Many products containing PCBs have been marketed and used by manufacturers under various trade names. This list is not necessarily complete since many companies have gone out of business and information is no longer available. If in doubt, check with the manufacturer.

Manufacturer	*Country*	*Trade name*
Aeorvox	US	Hyvol
Allis-Chalmers	US	Chlorextol
American Corp.	US	Asbestol
Axel Electronics	—	
Bayer	Germany	Clophen
Caffaro	Italy	Dk
Caffaro	Italy	Fenclor
Caffaro	Italy	Inclor
Capacitor Specialists	US	
Chemko	Czechoslovakia	
Cornell Dubilier	US	Dykanol
Dings Co.	US	
Electrical Utilities Corp.	US	Eucarel
Electro Engineering Works	US	
Electromagnetic Filter Co.	US	
Envirotech Buell	US	
ESCO Mfg. Co.	US	Askarel*
Ferranti-Packard Ltd.	US	Askarel*
General Electric	US	Pyranol
Geneva Industries	US	
H.K. Porter	US	
Helona Corp.	US	
Hevi-Duty Electric	—	Askarel*
ITE Circuit Breaker	US	Non-Flammable Liquid
Jord Corp.	US	Clorphon
Kanegaluchi	Japan	Kanechlor
Kuhlman Electric	US	Sal-T-Kuhl
McGraw Edison	US	Elemex
Maloney Electric	US	
Monsanto	UK and US	Aroclor
Monsanto	UK and Japan	Santotherm FR
Monsanto	UK and Europe	Pyroclor
Monsanto	US	Therminol**
Monsanto	US	Pydraul***
Monsanto	US	Santovac 1 and 2
Niagara Transformer Corp.	US	Askarel*, EEC-18
P.R. Mallory & Co.	UK and US	Aroclor B
Power Zone Transformer	US	EEC-18
Prodolec	France	Phenoclor
Prodolec	France	Pyralene
R.C. Uptegraff	US	
R.F. Interonics	US	
Reliance Electric Co.	US	
Research-Cottrell	US	Askarel*
Sangamo Electric	US	Diaclor
Sorol	USSR	
Sprague Electric Co.	US	Chlorinol
Standard Transformer Corp.	US	
Stens Magnetics	US	
Tobe Deutschmann Labs.	US	
Universal Mfg. Corp.	US	Askarel*
Van Tran Electric	US	
Wagner Electric	US	No-Flamol
Westinghouse Electric	US	Inerteen
York Electronics	US	
—	US	Nepolin
—	Italy	Apirolio

*Askarel is the generic name used for nonflammable insulating liquid in transformers and capacitors.

**Various products used as heat transfer fluids, such as Therminol FR-O, were manufactured under this name.

***Various products used as hydraulic fluid, such as Pydraul A-200, were manufactured under this name.

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TABLE 2

Chlorine Content of Aroclor Preparations*

Aroclor	% Cl	Average number of Cl per molecule	Average molecular weight
1221	20.5–21.5	1.15	192
1232	31.5–32.5	2.04	221
1242	42	3.10	261
1248	48	3.90	288
1254	54	4.96	327
1260	60	6.30	372
1262	61.5–62.5	6.80	389
1268	68	8.70	453

*Manufacturers specifications.

TABLE 3

Use of PCB Classified to Grade of Aroclor

Current use of PCB	Grade of Aroclor used
Electrical capacitors	1016 (1221, 1254)
Electrical transformers	1242, 1254, 1260
Vacuum pumps	1248, 1254
Gas-transmission turbines	1221, 1242
Former use of PCB	
Hydraulic fluids	1232, 1242, 1248, 1254, 1260
Plasticizer in synthetic resins	1248, 1254, 1260, 1262, 1268
Adhesives	1221, 1232, 1242, 1248, 1254
Plasticizer in rubbers	1221, 1232, 1242, 1248, 1254, 1268
Heat transfer systems	1242
Wax extenders	1242, 1254, 1268
Dedusting agents	1254, 1260
Pesticide extenders, inks, lubicants, cutting oils	1254
Carbonless reproducing paper	1242

tions). Estimations on the Japanese production[30] give values of approximately 26 million pounds per year production. Of this, 40 to 50% is used for capacitors, 15% for transformer oils, 10 to 15% for heat transfer fluids, 5% for plasticizers, 15% for carbonless copying paper, and 5 to 10% for export. The annual consumption of PCB in Finland is about 250 metric tons.[16]

