Canadian Food Inspection Agency | Agence canadienne d'inspection des aliments

Canadian Food Inspection Agency
8403 Coronet Road
Edmonton, Alberta
Canada T6E 4N7

Peat Sorb 2011 Inc.
3 Clyde Court
Port Perry, Ontario
Canada L9L 2C9

Attention: **National Plant Protection Organizations**

Re: **Peat Sorb 2011 Inc., Peat Based Absorbent**

This is to advise that the above company processes peat into an absorbent for oil and oil based chemical spills using a high heat drying process. It is not an agricultural product.

The peat is exposed to temperatures near 1200 degrees Fahrenheit (649 degrees Centigrade) throughout the drying process. This continues for an adequate time to reduce the moisture content of the peat from 55-60% to 7-10%. The hydrophylic nature of the peat changes to become hydrophobic, thereby fitting into the category of an industrial absorbent product which cannot be used in agriculture as a soil additive or growing medium. This negates the need for our Agency to supply a Phytosanitary Certificate for export. The temperatures sustained by the peat in the drying cycle would also negate the need for any fumigation certificate.

Sincerely,

Sandy Kennett
Plant Programs Inspector
Tel: (780)395-6778 Fax: (780)395-6792
Sandy.kennett@inspection.gc.ca

Canada

PEAT SORB

Dust Contamination by Clay & Diatomaceous Products

New U.S. Department of Labour OSHA standards for silica containing dusts have been established at 0.1 mg/m^3.

Canada now requires a bilingual warning of the cancer risk associated with industrial and consumer products containing clay and diatomaceous earth.

Based on manufacturer's data (Oil Dri Corp.) the dust content of absorbent clay, suspendible dust passing a #325 screen, is typically 0.1% of total weight

Therefore, 100 grams of clay floor sweep includes 0.1 grams of silica containing dust. A 0.1 gram content is enough to contaminate 1000m^3 of space or a 50' X 50' work area with a 14' ceiling. If evenly distributed, the quantity of silica containing dust would require each person occupied in the area to wear a dust mask.

Crystalline silica contained in clay and diatomaceous earth absorbents, is recognized by the State of California, as of October 1,1988, to cause cancer

Peat Sorb does not contain Crystalline silica.

Transcript of fax copy from the ministry of Labour dated January 21 1993:

Year: 1983 Section: 006 Sub-section: 01

Pursuant to section 6 (1) of order 769/83 the employer shall cause an assessment to be made in writing of the exposure or likelihood of exposure in a work place of a worker to the inhalation of silica.

note: silica is present in the "oil dry ground clay"

this order shall be complied with by February 19, 1993

In terms of paperwork, this means that if your company intends to use any product containing silica, you have to justify it in writing why you must use this product and what precautionary measures you are taking to ensure the safety of your employees.

PEAT SORB

Dust Contamination by Clay & Diatomaceous Products

Calculations

Volume of Dust

100g clay X 0.1% = 0.1g dust

$0.1mg/m^3 = 0.0001g/m^3$

$0.1g = 0.0001g/m^3 = 0.1mg/m^3$

Volume Room Measurements

Equal volume to a 50' X 50' X 14' room

$1000m^3$ X $35,14g/m^3$ = $35,314ft^3$

50' X 50' X 14' = $35,000ft^3$

References

Ministry of Labour, Operations Division
Occupational Health and Safety
January 21, 1993
1983 section 006 sub-section 01
ID No# 148292

Workplace Hazardous Materials Information System
Workers Compensation Board of British Columbia
June 1988, ch 3, et al.

