Congener Number	Chlorine Substitution Pattern (IUPAC)	Aroclor Composition (Wt %) Frame et al. (1996) Data A1016	A1242	A1248a	A1248g	A1254a	A1254g	A1260
1	2	0.52	0.54	0.05	0.02	0.02		0.02
2	3	0.02	0.03					
3	4	0.15	0.18	0.01				
4	2,2'	3.62	3.08	0.32	0.04	0.02	0.06	0.02
5	2,3	0.17	0.14	trace				
6	2,3'	1.64	1.43	0.13	trace	0.01	0.02	0.01
7	2,4	0.29	0.26	0.02				
8	2,4'	8.29	7.05	0.81	0.26	0.05	0.13	0.04
9	2,5	0.58	0.5	0.04				
10	2,6	0.23	0.2					
11	3,3'							
12	3,4	0.07	0.06					
13	3,4'	0.24	0.22	0.02				
14	3,5							
15	4,4'	2.4	2.1	0.22	0.06	0.01	0.03	0.01
16	2,2',3	3.88	3.14	1.04	0.71	0.02	0.09	0.01
17	2,2',4	3.98	3.13	1.05	0.93	0.02	0.08	0.02
18	2,2',5	10.86	8.53	4.29	3.29	0.08	0.25	0.05
19	2,2',6	0.99	0.8	0.22	0.14			
20	2,3,3'	0.88	0.72	0.14	0.08			
21	2,3,4	nm/bp	nm/bp					
22	2,3,4'	3.5	2.84	1.33	1.38	0.02	0.04	0.01
23	2,3,5	0.01	0.01		trace			
24	2,3,6	0.16	0.13	0.01				
25	2,3',4	0.72	0.59	0.11	0.04			
26	2,3',5	1.57	1.28	0.4	0.23		0.03	
27	2,3',6	0.51	0.41	0.12	0.07			
28	2,4,4'	8.5	6.86	3.59	5.57	0.06	0.19	0.03
29	2,4,5	0.1	0.08	trace	0.01			
30	2,4,6	trace						
31	2,4',5	9.32	7.34	5.07	5.47	0.11	0.28	0.04
32	2,4',6	2.37	1.9	0.88	0.93	0.01	0.05	0.01
33	2,3',4'	6.21	5.01	2.23	2.21	0.05	0.16	0.03
34	2,3',5'	0.03	0.02	trace	trace			
35	3,3',4	0.05	0.08	trace				
36	3,3',5							
37	3,4,4'	1.02	2.03	0.79	0.95	0.01	0.07	0.01
38	3,4,5							
39	3,4',5							
40	2,2',3,3'	0.58	0.76	1.13	0.92	0.15	0.12	
41	2,2',3,4	0.76	0.68	0.77	0.75	0.02	0.01	
42	2,2',3,4'	1.59	1.19	1.67	1.79	0.09	0.15	0.01
43	2,2',3,5	0.28	0.18	0.3	0.19			
44	2,2',3,5'	4.47	3.55	6.31	5.09	0.67	2.31	0.03
45	2,2',3,6	1.23	0.89	1.09	0.91	0.02	0.05	
46	2,2',3,6'	0.49	0.36	0.47	0.39			
47	2,2',4,4'	1.26	0.93	1.49	2.41	0.07	0.14	
48	2,2',4,5	1.61	1.18	1.66	1.54	0.05	0.12	
49	2,2',4,5'	3.35	2.53	4.12	4.17	0.26	1.1	0.01
50	2,2',4,6	0.01	trace		0.01			
51	2,2',4,6'	0.32	0.23	0.3	0.31			
52	2,2',5,5'	4.63	3.53	6.93	5.58	0.83	5.38	0.24
53	2,2',5,6'	0.95	0.71	1.05	0.88	0.04	0.12	
54	2,2',6,6'	0.01	0.01		0.01			
55	2,3,3',4		0.1	0.06	0.05			
56	2,3,3',4'	0.07	1.81	3.16	3.19	1.7	0.55	0.02
57	2,3,3',5	0.01	0.02	0.02	0.02			
58	2,3,3',5'							
59	2,3,3',6	0.41	0.32	0.37	0.23	0.01	0.02	
60	2,3,4,4'	0.04	1.18	1.85	2.67	0.95	0.18	0.04
61	2,3,4,5							
62	2,3,4,6							
63	2,3,4',5	0.06	0.12	0.17	0.19	0.07	0.02	
64	2,3,4',6	1.87	1.7	3.01	3.32	0.36	0.59	0.01
65	2,3,5,6							
66	2,3',4,4'	0.39	3.39	5.84	7.22	3.56	1.01	0.02
67	2,3',4,5	0.06	0.16	0.13	0.1	0.01		
68	2,3',4,5'							
69	2,3',4,6	trace						
70	2,3',4',5	0.59	3.73	7.28	7.39	6.83	3.49	0.04
71	2,3',4',6	1.16	1.03	1.67	1.86	0.11	0.15	0.01
72	2,3',5,5'	trace	0.01	0.02	0.01			
73	2,3',5',6	trace	trace					
74	2,4,4',5	0.33	1.81	3.14	4.67	2.19	0.84	0.05
75	2,4,4',6	0.06	0.04	0.08	0.08			