Preparation and Properties of PCB

PCB's are prepared industrially* by the chlorination of biphenyl with anhydrous chlorine and iron filings or ferric chloride as catalyst.[18,21] The crude product is generally purified to remove color, traces of hydrogen chloride, and catalyst which is usually achieved by treatment with alkali and distillation. The resulting product is a compli-

*The preparation of chlorobiphenyl mixtures from hexachlorocyclohexane is described in patents.[11,19,41] However, this process is not being used for any large-scale preparation of PCB.

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COMMERCIAL PCB FLUIDS

PCB-Based Hydraulic Fluids	Aroclor Content
Pydraul AC	57% - 1254
Pydraul 625	50% - 1260
Pydraul AC-28 (winter grade)	15% - 1254
Pydraul 280	
Pydraul A-200	33.3% - 1242; 66.6% - 1248
Pydraul 312	47.3% - 1242
Pydraul 230	3.0% - 1221; 54.7% - 1242
Pydraul 135	9.5% - 1232; 36.5% - 1242
Pydraul 540A	38.8% - 1242; 15.7% - 5442
Pydraul 540	38.8% - 1242
Turbinol 153	6.4% - 1221; 81.5% - 1242
Pydraul F9	52.5% - 1248
Pydraul 150	23.0% - 1242
Santovac 1	100.0% - 1258
Santovac 2	100.0% - 1254

PCB-Based Heat Transfer Fluids	Aroclor Content
Monsanto	
Therminol FR-0	80% - 1242
Therminol FR-0 (low temperature)	50% - 1242
Therminol FR-1	100% - 1242
Therminol FR-2	100% - 1248
Therminol FR-3	100% - 1254
Geneva Industries	Probably equivalent to 100% - 1242

PCT-Based Hydraulic Fluids	Aroclor Content
Pydraul F-9A	39.5% - 5432
Pydraul 150-A	14.8% - 5432
Pydraul A-200B	50.0% - 5432
Pydraul AC-A	53.5% - 5432
Pydraul AC-A (winter grade)	14.0% - 5442
Pydraul 625-A	50.0% - 5432
Pydraul 135-A	27.8% - 5432
Pydraul 312-A	31.1% - 5432
Pydraul 230-A	29.3% - 5432
Pydraul 540-B	42.0% - 5432
Pydraul 540-A	15.7% - 5442

POLYCHLORINATED BIPHENYL AND POLYCHLORINATED TERPHENYL PRODUCTS

MONSANTO INDUSTRIAL CHEMICALS COMPANY

1971 - 1975

Base Products

Aroclor 1016	Polychlorinated biphenyls (41.3% chlorine by weight)	100%
Aroclor 1221	Polychlorinated biphenyls (21% chlorine by weight)	100%
Aroclor 1232	Polychlorinated biphenyls (32% chlorine by weight)	100%
Aroclor 1242	Polychlorinated biphenyls (42% chlorine by weight)	100%
Aroclor 1248	Polychlorinated biphenyls (48% chlorine by weight)	100%
Aroclor 1254	Polychlorinated biphenyls (54% chlorine by weight)	100%
Aroclor 1260	Polychlorinated biphenyls (60% chlorine by weight)	100%
Aroclor 1262	Polychlorinated biphenyls (62% chlorine by weight)	100%
Aroclor 5060	Polychlorinated terphenyls (60% chlorine by weight)	100%
Aroclor 5432	Polychlorinated terphenyls (32% chlorine by weight)	100%
Aroclor 5442	Polychlorinated terphenyls (42% chlorine by weight)	100%
Aroclor 5460	Polychlorinated terphenyls (60% chlorine by weight)	100%

