

2197
PX 2198

12-15-72

Dioxins in Pentachlorophenol

Approximate Concentrations (ppm)

Sample # TCDD H₆CDD H₇CDD OCDD

194478-1 ↑ .2 1.6 3.0 3.2

2 ↓ 4.1 1.3 2.1 4.3

3 ↓ .3 1.1 2.2 2.2

↓

4 W 1.0 2.1 2.5 3.5

↓

5 H 1.6 2.1 3.7 3.4

↓

6 W 9 1.8 3.1 3.1

↓

7 1.0 2.0 3.7 2.5

↓

8 ↓ 6 3.7 5.3 4.0

↓

9 ↑ .4 * *

↓

10 ** * *

↓

11 ** * *

↓

12 ** * *

↓

KM-261 ↓ .3 * *

↓

5005447 PGP

* Would have to be diluted x100 for analysis

** Boiling electron capture active impurity interferes with analysis

C19130

CONFIDENTIAL
SUBJECT TO PROTECTIVE ORDER

Trichlorophenols

184494

12.0 hours

196002

9.0 hours

} no detectable TCDD, detection limit
~ 1 ppm due to matrix impurities

MCL Australia Penta

GEI-7

CKI-17

} no detectable TCDD, > 0.2 ppm

Distilled Penta, Control & Heat Treated

		TCDD	H ₄ CDD	H ₂ CDD	OCDD
194453	#1	~ 0.7	← normal →		
	#2	~ 1.5	← double →		
	#3	~ 4	double	← 5-10 fold →	

Not yet verified by GC/MS

Current & Past Production

194440 (KM-261)

0.2 - 0.3 ppm TCDD by GC

194443

0.1 - 0.2 ppm

194451

0.4 - 0.6 ppm

CONFIDENTIAL

SUBJECT TO PROTECTIVE ORDER

0005228

PCP

C18131

Analyses of Distilled Penta from new Tent. Process

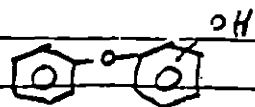
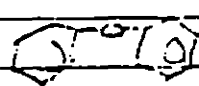
ID	Dioxins Found (PPM)			
	TCDD	H ₄ CDD	H ₂ CDD	OCDD
194436	<0.08	1.8 ± .5	3.0 ± 1	6.5 ± 2
194432-1	<0.08	1.5 "	2.9 "	5.2 "
194437-1	0.08-0.2	1.4 "	3.0 "	5.6 "
194437-2	0.08-0.2	1.6 "	2.5 "	9.5 "
194443-3	<0.08	<0.4 *	0.1 ± 0.1	0.5 ± 0.2
194443-4	<0.08	<0.4 *	0.4 "	0.6 "

* Calculated from GC peaks eluting in the vicinity of known H₄CDD peaks, but retention times do not coincide exactly.

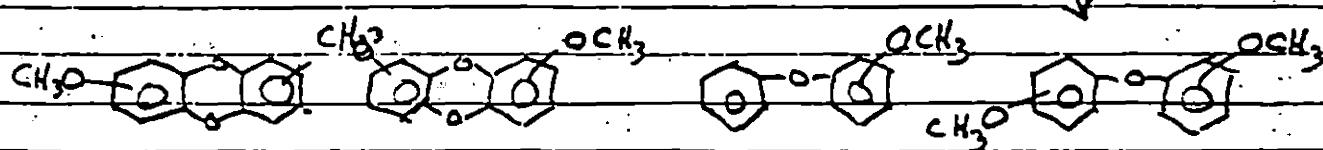
35
+31
-4

-35
+31
-4

Handwritten signature



0	184	168	170	94	186
1	218	202	204	128	220
2	252	236	238	162	254
3	286	270	272	196	288
4	320	304	306	230	322
5	354	338	340	264	356
6	388	372	374		390
7	422	406	408		424
8	456	440	442		458



0	214	244	200	230
1	248	278	234	264
2	282	312	268	298
3	316	346	302	332
4	350	380	336	366
5	384	414	370	400
6	418	448	404	434
7	452		438	
8				

CONFIDENTIAL
SUBJECT TO PROTECTIVE ORDER

0005230

PCP

019133

I 482 pentachlorobenzene

489 MW 274

34	306
<u>5</u>	<u>122</u>
175	136

II 488 hexachlorobenzene

I 492 MW 306 SCI + penta

496 dichlorodibenzofuran

502 hexachlorodiphenyl ether

507 heptachlorodiphenyl ether

516 heptachlorodibenzop-dioxin

517 "

↓

520 "

CONFIDENTIAL
SUBJECT TO PROTECTIVE ORDER

0005231

PCP

C19134

	T	H ₆	H ₇	O
194437-2	0.1	1.6 = 5	3.2	9.5
194443-3	0.08	< 0.4	1	0.5
194437-1	0.1	1.4	3.0 3.7	5.6
194443-4	0.08	< 0.4	2.4 5	0.6
194436	0.08	1.8	3.0 3.7	6.5
194432-1	0.08	1.5	3.7 5.6	5.2

↑

0.1
~~0.1~~
0.7

	T	H ₆	H ₇	O
194436	0.08	1.8	3.0	6.5
194432-1	0.08	1.5	2.9	5.2
194437-2	0.1	1.6	2.5	9.5
137-1	0.1	1.4	3.0	5.6
-3	0.08	0.4	1	0.5
-4	0.08	0.4	1.4	0.6

CONFIDENTIAL

SUBJECT TO PROTECTIVE ORDER

0005232-

PCP-

C19135