Federal Register, Thursday, Jan, 19, 1989, Vol. 54, No. 12,
Part III Dept. of Labour, OSHA 29 CFR part 1910,
Air Contaminants; Final Rule p.2521

State of California Health and Welfare Agency
Safe Drinking Water and Toxic Enforcement Act of 1986.
List: Chemicals Known to Cause Cancer,
October 1, 1988, register 88, No. 41-3, pp 3260-65

Oil Dri Corporation of America
520 North Michigan Ave., Chicago, IL 60611
"Technical Data"

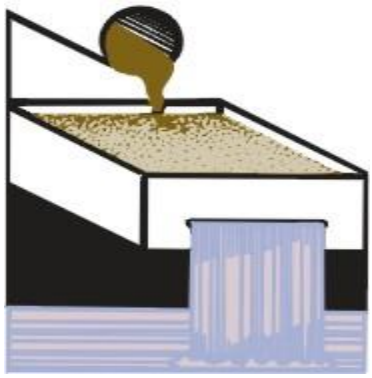
ENVIRONMENTAL INTELLIGENCE MANKIND IN PRESERVATION

KEEPING THE BLUE PLANET GREEN

PEAT SORB™ USED WITH WATER FILTRATION & PURIFICATION

The World is benefiting from interest in pollution, now, at a time when it is possible for our comparatively young industries to improve operations and reverse the trend of polluting our environment. This can be done at a reasonable cost, and without jeopardizing the financial stability or the health of our present and future generations.

Industrial wastes, untreated effluent from textile dye houses, metal plating, or battery manufacturing plants are high in colourants and heavy metal pollutants. Although colourants are generally biodegradable, special treatments are necessary to restore significant amounts of oxygen that are used up. Nature can also eliminate the heavy metals that are dumped into the environment during manufacturing processes, but it takes a long time for these to break down, and even the traces that are left can be highly toxic. Chemicals treating chemicals are not the answer! They are costly, dangerous to handle, both before and after the treatment process, and are very difficult to safely dispose of.



PEAT SORB™ PILLOW PAD

Tests show that after just two passes of effluent through a pillow pad of peat and water, the concentration of common transition metals was lowered to well below acceptable environmental limits for these toxic substances. Even though this peat would now be considered "polluted" it is completely safe to handle or store, and disposal presents no problem.

ENVIRONMENTAL INTELLIGENCE MANKIND IN PRESERVATION

PEAT SORB™

KEEPING THE BLUE PLANET GREEN

PEAT SORB can be used as a cleansing agent. It can absorb 8–12 times its own weight and is able to remove or neutralize 95% to 100% of contaminants present in water without any specialized training, and won't complicate the problem further by being hazardous to handle or difficult to dispose of.

Its unique cellular structure allows PEAT SORB to absorb dyes and other colour compounds. Because of its chemical composition, PEAT SORB can stabilize or neutralize these elements. With its ability to absorb through its porous exterior it can encapsulate, surround, and lock liquids and soluble solids into its gelatinous interior; thus virtually eliminating any chance of leaching when disposed of in landfill sites.

Accepted current processes of purifying water using PEAT SORB as the filter satisfies the stringent pollution control requirements of many well known governmental agencies including the United States Environmental Protection Agency. The federal government of Canada and affected provincial governments have also approved landfill as an acceptable disposal method for used peat.

This spent peat can also be burnt without any danger to the atmosphere. Companies doing research into water filtration using peat have found that the spent peat can continue to be used for horticultural purposes with excellent results. There is no danger of anything leaching out of the peat and contaminating ground waters.

Costs involved would depend on the degree of pollution, daily capacity, and other factors unique to each individual situation. The cost of PEAT SORB as a natural resource is minimal. The technology is priced much lower than filtration processes now in place.