Hydraulics/Lubricants

Pydraul AC-A	Aroclor 5432	53.5%
Pydraul AC-A Winter Grade	Aroclor 5442	14.0%

Pydraul A-200		
	Aroclor 1242	33.3%
	Aroclor 1248	66.7%
Pydraul A-200B		
	Aroclor 5432	30.0%
Pydraul F-9A		
	Aroclor 5432	39.5%
Pydraul 135		
	Aroclor 1232	9.5%
	Aroclor 1242	36.5%
Pydraul 135A		
	Aroclor 5432	27.8%
Pydraul 150		
	Aroclor 1242	23.0%
Pydraul 150A		
	Aroclor 5432	14.8%
Pydraul 230		
	Aroclor 1221	3.0%
	Aroclor 1242	54.7%
Pydraul 230A		
	Aroclor 5432	29.3%
Pydraul 312		
	Aroclor 1242	47.3%
Pydraul 312A		
	Aroclor 5432	31.1%
Pydraul 540A		
	Aroclor 1242	38.8%
	Aroclor 5442	15.7%
Pydraul 540B		
	Aroclor 5432	42.0%
Pydraul 625A		
	Aroclor 5432	60.0%
Santovac 1		
	Aroclor 1248	100.0%
Santovac 2		
	Aroclor 1254	100.0%

Hydraulics/Lubricants (cont'd)

Turbinol 153	
Aroclor 1221	6.4%
Aroclor 1242	81.5%

Heat Transfer Fluids

Therminol FR-0	
Aroclor 1242	80.0%
Therminol FR-0 Low Temperature	
Aroclor 1242	50.0%
Therminol FR-1	
Aroclor 1242	100.0%
Therminol FR-2	
Aroclor 1248	100.0%
Therminol FR-3	
Aroclor 1254	100.0%

Transformer and Capacitor Fluids

Capacitor 21	
Aroclor 1221	100.0%
Inerteen PPO	
Aroclor 1260	60.6%
Inerteen 70-30	
Aroclor 1254	70.0%
Inerteen 100-42	
Aroclor 1242	100.0%
Inerteen 54201 A9	
Aroclor 1242	65.0%
Inerteen 54201 CM	
Aroclor 1242	99.9%
Inerteen 54201 KA	
Aroclor 1254	70.0%
Inerteen 54201 KJ	
Aroclor 1221	32.5%
Aroclor 1016	32.5%
MCS 1489	
Aroclor 1016	[illegible]

Transformer and Capacitor Fluids (cont'd)

Pyranol A13B1 (also Pyranol 1476)	
Aroclor 1254 electrical grade	100.0%
Pyranol A 13B 3B	
Aroclor 1260	45.0%
Pyranol A13B 3B-2	
Aroclor 1254	45.0%
Pyranol A13B 3B-3	
Aroclor 1254	60.0%

Plasticizer Applications

Aroclor 6037	
Aroclor 5460	37.0%
Aroclor 1221	63.0%
Aroclor 6040	
Aroclor 5460	40.0%
Aroclor 1221	60.0%
Aroclor 6050	
Aroclor 5460	50.0%
Aroclor 1221	50.0%
Aroclor 6062 (10% Xylene)	
Aroclor 6062	90.0%
Aroclor 6062	
Aroclor 5460	62.0%
Aroclor 1221	38.0%
Aroclor 6070 (10% Xylene)	
Aroclor 6070	90.0%
Aroclor 6070	
Aroclor 5460	70.0%
Aroclor 1221	30.0%
Aroclor 6090	
Aroclor 5460	90.0%
Aroclor 1221	10.0%
Aroclor 4465	
Aroclor 1262	50.0%
Aroclor 5460	50.0%
Montar 5	
Polychlorinated polyphenyl residue	100.0%