76	2,3',4',5'		0.08	0.13	0.13	0.03	0.02	
77	3,3',4,4'		0.31	0.41	0.52	0.2	0.03	
78	3,3',4,5							
79	3,3',4',5							
80	3,3',5,5'							
81	3,4,4',5		0.01	0.01	0.02	trace		
82	2,2',3,3',4		0.26	0.81	0.62	1.53	1.11	
83	2,2',3,3',5		0.11	0.26	0.2	0.56	0.48	0.01
84	2,2',3,3',6	0.05	0.41	1.26	0.91	1.58	2.32	0.11
85	2,2',3,4,4'		0.31	0.98	1.14	2.49	1.28	0.01
86	2,2',3,4,5		0.03	0.11	0.09	0.1	0.06	
87	2,2',3,4,5'		0.46	1.45	1.11	3.41	3.99	0.41
88	2,2',3,4,6		trace	0.02	0.02			
89	2,2',3,4,6'		0.09	0.2	0.17	0.11	0.09	
90	2,2',3,4',5			nm/bp	nm/bp	nm/bp	nm/bp	
91	2,2',3,4',6	0.06	0.21	0.63	0.56	0.53	0.93	0.01
92	2,2',3,5,5'		0.09	0.38	0.25	0.57	1.29	0.3
93	2,2',3,5,6		trace	0.04	0.03			
94	2,2',3,5,6'		0.01	0.03	0.02	0.01	0.02	
95	2,2',3,5',6	0.31	0.61	1.96	1.43	1.84	6.25	2.45
96	2,2',3,6,6'	0.04	0.03	0.08	0.06	0.01	0.04	
97	2,2',3,4',5'		0.38	1.22	0.97	2.78	2.62	0.09
98	2,2',3,4',6'							
99	2,2',4,4',5	0.01	0.46	1.47	1.81	4.53	3.02	0.04
100	2,2',4,4',6							
101	2,2',4,5,5'	0.04	0.69	2.22	1.89	5.49	8.02	3.13
102	2,2',4,5,6'	0.04	0.07	0.19	0.17	0.09	0.15	
103	2,2',4,5',6			0.02	0.01		0.03	
104	2,2',4,6,6'							
105	2,3,3',4,4'	trace	0.47	1.6	1.45	7.37	2.99	0.22
106	2,3,3',4,5							
107	2,3,3',4',5		0.06	0.18	0.13	0.78	0.37	0.01
108	2,3,3',4,5'							
109	2,3,3',4,6							
110	2,3,3',4',6		0.83	2.97	2.55	8.42	9.29	1.33
111	2,3,3',5,5'							
112	2,3,3',5,6							
113	2,3,3',5',6						0.01	
114	2,3,4,4',5		0.04	0.12	0.12	0.5	0.18	
115	2,3,4,4',6		0.04	0.11	0.11	0.37	0.2	
116	2,3,4,5,6							
117	2,3,4',5,6		0.03	0.09	0.1	0.19	0.23	
118	2,3',4,4',5		0.66	2.29	2.35	13.59	7.35	0.48
119	2,3',4,4',6			0.06	0.06	0.12	0.08	
120	2,3',4,5,5'							
121	2,3',4,5',6							
122	2,3,3',4',5'		0.01	0.06	0.05	0.25	0.1	
123	2,3',4,4',5'		0.03	0.07	0.08	0.32	0.15	
124	2,3',4',5,5'		0.03	0.1	0.07	0.47	0.29	0.01
125	2,3',4',5',6		0.02	0.04	0.03	0.03	0.02	
126	3,3',4,4',5			trace	trace	0.02	trace	
127	3,3',4,5,5'							
128	2,2',3,3',4,4'		0.02	0.12	0.08	1.71	1.42	0.53
129	2,2',3,3',4,5			0.02		0.39	0.38	0.14
130	2,2',3,3',4,5'			0.04	0.01	0.5	0.6	0.22
131	2,2',3,3',4,6					0.14	0.19	0.07
132	2,2',3,3',4,6'		0.04	0.15	0.14	1.5	2.29	2.9
133	2,2',3,3',5,5'						0.11	0.07
134	2,2',3,3',5,6				0.01	0.2	0.37	0.34
135	2,2',3,3',5,6'			0.04	0.04	0.28	0.61	1.08
136	2,2',3,3',6,6'			0.05	0.06	0.24	0.7	1.46
137	2,2',3,4,4',5			0.03	0.02	0.52	0.42	0.02
138	2,2',3,4,4',5'		0.1	0.38	0.41	5.95	5.8	6.54
139	2,2',3,4,4',6					0.14	0.15	
140	2,2',3,4,4',6'							
141	2,2',3,4,5,5'		0.01	0.07	0.09	0.69	0.98	2.62
142	2,2',3,4,5,6							
143	2,2',3,4,5,6'							
144	2,2',3,4,5',6				0.01	0.12	0.24	0.61
145	2,2',3,4,6,6'							
146	2,2',3,4',5,5'			0.04	0.05	0.45	0.67	1.15
147	2,2',3,4',5,6					0.02	0.1	
148	2,2',3,4',5,6'							
