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PROMOTING ENVIRONMENTAL RESPONSIBILITY



A SUMMARY OF THE BENEFITS AND USES

- Peat Sorb™ is an environmentally friendly hydrocarbon absorbent product from Western Canada.
- Peat Sorb™ is a modified sphagnum peat product that repels water (hydrophobic) but has the ability to absorb hydrocarbons on contact, lock them up and not release them back into the environment.
- Peat Sorb™ will pick up a full range of petroleum products from crude oil to gasoline and has been used to solidify and absorb resins, PCB's, coal tars, fatty acids, and hydrocarbon based inks.
- Peat Sorb™ is equally effective on land or water.
- Peat Sorb™ is nonleaching. A hydrocarbon absorbed into Peat Sorb™ is retained until it degrades naturally by the microbes contained in any bio-active soil.
- Peat Sorb™ has been tested by independent laboratories and meets requirements for landfill by passing the Toxicity characteristic Leachate Procedure (T.C.L.P.), the Paint Filter Test and the Liquid Release Test.
- Peat Sorb™ is an effective vapor suppressant.
- Peat Sorb™ is nonabrasive and can be used around machinery without fear of damage to metal, plastic or rubber parts.
- Peat Sorb™ is certified SEG Incinerable.
- Peat Sorb™ products are used daily around the world in factories, ships, transportation facilities, ports, refineries, garages, fire departments, remediation projects, boats and golf courses.
- Peat Sorb™ products provide a lower total cost solution to its users, while virtually eliminating their environmental liabilities and creating a safer and easier working environment for employees.



THE BENEFITS AND USES

PROPERTIES

The range of physical and chemical properties of peat has led to many applications for it. It has long been used in agriculture and horticulture and its properties as a fuel have been appreciated for centuries. Because of its cellular structure, sorbent properties and high capacity for ionic exchange peat has been used as a natural filter to purify residential and industrial effluents and to absorb liquids and ordures. Peat, in its dehydrated form as Peat Sorb™, has additional properties.

Because of its dry cellular structure Peat Sorb™ has a wicking or sponging action that allows it to completely soak up hydrocarbons where water was once stored. The oil or other hydrocarbon is enclosed within the cells of the Peat Sorb™ and **will not leach out**. This appears to be the result of the very large surface area within the modified peat. Along with the ion exchange that complete the backup. In this respect Peat Sorb™ is not unlike activated carbon.

Since it repels water Peat Sorb™ will float while absorbing water-borne contaminants. Peat Sorb™ will pick up a full range of petroleum products from crude oil to gasoline and has been used to solidify and absorb resins, PCB's, coal tars, fatty acids and hydrocarbon based inks.

With respect to oil or petrol spills on water Peat Sorb™'s ability to float is of great benefit. Depending upon prevailing conditions Peat Sorb™ will float for a considerable amount of time (about two days) before taking on water and sinking. During this time it will soak up water-borne oil on contact. All oil is absorbed and retained within the Peat Sorb™ where it can do no further harm to the environment, even if it should sink before recovery workers can remove it from the water. Since it is a non-biodegradable, totally natural product, Peat Sorb™ whether it contains oil or not can be left in the subject environment being cleaned up without fear of further damage.

The hydrocarbons locked into the Peat Sorb™ will biodegrade however. Naturally occurring microorganisms and the humic acid in the Peat Sorb™ contribute to the breakdown of the oil products. Petroleum products are complex mixtures that may contain hundreds of different hydrocarbon compounds. Each constituent will affect the behavior of the product both before and after absorption. In the final analysis, however, all hydrocarbons are organic carbon compounds containing only carbon, oxygen and hydrogen. Almost all petroleum hydrocarbons will be degraded to carbon dioxide and water by microbial process within Peat Sorb™ within a relatively short time.

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THE BENEFITS AND USES

The speed with which petroleum products biodegrade is affected by many factors, including oxygen levels, moisture, temperature, acidity, nutrient content and the size and type of natural microbes present. Significant degradation of petroleum hydrocarbons in soil has been documented in time periods of less than three months. Depending upon the nature of the petroleum product more typical time periods for degradation are in the range of six to eighteen months. The hydrocarbons trapped inside Peat Sorb™ will degrade to carbon dioxide and water long before the Peat Sorb™ itself does.

Oil, retained and biodegrading inside nonleaching Peat Sorb™, is a better alternative to free floating oil which can continue to damage fish, plants and wildlife.

