UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

Site: MT Olathe
ID #: KSD031349624
Break: 2.3
Other: EPA 1-11-89

JAN 11 1989

MEMORANDUM

SUBJECT: GC/MS Scan Analysis of Activity PK870

FROM: William W. Bunn W. Bunn
Chief, Mass Spectrometry Section, LABO/ENSV

TO: Andrea M. Jirka
Chief, Laboratory Branch, ENSV

The GC/MS scan analysis for activity PK870 Chemical Commodities, Olathe has been completed, data sheets are attached. A summary of the analytical results is as follows:

- PK870001: Floor drain sediment. This sample contained low levels of various polynuclear aromatic hydrocarbons, approximately 100 PPM. The sample also contained approximately 100 PPM of cis-Terpin Hydrate (see attached description from the Merck Index).

Attachment

cc: Data Files

ANALYTICAL DATA REPORT

Tentatively Identified Compounds from GC/MS Scan

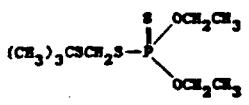
Fraction GC/MS Scan Method No. _____

Sample Number PK870001 Date/Analyst 12/22/88 B.D.

Matrix Soil Units Mg/Kg

Scan Number	Compound Name	*Estimated Value
655	aromatic hydrocarbon, not identified	20
842	Cis-Terpin Hydrate	100
1211	Diethyl Phthalate	20
1417	9H-Fluorene, 9-Methylene	30
1597	not identified	10
1697	Pyrene	5
1746	Fluoranthene	30
1952	P,P'-DDT	5
1990	not identified	10
2101	Bis(2-Ethylhexyl) Phthalate	50

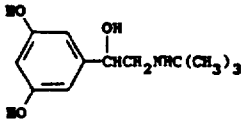
* This is a crude estimation based on response relative to an internal standard An authentic standard has not been run.



Technical product (85 to 88% purity): clear, colorless to pale yellow liq, d^{25} 1.105. $bp_{0.01}$ 69°. mp −29.2°. Flash pt 85° (tag open cup). Sol in acetone, alcs, aromatic and chlorinated hydrocarbons. Soly in water: 10-15 ppm. LD_{50} orally in rats: 1.6-4.5 mg/kg in males; 9.0 mg/kg in females.

USE: Soil insecticide.

8879. Terbutaline. *5-[2-[(1,1-Dimethylethyl)amino]-1-hydroxyethyl]-1,3-benzenediol; α-[(tert-butylamino)methyl]-3,5-dihydroxybenzyl alcohol;* 1-(3,5-dihydroxyphenyl)-2-(*tert*-butylamino)ethanol. $C_{12}H_{19}NO_3$; mol wt 225.29. C 63.97%, H 8.50%, N 6.22%, O 21.30%. Prepn: Wetterlin, Svensson, Belg. pat. 704,932 (1968 to Draco). Pharmacological activity: Bergman *et al., Experientia* 25, 899 (1969). Resolution of isomers and activity studies: Wetterlin, *J. Med. Chem.* 15, 1182 (1972).



Crystals from absolute ether, mp 119-122°.

Sulfate. $C_{24}H_{46}N_2O_{10}S$. *Bricanyl, Brethine* (tabl). mp 246-248°.

THERAP CAT: Adrenergic; bronchodilator.

8880. Terebene. A mixture of dipentene and other hydrocarbons obtained by shaking oil of turpentine with successive quantities of sulfuric acid: Howard, *Pharm. J.* 103, 76 (1919).

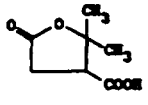
Colorless liquid; thyme-like odor, bp 160-172°. Resinifies on exposure to air and light. d_{25}^{25} 0.860-0.865. Practically optically inactive. Almost insol in water. Miscible with chloroform, ether, abs alcohol; 1 ml dissolves in 3 ml 95% alcohol. *Keep well closed and protected from light.*

USE: Treatment of cellulosic matter with terebene to render it water and oil resistant.

