

Appendix: Florisil elution fractions and retention times for PCB congeners obtained using the semi-macro procedure (10 g)*

Congener, BZ Number, or Compound	Rtx-CLPesticide†			Rtx-CLPesticide2‡			Ortho Substitution	Recovery from 0% Florisil Fraction (%)	Recovery from 6% Florisil Fraction (%)
	Presence in Aroclors 1242, 1254, and 1260§	Retention Time (min)	Relative Retention Time (min)	Retention Time (min)	Relative Retention Time (min)				
1	0	5.969	0.218	7.416	0.234	M	77.1	68	
2	—	6.537	0.239	8.133	0.257	N	—	—	
3	0	6.59	0.241	8.253	0.261	N	<1	91.6	
10	0	6.719	0.245	8.792	0.278	M	<1	85.4	
4	+	6.774	0.247	8.867	0.280	D	17.7	82	
Tetrachloro- <i>m</i> -xylene surrogate spike	•	6.836	0.250	8.516	0.269	—	100	<1	
9	0	7.158	0.261	9.378	0.296	M	56.5	42.5	
7	0	7.164	0.262	9.387	0.296	M	88.2	<1	
6	+	7.464	0.273	9.85	0.311	M	94.5	<1	
5	0	7.547	0.276	10.132	0.320	M	<1	87.1	
8	+	7.553	0.276	10.06	0.318	M	94.8	<1	
19	0	7.825	0.286	10.89	0.344	D	70.3	29.9	
14	—	7.88	0.288	10.3	0.325	N	99	<1	
30#	—	7.882	0.288	10.722	0.339	M	88.7	<1	
α-Hexachlorocyclohexane		8.008	0.292	10.565	0.334		60	29.1	
4,4'-Dibromooctafluorobiphenyl surrogate spike		8.304	0.303	9.251	0.292	—	100	<1	
18	+	8.367	0.306	11.562	0.365	D	95.3	<1	
17	+	8.403	0.307	11.633	0.367	D	91.8	<1	
11	—	8.433	0.308	11.23	0.355	N	95.7	<1	
24	0	8.505	0.311	11.974	0.378	M	15.7	74.7	
12	0	8.526	0.311	11.486	0.363	N	<1	89.3	
13	0	8.55	0.312	11.529	0.364	N	78.2	32.2	
27	0	8.684	0.317	12.042	0.380	M	89.8	<1	
15	+	8.684	0.317	11.799	0.373	N	20.7	67.1	
Lindane		8.817	0.322	12.012	0.379			86.1	
32	+	8.848	0.323	12.449	0.393	M	90.6	<1	
16	+	8.912	0.325	12.598	0.398	D	37.3	62.1	
23#	—	9.026	0.330	12.526	0.396	M	94.6	<1	
54	—	9.045	0.330	13.241	0.418	D	101.2	<1	
β-Hexachlorocyclohexane		9.074	0.331	12.413	0.392			92.6	
29	0	9.114	0.333	12.673	0.400	M	89.6	<1	
34	0	9.189	0.336	12.564	0.397	M	90.2	<1	
50#	—	9.368	0.342	13.342	0.421	D	96.3	<1	
26	+	9.436	0.345	13.053	0.412	M	92.3	<1	
25	0	9.468	0.346	13.174	0.416	M	96.3	<1	
δ-Hexachlorocyclohexane		9.584	0.350	13.765	0.435			81.9	
31	+	9.601	0.351	13.472	0.425	M	91.9	<1	
28	+	9.663	0.353	13.555	0.428	M	96.1	<1	
53	0	9.83	0.359	14.145	0.447	D	100.1	<1	
21#	—	9.843	0.359	14.081	0.445	M	44.9	56.2	

*25 μL of PCB congeners at 10 ng/μL; the final volume was 10 mL, 30 μL was injected. Analyses performed in March 2002.

†Analysis using electron-capture detector 1A.

‡Analysis using electron-capture detector 12.

§ + signifies congener > 1.0 wt%; 0 signifies congener at < 1.0 wt%; — signifies congener not present at > 0.05 wt%; • signifies pesticides and surrogate spikes.