149	2,2',3,4',5',6		0.06	0.24	0.33	1.82	3.65	8.75
150	2,2',3,4',6,6'							
151	2,2',3,5,5',6			0.04	0.08	0.22	0.69	3.04
152	2,2',3,5,6,6'							
153	2,2',4,4',5,5'		0.06	0.23	0.43	3.29	3.77	9.39
154	2,2',4,4',5,6'					0.02	0.04	
155	2,2',4,4',6,6'							
156	2,3,3',4,4',5		0.01	0.06	0.04	1.13	0.82	0.52
157	2,3,3',4,4',5'			0.01	trace	0.3	0.19	0.02
158	2,3,3',4,4',6		0.01	0.04	0.04	0.9	0.81	0.58
159	2,3,3',4,5,5'							
160	2,3,3',4,5,6							
161	2,3,3',4,5',6							
162	2,3,3',4',5,5'							
163	2,3,3',4',5,6		0.01	0.06	0.08	0.7	1.03	2.42
164	2,3,3',4',5',6			0.02	0.03	0.31	0.4	0.69
165	2,3,3',5,5',6							
166	2,3,4,4',5,6					0.05	0.05	
167	2,3',4,4',5,5'			0.01	0.01	0.35	0.27	0.19
168	2,3',4,4',5',6							
169	3,3',4,4',5,5'							
170	2,2',3,3',4,4',5				0.08	0.35	0.52	4.11
171	2,2',3,3',4,4',6					0.08	0.14	1.11
172	2,2',3,3',4,5,5'					0.03	0.07	0.7
173	2,2',3,3',4,5,6							0.1
174	2,2',3,3',4,5,6'				0.08	0.14	0.34	4.96
175	2,2',3,3',4,5',6							0.17
176	2,2',3,3',4,6,6'					0.01	0.04	0.59
177	2,2',3,3',4,5',6'				0.03	0.08	0.2	2.57
178	2,2',3,3',5,5',6						0.03	0.83
179	2,2',3,3',5,6,6'				0.02	0.02	0.1	2.03
180	2,2',3,4,4',5,5'			0.02	0.21	0.42	0.67	11.38
181	2,2',3,4,4',5,6							0.01
182	2,2',3,4,4',5,6'							
183	2,2',3,4,4',5',6				0.06	0.09	0.18	2.41
184	2,2',3,4,4',6,6'							
185	2,2',3,4,5,5',6							0.55
186	2,2',3,4,5,6,6'							
187	2,2',3,4',5,5',6				0.09	0.09	0.25	5.4
188	2,2',3,4',5,6,6'							
189	2,3,3',4,4',5,5'					0.01	0.01	0.1
190	2,3,3',4,4',5,6					0.05	0.07	0.82
191	2,3,3',4,4',5',6							0.17
192	2,3,3',4,5,5',6							
193	2,3,3',4',5,5',6						0.03	0.53
194	2,2',3,3',4,4',5,5'						0.01	2.07
195	2,2',3,3',4,4',5,6							0.84
196	2,2',3,3',4,4',5,6'							1.09
197	2,2',3,3',4,4',6,6'							0.07
198	2,2',3,3',4,5,5',6							0.1
199	2,2',3,3',4,5,5',6'						0.01	1.78
200	2,2',3,3',4,5,6,6'							0.25
201	2,2',3,3',4,5',6,6'							0.24
202	2,2',3,3',5,5',6,6'							0.33
203	2,2',3,4,4',5,5',6						0.02	1.4
204	2,2',3,4,4',5,6,6'							
205	2,3,3',4,4',5,5',6							0.1
206	2,2',3,3',4,4',5,5',6					0.03	0.03	0.53
207	2,2',3,3',4,4',5,6,6'							0.05
208	2,2',3,3',4,5,5',6,6'					0.01	0.01	0.13
209	2,2',3,3',4,4',5,5',6,							nm/bp

Dioxin-like PCBs. (Van den Berg et al., 1998.)

Source: Spreadsheet (aroclor_frame.xls) condensed by G.M. Frame from research results reported in: Frame, G. M., Cochran, J. W., and Boewadt, S.S. Complete PCB congener distributions for 17 Aroclor mixtures determined by 3 HRGC systems optimized for compr

Additional Notes:

Blank values indicate "not detected."
Values shown as "trace" indicate results above the detection limit (clearly present), but below the level of quantitation, defined here as 0.01%. These values are represented in the complete PCB ID dataset as "0.001" in order to be compatible with the num