THERAP CAT: Expectorant; antiseptic.

THERAP CAT (VET): Orally or by inhalation: antiseptic and expectorant.

8881. Terebic Acid. *Tetrahydro-2,2-dimethyl-5-oxo-3-furancarboxylic acid; tetrahydro-2,2-dimethyl-5-oxo-3-furoic acid;* terebinic acid; (1-hydroxy-1-methylethyl)succinic acid γ-lactone. $C_7H_{10}O_4$; mol wt 158.15. C 53.16%, H 6.37%, O 40.47%. Prepared from fumaric or maleic acid: Schenck, Steinmetz, *Tetrahedron Letters* no. 21, 1 (1960); Lipp *et al., Ann.* 644, 37 (1961). Prepn of optical isomers: Fredga, *C.A.* 42, 123g (1948); Delépine, Badoche, *Compt. Rend.* 235, 1069 (1952).

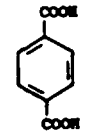


Crystals, mp 174-175°, but begins to volatilize at 100°. d 0.815. Slightly sol in cold water, freely in boiling water or warm alcohol.

(+)-Form, $[\alpha]_D^{25}$ +13.2° (c = 0.03 in acetone).

(−)-Form, mp 201-205° (dec). $[\alpha]_D^{25}$ −13.2° (c = 0.03 in acetone).

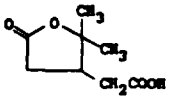
8882. Terephthalic Acid. *p*-Phthalic acid; *p*-benzenedicarboxylic acid; Tephthol. $C_8H_6O_4$; mol wt 166.13. C 57.83%, H 3.64%, O 38.52%. Prepared by oxidation of *p*-methylacetophenone: Koelsch, *Org. Syn.* coll. vol. III, 791 (1955). Manuf processes: U.S. pat. 3,014,961 (1959 to VEB Chemie Werke Buna); Sherwood, *Chem. & Ind. (London)* 1960, 1096.



Crystals. Sublimes above 300° without melting. Practically insol in water, chloroform, ether, acetic acid; slightly sol in cold alcohol, more in hot alcohol; sol in alkalies.

USE: Forms polyesters with glycols which are made into plastic films and sheets; in analytical chemistry. *Caution:* Mild irritant.

8883. Terpenylic Acid. *Tetrahydro-2,2-dimethyl-5-oxo-3-furanacetic acid; 3-(1-hydroxy-1-methylethyl)glutaric acid γ-lactone;* tetrahydro-5-keto-2,2-dimethyl-3-furanacetic acid; terpenolic acid. $C_8H_{12}O_4$; mol wt 172.19. C 55.80%, H 7.03%, O 37.17%. Prepd from α-terpineol, terebic acid, or terpin hydrate: Suga, Sakoda, *J. Sci. Hiroshima Univ. Ser. A* 22, 69 (1958), *C.A.* 53, 10273f; Lipp *et al., Ann.* 644, 37 (1961). Resolution of optical isomers: Fredga, Sandberg, *C.A.* 52, 11747g (1958).

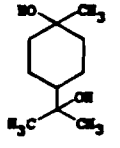


Monohydrate, prisms, mp 57°. When anhydrous, melts at 90°. Sublimes 130-140°. Moderately sol in cold water; very sol in hot water.

(+)-Form, mp 92-94°, $[\alpha]_D^{25}$ +56.3°.

(−)-Form, mp 92-94°, $[\alpha]_D^{25}$ −56.5°.