PROPERTIES OF PEAT SORB™

- **Absorbs on Contact**
- **Effective on Land & Water**
- **Nontoxic**
- **Non-Leaching**
- **Nonbiodegradable**
- **Lightweight**
- **Nonabrasive**
- **Vapor Suppressive**
- **Easily Disposal**
- **Cost Effective**

Peat Sorb™ is lightweight for easy handling and transportation. One 30 pound bale of Peat Sorb™ will effectively do the same job as 10 to 15 bags of clay, resulting in significant savings in time, labor and storage costs.

Peat Sorb™ has the advantage of being nonabrasive. For abrasive wear to happen to machinery it must come into contact with another substance of equal or greater hardness. Peat Sorb™, with a hardness factor of about 1 will not damage steel which has a hardness factor of 5. Clay, the most commonly used inorganic sorbent, has

a hardness factor exceeding 6 and will damage metal parts and cause rapid deterioration of soft rubber and plastic parts. Peat Sorb™ can be used around all types of machinery without fear of damaging expensive equipment.

Most petroleum products are extremely volatile. Effective spill response involves rapid limitation of the exposure pathways to prevent skin contact, inhalation or ingestion. The vapor suppressive and static resistant qualities of Peat Sorb™ are significant safety feature for spill response crews.

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ENVIRONMENTAL ISSUES

Peat Sorb™ has been subjected to a variety of laboratory tests. Most of these tests have been conducted in order to determine compliance with regulatory requirements, particularly in the United States.

Generally the various regulatory authorities in the United States require three performance test to determine whether a sorbent is suitable for landfill disposal. These are the Toxicity Characteristic Leaching Procedure (TCLP), the Liquid Release Test and the Paint Filter Test. Peat Sorb™ has successfully passed these tests and meets the requirements.

Of particular interest to the environmental community is the testing done at Michigan State University. When oil is spilled on grass, the grass dies, but when Peat Sorb™ is applied over the spill the grass continues to grow. These tests show that when a hydrocarbon is absorbed and encapsulated in Peat Sorb™, it is rendered harmless to the environment and creates a suitable spot for nature's own microbes to break down the hydrocarbon naturally while not permitting any migration, resulting in the eventual remediation of the site.

These tests were started three years ago and have been replicated every year with the same amazing results. All other products tested by the university showed migration and grass kill.

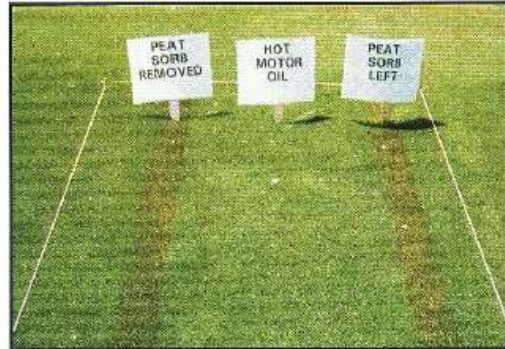
ENVIRONMENTALLY SAFE CONTROL OF FREE HYDROCARBONS

OIL SPILL RECOVERY OF TURFGRASS USING PEAT SORB*

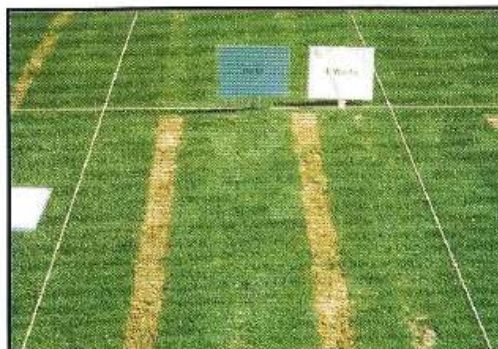
ONE WEEK RESULTS WITH HOT OIL



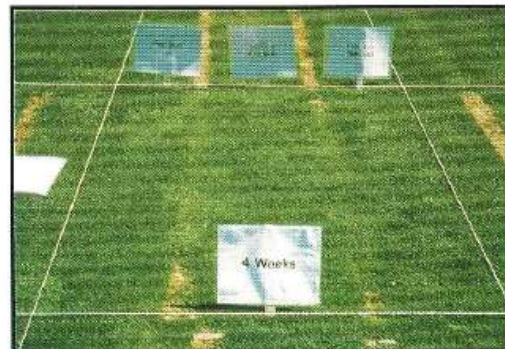
ONE WEEK RESULTS WITH HOT OIL & PEAT SORB



FOUR WEEK RESULTS WITH HOT OIL



FOUR WEEK RESULTS WITH HOT OIL & PEAT SORB



* RESEARCH DONE BY: J.M. Vargas, Jr., N.M. Dykema, A.R. Detweiler, P.J. Lecureux, J.C. Borgman
Michigan State University • Department of Botany and Plant Pathology

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