Values shown as "nm/bp" indicate congeners which were "not measured" due to limitations of the methods used, but which were nevertheless "believed present" based on other studies. These values are represented in the complete PCB ID dataset as "0.002" in o
For more information on Aroclor mixtures, including a list of Trade Names and other synonyms, see the Definitions page.
These data are included in the complete PCB ID dataset, available on the Download page.
The source spreadsheet, as provided by G.M. Frame, is also available on the Download page.**Note** that, when the data were extracted from this spreadsheet for presentation on this page and for incorporation into the Complete Data Set, three congener numbers
Additional notes on the seven data sets:
A1016 -- "Lot A2"
A1242 -- "Mean 3 Lots"
A1248a -- "Lot A3.5"
A1248g -- "Lot G3.5"
A1254a -- "Lot A4"
A1254g -- "Lot G4"
A1260 -- "Mean 3 Lots"

Frame et al., 1996. G. M. Frame, J. W. Cochran, and S.S. Boewadt. Complete PCB congener distributions for 17 Aroclor mixtures determined by 3 HRGC systems optimized for comprehensive, quantitative, congener-specific analysis. J. High Resol. Chromatogr., 1

	SG-01 Skamokawa Vista Park RM 32	SG-02 Stella RM 56	SG-16 Willow Grove RM 57	SG-35 Longview WA West of CR Bridge RM 66	SG-36 Old Mouth of the Cowlitz RM 68	SG-03 Kalama RM 75	SG-27 St. Helens Sand Island RM 84	SG-04 Woodland RM 86	SG-30 Mouth of Multnomah Channel RM 87	SG-28 Mouth of Lake River RM 88	SG-29 Head of Batchlor Slough RM 92	SG-26 End of NW Lower River Road RM 96	SG-25 Vancouver Flushinhg Channel RM 101	SG-12 WA side opposite Willamette River Mouth RM 101	SG-13 Vanalco RM 103	RM 104	SG-15 Hayden Island RM 104	SG-21 Hayden Island RM 105	SG-22 Under South end of I-5 Bridge RM 107	SG-19 Tomhawk Island Columbia River RM 108	SG-20 Tomhawk Island Oregon Slough RM 108	SG-20A Tomhawk Island Oregon Slough RM 108	SG-24 Vancouver Historic Site Boatramp RM 108	SG-23 Wintler Park Vancouver RM 110	SG-34 Lemon Island DS RM 111	SG-33 Government Island DS of I-205 RM 112.5	SG-32 Sand Island RM 117	SG-07 Lady Island RM 119	SG-06 Shallow Water across from Camas RM 122	SG-05 Downstream Reed Is RM 124	SG-08 Rooster Rock RM 129	SG-17 Bridal Veil RM 133	SG-18 Warrendale RM 142	WR-09 Willamette River DS of Columbia Slough RM 1E	WR-10 River across from Columbia Slough RM 1W	WR-10A Duplicate RM 1W	WR-11 Sauvie Island RM 2W	WR-31 US Moorings RM 6.5
1													160	280	17000																							
2																																						
3															2000																							
4	140	110	100			230	130	350	320		400	1400	5100	4300	84000																			210	250	240	610	230
5						130		180			180	420	3200	1400	65000	140	210	400	320																		140	
