% COMPOSITION OF POLYCHLORINATED BIPHENYL PRODUCTS*

HOMOLOG # Cl/BIPHENYL	AROCLOR 1221	AROCLOR 1016	AROCLOR 1242	AROCLOR 1254
0	10.8	-	-	-
1	51.0	1.0	0.7	-
2	32.0	19.4	15.6	0.1
3	4.2	64.5	54.5	0.6
4	1.6	15.0	22.5	20.2
5+	0.3	0.2	6.7	79.0

*PER CENT (W/W) BY GC/MASS

MCNS 059767

RESIDUE STUDY OF AROCLOR 1242 IN BEAGLE DOGS

TWO YEAR CHRONIC ORAL EXPOSURE

	PPM PCBs*			HOMOLOG DISTRIBUTION									
ORAL EXPOSURE LEVEL	1	10	100	1	2	3	4	5	6	7	8	9	10
RESIDUE, IF TOTAL FED RETAINED	519	5186	51865	-	(2)	(3)	(4)	(5)	6	-	-	-	-
RESIDUE, 2 YEAR EXPOSURE	2	6	12	-	-	(3)	(4)	5	6	(7)	(8)	-	-
RESIDUE, 30 DAY RECOVERY	1	4	10	-	-	-	-	5	(6)	(7)	(8)	-	-
RESIDUE, 60 DAY RECOVERY	0.8	3	6	-	-	-	-	5	6	(7)	(8)	-	-

*AVERAGE PPM IN LIPID - ALL TISSUES

( )ELECTRON CAPTURE PEAKS GREATER THAN 5% OF TOTAL

MDNS 059768

OBJECTIVES

1. Progress report on laboratory biodegradation of PCBs.

2. Residue accumulation studies in fish, birds and mammals.

3. To show reduction in less biodegradable PCBs as a result of Monsanto actions on sales and products.

4. Progress report on Monsanto PCB plant effluent.

OBJECTIVES

1. Progress report on laboratory biodegradation of PCBs.

2. Residue accumulation studies in fish, birds and mammals.

3. To show reduction in less biodegradable PCBs as a result of Monsanto actions on sales and products.

MONSANTO PCB ACTIONS

1. Phase-out of PCB sales worldwide in all applications except Dielectrics.

2. Conversion of Dielectric Fluids to less biodegradable PCBs.

LESS BIODEGRADABLE PCB

Based on data presented:

- Less biodegradable PCB defined as Pentachloro- and higher PCB
- Pentachloro- and higher PCB determined by specific GLC/MS Test Method
- Pentachloro- and higher PCB are not totally non-biodegradable.

MONSANTO PCB SALES IN U.S.A.

(Million Pounds)

	Dielectrics	All Others	Total
1969	37.0	30.0	67.0
1970	40.5	33.5	74.0
1972 (Est.)	34.0	-	34.0

EFFECT OF PHASE-OUT POLICY

PCB sales reduced in U. S. A. by

30 to 33 million pounds,

or 45%.

PCB PRODUCT CHANGES IN DIELECTRICS

CAPACITORS

97% conversion to Aroclor 1016

TRANSFORMERS

Elimination of Aroclor 1260

PCBs USED IN CAPACITORS

PCB	Major Use Period	% Less Biodegradable PCB
Aroclor 1254	1930-1952	77.0
Aroclor 1242	1952-Sept. 1971	9.0
Aroclor 1016	Oct. 1971-	1.0

MONS 059776

Capacitor Fluids

Why Convert To Aroclor 1016?

1. 9-fold reduction in less biodegradable PCBs.

2. Minimum industry testing required.

Capacitor Fluids

What Is The Effect of Aroclor 1016?

U.S. Capacitor Fluid Sales (1972) : ~20 M Lbs.

If Aroclor Was	% Less Biodegradable PCBs Would Be
1254	15,400,000 pounds
1242	1,800,000
1016	200,000*

200

*This does not mean 200M lb. less biodegradable PCBs enter environment.

PCBs Present In Askarel Transformer Fluids

	% Less Biodegradable PCBs	Major Use Period
Aroclor 1260	100	1930-1972
Aroclor 1254	77	1969-
Aroclor 1242	9	1968-

PCB Changes In Transformer Fluids

1. Aroclor 1260 being phased out now.
2. Aroclor 1016 cannot be used.
3. Incineration of scrap PCBs - 1971.
4. PCBs used in tightly sealed systems.

TYPICAL % COMPOSITION OF POLYCHLORINATED BIPHENYL PRODUCTS*

HOMOLOG # Cl/BIPHENYL	AROCLOR 1221	AROCLOR 1016	AROCLOR 1242	AROCLOR 1254
0	11	<0.1	<0.1	<0.1
1	51	1	1	<0.1
2	32	20	16	<0.5
3	4	57	49	1
4	2	21	25	21
5	<0.5	1	8	48
6	ND	<0.1	1	23
7	ND	ND	<0.1	6
8	ND	ND	ND	ND

*PER CENT (W/W) BY GC/MASS USING AREA CORRECTION FACTORS BY HOMOLOG RESPONSE

NONE DETECTED, <0.01% = ND

MONS 059781