ENVIRONMENTAL INTELLIGENCE MANKIND IN PRESERVATION

PEAT SORB™

KEEPING THE BLUE PLANET GREEN

Test Results of Removal of Heavy Metal Pollutants using the Husson/Couplan Water Treatment System			
METAL	**EFFLUENT LIMIT**	**BEFORE**	**AFTER**
Cyanide	**0.03**	**36.00**	**0.03**
Fluoride	**18.00**		
Aluminum	**0.20**	**40.00**	**0.30**
Barium	**1.00**		
Cadmium	**0.10**	**25.00**	**0.10**
Chromium +6	**0.05**	**300.00**	**0.04**
Chromium +3	**0.25**	**300.00**	**0.25**
Copper	**0.20**	**250.00**	**0.20**
Iron	**0.50**	**31.50**	**0.25**
Lead	**0.05**	**8.40**	**0.03**
Manganese	**1.00**		
Nickel	**1.00**	**67.50**	**0.05**
Silver	**0.05**		**0.05**
Zinc	**0.05**	**7.50**	**0.08**
Antimony		**30.00**	**0.05**
Mercury		**15.00**	**0.01**

ENVIRONMENTAL INTELLIGENCE MANKIND IN PRESERVATION

PEAT SORB™

KEEPING THE BLUE PLANET GREEN

Test Results of Removal of Pollutants (in addition to heavy metals) from a Sample of a Typical Dyehouse Effluent using the Husson/Couplan Water Treatment System		
CHARACTERISTIC	**BEFORE TREATMENT**	**AFTER TREATMENT**
Colour Sample "A"	**1250 APHA**	**65 APHA**
Colour Sample "B"	**2700 PT/CO**	**10 PT/CO**
Turbidity Sample "A"	**21.5 APHA**	**3 APHA**
Turbidity Sample "B"	**530 PPM SIO2**	**1.1 PPM SIO2**
Turbidity Sample "C"	**660 JTU**	**0 JTU**
C.O.D.	**1200 PPM**	**85 PPM**
B.O.D.	**150 PPM**	**8 PPM**
T.O.D.	**1200 PPM**	**156 PPM**
Phosphates	**33.6 PPM**	**0.76 PPM**
Suspended Solids	**216 PPM**	**4 PPM**

National Environmental Technology Applications Corporation
UNIVERSITY OF PITTSBURGH APPLIED RESEARCH CENTER
615 William Pitt Way • Pittsburgh, PA 15238
Facsimile (412) 826-3360
NETAC (412) 826-5511

March 12, 1992

Mr. Allan Schully

49 Spadina Avenue, Suite 207
Toronto, Ontario M5V 2J1
CANADA

Dear Mr. Schully:

Enclosed are two copies of the abbreviated version of NETAC's final report prepared for Peat Sorb Corporation in which NETAC evaluated the Peat Sorb absorbent to absorb cutting oil.

In these studies, NETAC determined the sorptive capacity of Peat Sorb for cutting oil to be 3.78 (weight oil absorbed:weight absorbent). In addition, 1:1 and 3:1 cutting oil-Peat Sorb mixtures were prepared and analyzed by the U.S. EPA Toxicity Characteristic Leaching Procedure (TCLP) and other environmental tests. None of the listed compounds in the TCLP test procedure were detected.

Let me know if we can be of further assistance.

Sincerely,

A. Bruce King, Ph.D.
Senior Technical Consultant

ABK:skr
Enclosures
WPPSR304/5-2007-000

National Environmental Technology Applications Corporation
UNIVERSITY OF PITTSBURGH APPLIED RESEARCH CENTER
615 William Pitt Way • Pittsburgh, PA 15238
Facsimile (412) 826-3360
NETAC (412) 826-5511

TECHNICAL EVALUATION REPORT
PEAT SORB ABSORBENT FOR CUTTING OIL

Project 5-2007-000

Prepared for

Peat Sorb Corporation
Edmonton, Alberta

Experimental Summary

The National Environmental Technology Applications Corporation (NETAC) was contracted to conduct an evaluation of Peat Sorb's capability to absorb cutting oil. The tests were performed at two different loadings of cutting oil to absorbent. The two oil-sorbent mixtures were evaluated for hazardous characteristics as per 40 CFR Part 268 as well as for fuel-related properties.

