



National Environmental Technology Applications Corporation
UNIVERSITY OF PITTSBURGH APPLIED RESEARCH CENTER
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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





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**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.

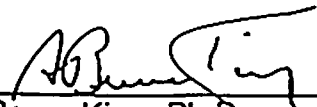
Technology Development Results


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

APPROVED


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


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

Feb 10, 1992
Date

Table 1

CUTTING OIL INSPECTION DATA



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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	FOUR POINT, D97, DF	-50
1785	COLOR, D1500	>8.0
2025	ODOR, D1833	1
3362	PARTICULATE MATTER, D2276, HG/100 HL	5.5
3505	COPPER STRIP, 212 F, 3 HR., D130	4C
3945	ACID NO. TOTAL, D974, HG KOH/G	0.36



Some Liquids, Absorbed by PEAT SORB

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



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

1:1 Mixture

3:1 Mixture

Sample: BPEC-1-15A Sample: BPEC-1-15B
Lab No. 4379-42224 Lab No. 4379-42225

PARAMETER	METHOD	RESULT	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.