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Congener, BZ Number, or Compound	Rtx-CLPesticide†			Rtx-CLPesticide2‡			Ortho Substitution	Recovery from 0% Florisil Fraction (%)	Recovery from 6% Florisil Fraction (%)
	Presence in Aroclors 1242, 1254, and 1260§	Retention Time (min)	Relative Retention Time (min)	Retention Time (min)	Relative Retention Time (min)				
51	0	9.951	0.363	14.397	0.455	D	100.1	<1	
33	+	10.068	0.368	14.184	0.448	M	94.8	<1	
20	0	10.076	0.368	14.25	0.450	M	90.4	2.3	
45	+	10.142	0.370	14.855	0.469	D	92.3	<1	
Heptachlor		10.219	0.373	13.952	0.441		84.7		
22	+	10.267	0.375	14.689	0.464	M	76.7	22.4	
69	-	10.535	0.385	14.88	0.470	M	92.5	<1	
46	0	10.537	0.385	15.447	0.488	D	93.8	<1	
36#	-	10.604	0.387	14.503	0.458	N	88.6	<1	
52	+	10.687	0.390	15.185	0.480	D	95.4	<1	
65#	-	10.742	0.392	15.595	0.492	M	72.4	29.4	
43#	-	10.759	0.393	15.379	0.486	D	93.4	<1	
49	+	10.769	0.393	15.402	0.486	D	95.3	<1	
62#	-	10.77	0.393	15.662	0.495	M	94	<1	
39#	-	10.77	0.393	15.048	0.475	N	93.4	1.3	
75	0	10.812	0.395	15.48	0.489	M	99.2	<1	
73	-	10.812	0.395	15.129	0.478	M	99.3	<1	
47	+	10.875	0.397	15.57	0.492	D	91.7	<1	
48	+	10.903	0.398	15.629	0.494	D	92.4	<1	
104	-	10.915	0.399	16.062	0.507	D	94.5	<1	
38	-	11.113	0.406	15.595	0.492	N	58.1	45.4	
Aldrin		11.234	0.410	15.543	0.491		86.2		
44	+	11.472	0.419	16.603	0.524	D	97.2	<1	
59	0	11.49	0.420	16.586	0.524	M	94.9	<1	
42	+	11.573	0.423	16.824	0.531	D	93	<1	
35	0	11.666	0.426	16.378	0.517	N	10	76.9	
96#	-	11.765	0.430	17.667	0.558	D	91.6	<1	
64	+	11.789	0.430	17.286	0.546	M	95.4	<1	
37	+	11.878	0.434	16.909	0.534	N	5.8	82.2	
41	0	11.878	0.434	17.4	0.549	D	93.3	<1	
72#	-	11.894	0.434	16.557	0.523	M	90.4	<1	
103	-	11.94	0.436	17.206	0.543	D	82.7	<1	
71	0	11.957	0.437	17.253	0.545	M	97.2	<1	
68#	-	11.967	0.437	16.858	0.532	M	96.1	<1	
100	-	12.157	0.444	17.594	0.556	D	100.2	<1	
57#	-	12.332	0.450	17.469	0.552	M	98.6	<1	
40	0	12.349	0.451	18.124	0.572	D	28.7	64.5	
67	0	12.49	0.456	17.734	0.560	M	97.1	<1	
61#	-	12.612	0.461	18.333	0.579	M	98.2	<1	
63	0	12.621	0.461	18.163	0.574	M	93.9	<1	

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† Analysis using electron-capture detector 1A.