An unused commercial cutting oil (Gulf Cut 21) was used in these tests. Table 1 lists the inspection tests run at the Pittsburgh Applied Research Corporation on a sample (BPEC-1-15C) of the cutting oil used.

The holding capacity of the Peat Sorb to absorb the cutting oil was determined by mixing weighed quantities until excess liquid was observed. The excess oil was drained from the absorbent overnight using a Buchner funnel without any added compressive force. Based on the weight of recovered oil in this experiment, a holding capacity of 3.78 (weight oil absorbed:weight absorbent) was determined.

Technology Development Results

Single samples of cutting oil-Peat Sorb mixtures were prepared in weight ratios of 1:1 and 3:1 (weight oil:weight absorbent) for Toxicity Characteristic Leaching Procedure (TCLP) and other environmental tests by Wadsworth/ALERT Laboratories, Inc., Pittsburgh, PA. The results from these analyses are abstracted and compared in Tables 2 and 3.

The analyses of the samples of cutting oil-Peat Sorb mixtures show that both the 1:1 mixture and the 3:1 mixture passed the TCLP test with none of the listed compounds being detected. In some tests, the 3:1 mixture had higher detection limits due to higher organic background for that sample.

PREPARED BY

A. Bruce King, Ph.D.
Senior Technical Consultant

APPROVED

Victor A. Fishman, Ph.D.
Executive Vice President

Feb 10, 1992
Date

Table 1

CUTTING OIL INSPECTION DATA

PITTSBURGH APPLIED RESEARCH CORPORATION
UNIVERSITY OF PITTSBURGH APPLIED RESEARCH CENTER
100 William Pitt Way • Pittsburgh, PA 15238 • 412-826-5000

Telex 5106019265
Facsimile 412-826-5444

THOMAS J. PUZNIAK
Vice President
Operations

412-826-5117

412-826-5052

PITTSBURGH APPLIED RESEARCH CORPORATION
ANALYTICAL SERVICES SAMPLE REPORT

SAMPLE ID: 108003

SPONSOR: W. McKINNEY BLDG: 9 ROOM: WORK ORDER #: 210309
REFERENCE: NETAC DATE: 12/27/91
DESCRIPTION: CUTTING OIL BPEC-1-15-C

INSPECTION:

0100	GRAVITY, API, D287	23.1
1091	VISCOSITY, KIN., D445, CS, 100 F	36.195
1425	FLASH, P-M, D93, F	315
1500	POUR POINT, D97, DF	-50
1785	COLOR, D1500	>8.0
2025	ODOR, D1833	1
3362	PARTICULATE MATTER,D2276,MG/100 ML	5.5
3505	COPPER STRIP, 212 F, 3 HR., D130	4C
3945	ACID NO. TOTAL, D974, MG KOH/G	0.36

NETAC

Some Liquids, Absorbed by PEAT SORB

Acetone
Acetonitrile
Amyl Acetate
Benzene
Butanol
2 - Butanone
Bromodichloromethane
Bromoform
Carbon Disulfide
Carbon Tetrachloride
Chloroform
Chloromethane
Chlorobenzene
Cutting Oils
Cyclohexane
Dichlorobenzene
Dichloromethane
1, 2 - Dichloroethene
Diesel Fuels
Ethanol
Ethylbenzene
Ethyl Ether
Ethylene Glycol
Gasoline
Heptane
Hexane
Hexachlorobenzene
Hexachlorobutadiene
Hexachloroethane
Isobutanol
Isoprene
Isopropanol
Jet Fuels
Kerosene
Methanol
Methylene Chloride
Methyl Ethyl Ketone
Methylphenol
Motor Oils
Naphthalene
2 - Nitroaniline
Nitrobenzene
Pentane
Pentachlophenol
Phenol
Propanol
Styrene
Tetrachloroethane
Tetrachloroethylene
Tetrahydrofuran
Toluene
Trichloroethylene
Trichlorophenol
Varsol
Vinyl Acetate
Vinyl Chloride
Xylenes