8884. Terpin. *4-Hydroxy-α,α,4-trimethylcyclohexanemethanol; p-menthane-1,8-diol;* dipenteneglycol. $C_{10}H_{20}O_2$; mol wt 172.27. C 69.72%, H 11.70%, O 18.58%. Both *cis*- and *trans*-modifications are known. The *cis*-compd is obtained most readily in the hydrated form, *cis*-terpin hydrate. Prepn of *cis*-form from oil of turpentine: Hempel, *Ann.* 180, 71 (1876); Wallach, *Ann.* 230, 225 (1885); Schmitt, *Mfg. Chemist* 26, 350 (1955). From *d*-limonene: Sword, *J. Chem. Soc.* 127, 1632 (1925). Prepn of *trans*-form from 1,8-cineole, α-terpineol or *cis*-terpin hydrate: Matsuura *et al., Bull. Chem. Soc. Japan* 31, 990 (1958); Lombard, Ambroise, *Bull. Soc. Chim. France* 1961, 230. Structure of *cis*- and *trans*-forms: Baeyer, *Ber.* 26, 2861 (1893); Wagner, *ibid.* 27, 1636 (1894).



cis*-Form hydrate, *terpin hydrate, terpinol. Rhombic pyramids from water, mp 116-117°; sublimes at about 100° when heated slowly; slight characteristic odor and slightly bitter taste; efflorescent in dry air. Anhydr *cis*-form: mp 104-105°; bp 258°; rapidly re-forms hydrate on exposure to air. One gram dissolves in 34 ml boiling water, 13 ml alcohol, 3 ml boiling alcohol, 135 ml chloroform, 140 ml ether, about 1 ml boiling glacial acetic acid. At 20°, one gram dissolves in 13 ml methanol, 13 ml ethyl acetate, 250 ml water, 77 ml benzene, 290 ml carbon tetrachloride, 250 ml carbon disulfide. Practically insol in petr ether.

trans-Form, monoclinic prisms, mp 158-159°. One gram dissolves at 20° in 11 ml methanol, 20 ml ethyl acetate, 100 ml water, 250 ml benzene, 250 ml carbon tetrachloride, 500 ml carbon disulfide.

THERAP CAT: *cis*-Form hydrate as expectorant.

THERAP CAT (VET): Expectorant.

8885. Terpinene. $C_{10}H_{16}$; mol wt 136.23. C 88.16%, H 11.84%. Mixture of three isomeric hydrocarbons: α-terpin-

G Hess
EPBR .630

REGION VII ANALYTICAL SERVICES REQUEST FORM

Activity Number PK 877 Date 1/17/89
Activity Description Chemical Contaminates
Originator G. Hess Division/Branch ENSV/EPAR
Projected Sample Delivery Date week of Feb 13.

REQUEST SUMMARY

No. of Samples	Matrix	Analyses Type
CLP { 16	SOIL	METALS/GCMS (4-5 w/VOLATILES)
CLP { 4-10	WATER	VOLATILES/GCMS
CLP { 1	SEDIMENT	METALS/GCMS
2 containers - 20-40	high hazard	RCRA CLP characteristics w/ Possible GCMS Here
Here - 8-10	AIR	GC/MS

SPECIAL REQUIREMENTS OR COMMENTS

APPROVALS

Originator (Date)
Division Director or Branch Chief 11/8/89 (Date)

DATA REVIEW OPTIONS

- [X] LEVEL 1 (In-depth) for 20-40 RCRA Samples
- [X] LEVEL 2 soil & water, sediment
- [ ] LEVEL 3 (minimal)

AJS 11/8/89

TO BE COMPLETED BY REGION VII LABORATORY
Lab Branch Approval:

Lab Assignment				Due Date	
	Region VII	X	CLP		Routine 8 wks
	TAT		Other		Other
	ESAT				

Distribution

Originator	MSSV
Data Coordinator	ANSV
CLQA	TAT Team Leader
RSCC	ESAT Team Leader
	AJ Other

Sec(45)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

Date: 1/5/89

MEMORANDUM

SUBJECT: Data Transmittal for Activity #: PK870,
Site Description: Chemical Commodities

FROM: Andrea Jirka
Chief, Laboratory Branch, ENSV

TO: Charles P. Hensley
Chief, Emergency Planning and Response Branch, ENSV

ATTN: G. Hess

Attached is the data transmittal for the above referenced site. This should be considered a ___ Partial or X Complete data transmittal (completes transmittal of _____). If you have any questions or comments, please contact Dee Simmons at 236-3881.