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Congener, BZ Number, or Compound	Rtx-CLPesticide†			Rtx-CLPesticide2‡			Ortho Substitution	Recovery from 0% Florisil Fraction (%)	Recovery from 6% Florisil Fraction (%)
	Presence in Aroclors 1242, 1254, and 1260§	Retention Time (min)	Relative Retention Time (min)	Retention Time (min)	Relative Retention Time (min)				
94#	—	12.624	0.461	18.308	0.578	D	96	<1	
58#	—	12.749	0.466	18.097	0.571	M	93.1	<1	
74	+	12.791	0.467	18.378	0.580	M	96.3	<1	
93	—	12.804	0.468	18.856	0.595	D	95.5	<1	
98#	—	12.863	0.470	18.791	0.593	D	90.8	<1	
102#	—	12.904	0.471	18.779	0.593	D	97.9	<1	
88#	—	12.937	0.472	19.062	0.602	D	95.8	<1	
95	+	12.978	0.474	19.001	0.600	D	93.1	<1	
70	+	13.159	0.481	18.772	0.593	M	92.8	<1	
121	—	13.185	0.481	18.467	0.583	M	91.9	<1	
155	—	13.185	0.481	19.235	0.607	D	96.2	<1	
76#	—	13.196	0.482	18.858	0.595	M	92.6	<1	
91	0	13.2	0.482	19.434	0.614	D	95.4	<1	
66	+	13.272	0.485	19.029	0.601	M	97.3	<1	
80	—	13.474	0.492	18.401	0.581	N	93.8	<1	
55#	—	13.596	0.496	19.632	0.620	M	94.3	<1	
135	+	13.604	0.497	22.794	0.720	D	96	<1	
Heptaepoxide		13.718	0.501	18.858	0.595			91.4	
92	0	13.918	0.508	19.741	0.623	D	96.4	<1	
60	+	13.953	0.509	20.196	0.638	M	93.9	<1	
84	+	13.953	0.509	20.451	0.646	D	94.2	<1	
90	—	14.073	0.514	20.076	0.634	D	99.2	<1	
89#	—	14.098	0.515	20.554	0.649	D	93.9	<1	
56	+	14.134	0.516	20.247	0.639	M	93.7	6.3	
101	+	14.141	0.516	20.045	0.633	D	96.2	<1	
150#	—	14.252	0.520	20.708	0.654	D	95.1	<1	
γ-Chlordane		14.284	0.522	19.884	0.628		2	90.9	
99	+	14.307	0.522	20.328	0.642	D	97.3	<1	
113#	—	14.384	0.525	20.207	0.638	M	98.3	<1	
152#	—	14.617	0.534	21.145	0.668	D	89.7	<1	
112#	—	14.674	0.536	20.733	0.655	M	93.5	<1	
119	0	14.719	0.537	20.692	0.653	M	96.5	<1	
109#	—	14.749	0.539	20.853	0.658	M	94.2	<1	
116#	—	14.818	0.541	21.27	0.672	M	96.5	<1	
79	—	14.906	0.544	20.554	0.649	N	43.9	48.9	
α-Chlordane		14.915	0.545	20.629	0.651		30.3	51.9	
145#	—	14.917	0.545	21.453	0.677	D	96.8	<1	
83	0	14.978	0.547	21.499	0.679	D	92.2	<1	
86#	—	15.1	0.551	21.324	0.673	D	99.9	<1	
117	0	15.124	0.552	21.464	0.678	M	98.9	<1	

