oxygen provides a long term treatment.



Foremost Environmental Solutions' Hydraulic Fracturing Unit



Bioremediation process using Isolite®CG and SOS