Table 2

SUMMARY OF TCLP EXTRACT ANALYSES

	1:1 Mixture		3:1 Mixture	
	Sample: BPEC-1-15A Lab No. 4379-42224		Sample: BPEC-1-15B Lab No. 4379-42225	
	RESULT (mg/L)	DETECTION LIMIT	RESULT (mg/L)	DETECTION LIMIT
VOLATILE ORGANICS Methods SW846 1311, 8240				
Benzene	ND	0.025	ND	0.025
Carbon tetrachloride	ND	0.025	ND	0.025
Chlorobenzene	ND	0.025	ND	0.025
Chloroform	ND	0.025	ND	0.025
1,2-Dichloroethane	ND	0.025	ND	0.025
1,1-Dichloroethylene	ND	0.025	ND	0.025
Methyl ethyl ketone	ND	0.250	ND	0.250
Tetrachloroethylene	ND	0.025	ND	0.025
Trichloroethylene	ND	0.025	ND	0.025
Vinyl chloride	ND	0.050	ND	0.050
SEMI-VOLATILE EXTRACTABLE ORGANICS Methods SW846 1311, 8270				
Cresol	ND	1.0	ND	4.0
1,4-Dichlorobenzene	ND	1.0	ND	4.0
2,4-Dinitrotoluene	ND	1.0	ND	4.0
Hexachlorobenzene	ND	1.0	ND	4.0
Hexachloro-1,3-butadiene	ND	1.0	ND	4.0
Hexachloroethane	ND	1.0	ND	4.0
Nitrobenzene	ND	1.0	ND	4.0
Pentachlorophenol	ND	5.0	ND	20
Pyridine	ND	1.0	ND	4.0
2,4,5-Trichlorophenol	ND	5.0	ND	20
2,4,6-Trichlorophenol	ND	1.0	ND	4.0

Note: ND = (None detected)

The above table is abstracted from the Wadsworth/ALERT Laboratories Inc. Report Number 4379 dated January 17, 1992.

Table 2

SUMMARY OF TCLP EXTRACT ANALYSES (Continued)

	1:1 Mixture		3:1 Mixture	
	Sample: BPEC-1-15A Lab No. 4379-42224		Sample: BPEC-1-15B Lab No. 4379-42225	
	RESULT (mg/L)	DETECTION LIMIT	RESULT (mg/L)	DETECTION LIMIT
CHLORINATED PESTICIDES Methods SW846 1311, 8080				
Lindane	ND	0.001	ND	0.005
Heptachlor	ND	0.001	ND	0.005
Heptachlor Epoxide	ND	0.001	ND	0.005
Endrin	ND	0.002	ND	0.010
Chlordane	ND	0.010	ND	0.050
Methoxychlor	ND	0.010	ND	0.050
Toxaphene	ND	0.020	ND	0.100
HERBICIDES Methods SW846 1311, 8150				
2,4-D	ND	0.100	ND	0.100
2,4,5-TP (Silvex)	ND	0.010	ND	0.010
METALS Methods SW846 1311, 6010, 7470				
Silver	ND	0.010	ND	0.010
Arsenic	ND	0.300	ND	0.300
Barium	ND	0.200	ND	0.200
Cadmium	ND	0.005	ND	0.005
Chromium	ND	0.010	ND	0.010
Mercury	ND	0.001	ND	0.001
Lead	ND	0.050	ND	0.050
Selenium	ND	0.300	ND	0.300

Note: ND = (None detected)

The above table is abstracted from the Wadsworth/ALERT Laboratories Inc. Report Number 4379, dated January 17, 1992.