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	Presence in Aroclors 1242, 1254, and 1260§	Retention Time (min)	Relative Retention Time (min)	Retention Time (min)	Relative Retention Time (min)				
115	0	15.207	0.555	22.509	0.711	M	94.7	<1	
97	+	15.219	0.556	21.362	0.675	D	96.2	<1	
148#	-	15.324	0.560	21.27	0.672	D	97.9	<1	
136	+	15.356	0.561	21.943	0.693	D	96.8	<1	
78	-	15.399	0.562	21.108	0.667	N	34.9	56.2	
87	+	15.428	0.563	21.622	0.683	D	98.3	<1	
125#	-	15.485	0.565	21.425	0.677	M	96.6	<1	
1,1-Dichloro-2,2-bis(p-chlorophenyl)ethylene		15.503	0.566	21.597	0.682		100.8		
111#	-	15.555	0.568	21.092	0.666	M	97.2	<1	
Endosulfan I		15.57	0.569	20.831	0.658				
85	+	15.626	0.571	21.853	0.690	D	98.1	<1	
154	-	15.708	0.574	21.64	0.683	D	97.7	<1	
81	-	15.759	0.575	21.64	0.683	N	<1	68.3	
120#	-	15.798	0.577	21.357	0.674	M	92.4	<1	
110	+	16.035	0.586	22.101	0.698	M	97.2	<1	
151	+	16.281	0.595	22.246	0.702	D	96.8	<1	
144	0	16.489	0.602	22.443	0.709	D	96.7	<1	
77	0	16.496	0.602	22.206	0.701	N	<1	86.8	
82	+	16.61	0.607	22.749	0.718	D	91.6	8.5	
147	-	16.61	0.607	22.65	0.715	D	96.1	<1	
Dieldrin		16.732	0.611	22.035	0.696				
139#	-	16.819	0.614	22.801	0.720	D	95	<1	
149	+	17.005	0.621	22.858	0.722	D	95.3	<1	
140#	-	17.148	0.626	23.011	0.727	D	96.5	<1	
124	0	17.155	0.626	22.606	0.714	M	100.9	<1	
108/107#	-	17.17	0.627	22.77	0.719	M	92.7	<1	
109/107	0	17.251	0.630	21.099	0.666	M	95.4	<1	
123	0	17.322	0.633	22.882	0.723	M	97.3	<1	
106#	-	17.348	0.633	22.945	0.725	M	92.8	<1	
142#	-	17.494	0.639	23.419	0.740	D	98	<1	
143#	-	17.494	0.639	23.267	0.735	D	99.5	<1	
188	-	17.494	0.639	23.267	0.735	D	99.5	<1	
134	0	17.515	0.640	23.342	0.737	D	98.2	<1	
118	+	17.515	0.640	22.982	0.726	M	97.4	<1	
131	0	17.742	0.648	23.517	0.743	D	96.7	<1	
114	0	17.799	0.650	23.445	0.740	M	97.9	<1	
184#	-	17.896	0.653	23.542	0.743	D	94	<1	
Endrin		17.908	0.654	23.197	0.733			47.3	
133#	-	17.933	0.655	23.146	0.731	D	96.6	<1	
165	-	18.124	0.662	23.199	0.733	M	101.1	<1	

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	Presence in Aroclors 1242, 1254, and 1260§	Retention Time (min)	Relative Retention Time (min)	Retention Time (min)	Relative Retention Time (min)				
146	+	18.252	0.666	23.405	0.739	D	92.9	<1	
161#	-	18.256	0.667	23.344	0.737	M	98.5	<1	
122	0	18.368	0.671	23.664	0.747	M	102	<1	
132	+	18.54	0.677	24.105	0.761	D	97	<1	
153	+	18.566	0.678	23.623	0.746	D	97.5	<1	
179	+	18.756	0.685	24.211	0.765	D	97.1	<1	
168#	-	18.774	0.686	23.709	0.749	M	96.5	<1	
2,2-bis(<i>p</i> -Chlorophenyl)-1,1-dichloroethane		18.805	0.687	23.821	0.752		1.9	87	
105	+	19.011	0.694	24.201	0.764	M	97.7	<1	
176	0	19.163	0.700	24.452	0.772	D	98.2	<1	
Endosulfan II		19.169	0.700	23.984	0.757				
141	+	19.258	0.703	24.174	0.763	D	95.9	<1	
127	-	19.319	0.705	23.818	0.752	N	3.2	83.4	
137	0	19.493	0.712	24.452	0.772	D	98	<1	
186#	-	19.541	0.714	24.782	0.783	D	96	<1	
130	0	19.749	0.721	24.614	0.777	D	101	<1	
160#	-	19.834	0.724	24.674	0.779	M	99.2	<1	
163	+	20.008	0.731	24.734	0.781	M	101	<1	
138	+	20.022	24.811	24.811	0.783	D	98.1	<1	
158	0	20.121	0.735	24.833	0.784	M	97.6	<1	
164	0	20.151	0.736	24.759	0.782	D	94.8	<1	
178	0	20.192	0.737	24.759	0.782	D	94.5	<1	
Dichlorodiphenyltrichloroethane		20.241	0.739	24.834	0.784		83.5	3.2	
166#	-	20.334	0.742	25.222	0.796	M	91.6	<1	
129	0	20.404	0.745	25.13	0.794	D	97.7	<1	
175	0	20.43	0.746	24.97	0.788	D	99	<1	
182#	-	20.573	0.751	25.088	0.792	D	93.1	<1	
187	+	20.589	0.752	25.095	0.792	D	96.8	<1	
183	+	20.795	0.759	25.262	0.798	D	96	<1	
126	-	20.867	0.762	25.16	0.794	N	<1	88.3	
159#	-	20.954	0.765	25.115	0.793	M	94.2	<1	
185	0	21.152	0.772	25.6	0.808	D	98.5	<1	
Endrin aldehyde		21.21	0.774	25.136	0.794				
128	+	21.279	0.777	25.9	0.818	D	99.6	<1	
162#	-	21.29	0.777	25.375	0.801	M	99.1	<1	
181	0	21.451	0.783	25.962	0.820	D	99.4	<1	
167	0	21.509	0.785	25.6	0.808	M	98.8	<1	
202	0	21.602	0.789	25.986	0.821	D	100.8	<1	
174	+	21.62	0.789	25.984	0.821	D	98.1	<1	
177	+	21.775	0.795	26.191	0.827	D	96.3	<1	