Attachments

cc: Data File

DATA REPORTING / QUALIFICATION CODES

U - The material was analyzed for, but was not detected. The associated numerical value is the sample detection limit.

J - The associated numerical value is an estimated quantity (explanation attached).

I - The data are invalid (compound may or may not be present). Resampling and/or reanalysis is necessary for verification.

N - Sample not analyzed.

CODES FOR FLASH POINT DATA

L - The sample did not ignite or "flash". This is the highest temperature at which the sample was tested. It is possible that the material may be ignitable at higher temperatures.

K - The sample did ignite or "flash" at the lowest temperature tested. This is usually the ambient temperature at the time of the test. It is possible that the material may be ignitable at even lower temperatures.

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Name: Chemical Commodities Site Number:
Location: 320 Blake, Olathe KS Site Code:

Collected: YR: 90 MO: 12 Day: 14 Time: 1345 Leader: Hess

Sample Number: PKE90-001 SMO #: _____

Sample Media (circle one):
SOIL, DUST, RINSATE, (SEDIMENT), WATER, OTHER: _____

Sample Split (circle one): YES (NO)

Sample Container	Tag Color	Preservative	Analysis Requested
8oz glass wide mouth		None	GC/MS Metals

Depth: _____ Fan #: _____ Aliquots: _____

Samplers: G. Hess
B. Mackisen

COMMENTS OF FIELD PERSONNEL

Site Description:

Floor drain sediment. Floor drain located main ware house area on the east side near the south end. The drain was near a compressor like machine Mfg by York Co. of York PA. on a concrete base.

IBM-PC

ANALYSIS TYPE: TOTAL METALS

TITLE: CHEMICAL COMMODITIES | MATRIX: HAZARDOUS | UNITS: MG/KG
LAB: EPA REGION VII | METHOD: 2001H77 GLM | CASE:
SAMPLE PREP: GRS | ANALYST/ENTRY: GRS | REVIEWER: _____ | DATE: 12/20/88
GRS | DATA FILE: GS6

		FKB70001
SILVER	MG/KG	.94U
ALUMINUM	MG/KG	5100.0
ARSENIC	MG/KG	47.0U
BARIUM	MG/KG	960.0
BERYLLIUM	MG/KG	.47U
CADMIUM	MG/KG	47.0U
COBALT	MG/KG	29.0
CHROMIUM	MG/KG	1000.0
COPPER	MG/KG	2300.0
IRON	MG/KG	110000.0
MANGANESE	MG/KG	900.0
MOLYBDENUM	MG/KG	21.0
NICKEL	MG/KG	120.0
LEAD	MG/KG	1600.0
ANTIMONY	MG/KG	47.0U
SELENIUM	MG/KG	47.0U
TANIUM	MG/KG	N/A
LLIUM	MG/KG	28.0U
NADIUM	MG/KG	32.0
ZINC	MG/KG	3000.0
CALCIUM	MG/KG	40000.0
MAGNESIUM	MG/KG	1900.0
SODIUM	MG/KG	5400.0
POTASSIUM	MG/KG	610.0

ANALYSIS TYPE: ION CHROMATOGRAPH SCAN

TITLE: CHEMICAL COMM
LAB: EPA REGION VII
SAMPLE PREF:_____ ANALYST/ENTRY: GLM

MATRIX: Solid [redacted]
METHOD: IC
REVIEWER: GLM
DATA FILE: GM9

UNITS: MG/Kg as received
CASE:
DATE: 12/29/88

FK870001

FLUORIDE	15.
CHLORIDE	1600.
NITRITE-NITROGEN	10.U
NITRATE-NITROGEN	10.U
SULFATE	790.
ORTHOPHOSPHATE	10.U

** NOTE: N/A MEANS NOT ANALYZED **
*** I MEANS ANALYZED BUT INVALID DATA ***