Table 3

ANALYTICAL REPORT

PARAMETER	METHOD	1:1 Mixture Sample: BPEC-1-15A Lab No. 4379-42224 RESULT	3:1 Mixture Sample: BPEC-1-15B Lab No. 4379-42225 RESULT
Percent Water	ASTM E1064-85	8.6%	5.2%
Ash Content - solid	ASTM D1553-83	3.5%	1.6%
Btu per Pound	ASTM D2015-85	12900 Btu/lb	15500 Btu/lb
Cyanide Reactivity	SW846 7.3.3.2	ND(1)	ND(1)
Flash Point (PMCC)	SW846 1010	>200°F	>200°F
pH - Solid	SW846 9045	6.6 su	5.6 su
Paint Filter Test	SW846 9095	No free flowing liquid.	No free flowing liquid.
Sulfide Reactivity	SW846 7.3.4.1	ND(2)	ND(2)

NOTE: ND = (None detected) dry weight
(1) Detection limits 10 mg/kg
(2) Detection limits 50 mg/kg
PMCC (Pensky Martin Closed Cup)

The above table is abstracted from the Wadsworth/ALERT Laboratories Inc. Report Number 4379 dated January 17, 1992.

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.

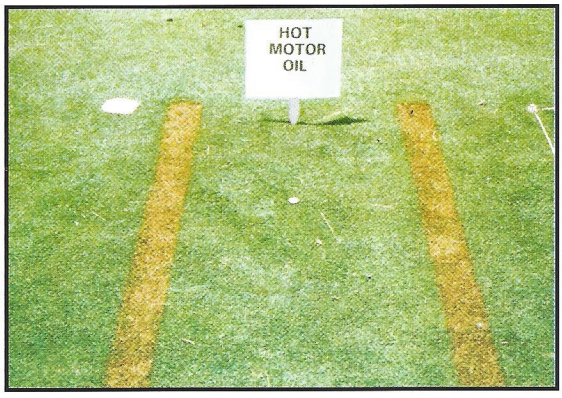
Of particular interest to the environmental community is the testing done at Michigan State University. When oil is spilled on grass, the grass dies, but when Peat Sorb™ is applied over the spill the grass continues to grow. These tests show that when a hydrocarbon is absorbed and encapsulated in Peat 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.

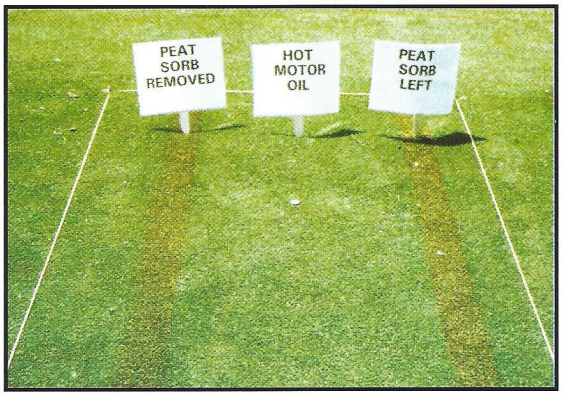
ENVIRONMENTALLY SAFE CONTROL OF FREE HYDROCARBONS

OIL SPILL RECOVERY OF TURFGRASS USING PEAT SORB*

ONE WEEK RESULTS WITH HOT OIL

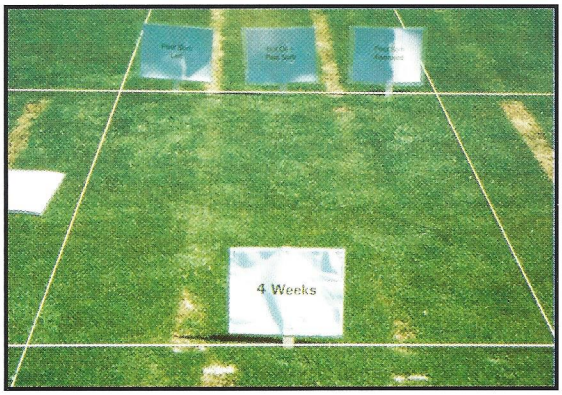


ONE WEEK RESULTS WITH HOT OIL & PEAT SORB



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