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201/200	0	21.924	0.801	26.269	0.830	D	101.7	<1	
204#	—	21.954	0.802	26.298	0.830	D	95.1	<1	
171	+	21.959	0.802	26.344	0.832	D	96.7	<1	
173	0	22.105	0.807	26.493	0.837	D	98.1	<1	
197	0	22.222	0.811	26.505	0.837	D	95.2	<1	
156	+	22.298	0.814	26.392	0.833	M	100.4	<1	
192#	—	22.533	0.823	26.361	0.832	M	95.8	<1	
Methoxychlor		22.534	0.823	26.958	0.851			82.3	
157	0	22.542	0.823	26.625	0.841	M	96.7	<1	
172	0	22.604	0.825	26.505	0.837	D	96.5	<1	
200/199	0	22.772	0.832	27.047	0.854	D	102.6	<1	
180	+	22.824	0.833	26.703	0.843	D	98.8	<1	
Endosulfate		22.889	0.836	25.976	0.820				
193	0	22.983	0.839	26.762	0.845	M	97.5	<1	
191	+	23.089	0.843	26.893	0.849	M	98	<1	
Dibutylchlorendate (interference)		23.28	0.850	26.817	0.847				
198#	—	23.753	0.867	27.517	0.869	D	96.5	<1	
190	0	23.768	0.868	27.643	0.873	M	96.5	<1	
170	+	23.772	0.868	27.708	0.875	D	98.3	<1	
Endrin ketone		23.772	0.868	27.464	0.867				
169	—	23.855	0.871	27.385	0.865	N	<1	85.8	
199/201	0	23.915	0.873	27.675	0.874	D	99.6	<1	
Dibutylchlorendate surrogate spike		24.013	0.877	27.202	0.859	—	<1	<1	
203	+	24.034	0.878	27.796	0.878	D	100.2	<1	
196	0	24.083	0.879	27.851	0.879	D	96.3	<1	
208	0	24.643	0.900	28.455	0.899	D	98.8	<1	
189	0	24.833	0.907	28.326	0.894	M	98.8	<1	
207	—	24.897	0.909	28.707	0.906	D	97.6	<1	
195	0	24.913	0.910	28.772	0.909	D	98.5	<1	
194	+	25.703	0.939	29.17	0.921	D	100.4	<1	
205	0	25.85	0.944	29.251	0.924	M	97.1	<1	
206	0	26.498	0.968	29.967	0.946	D	97.6	<1	
Decachlorobiphenyl surrogate spike		26.997	0.986	30.583	0.966		97.7		
209	—	27.003	0.986	30.588	0.966	D	96.4	<1	
2,2',4,4',5,5'-Hexabromobiphenyl surrogate spike		27.386	1.000	31.668	1.000	—	100	<1	

*25 µL of PCB congeners at 10 ng/µL; the final volume was 10 mL, 30 µL was injected. Analyses performed in March 2002.

† Analysis using electron-capture detector 1A.

‡ Analysis using electron-capture detector 12.

§ + signifies congener > 1.0 wt%; 0 signifies congener at < 1.0 wt%; — signifies congener not present at > 0.05 wt%; • signifies pesticides and surrogate spikes.

|| Ortho substitution: N = non-ortho; M = mono-ortho; D = di-ortho or more.

Signifies congener identification from Restek's congener retention time table.