6												410	3400	790	12000																							
7															1400																							
8						130		180			180	420	3200	1400	65000	140	210	400	320																		140	
9															1400																							
10	140	110	100			230	130	350	320		400	1400	5100	4300	84000																			210	250	240	610	230
11	2300	1400	1100	1500	1600	3200	1600	2500	520		1500	1500	1900	2100	2400	2200	3600	4000	3000	4300	5100		1300	2000	4500		4100	1800	4000	2700	2900	3300	4800	1400	2300	2200	1300	440
12												140	1100	110	2100																							
13												140	1100	110	2100																							
14																																						
15												120	890	510	19000			170																				
16	170	150	170	230	220	290	220	420	330		420	1300	8300	6700	42000	500	490	730	510		100		120											460	420	430	980	480
17	250	200	250	320	300	380	320	600	550		630	2400	17000	8300	47000	480	400	550	380		110		120										110	490	490	540	1400	630
18	370	320	350	450	370	530	260	810	450		520	3600	14000	7100	44000	650	700	790	560	130	170		260	210					160				160	770	770	780	1700	760
19						150	130	170	350		150	540	2200	3100	18000																			180	220	230	1100	390
20	130	110	160			190	160	250	230		270	570	2300	1600	24000	550	630	1500	850	110	130													410	380	320	550	420
21	130	110	160			190	160	250	230		270	570	2300	1600	24000	550	630	1500	850	110	130													410	380	320	550	420
22	180	140	200	260	230	280	180	410	190		450	890	2800	3100	30000	580	480	1000	610	120	140		110										120	400	370	310	520	400
23																																						
24	130	120	130			220	120	350	250		450	1600	7600	7400	38000	190		120																230	220	230	660	250
25								110			100	210	2800	1500	8200			140																				
26						120		160			170	370	4500	2400	15000	130	120	290	160															110	110	110	200	
27	130	120	130			220	120	350	250		450	1600	7600	7400	38000	190		120																230	220	230	660	250
28	230	170	290	240	300	350	220	420	290		360	740	5200	3500	63000	510	470	1300	750	130	130													270	280	280	520	530
29																																						
30																																						
31	190	140	220		200	250	150	320	170		250	490	4300	2700	44000	380	460	1200	770		100													200	230	200	420	440
32	170	150	170	230	220	290	220	420	330		420	1300	8300	6700	42000	500	490	730	510		100		120											460	420	430	980	480
33	130	110	160			190	160	250	230		270	570	2300	1600	24000	550	630	1500	850	110	130													410	380	320	550	420
34															630																							
35															4100																							
36													150		480																							
37	110		140			180	120	240	140		240	520	2100	1700	14000	270	240	890	490	170													170	170	170	290	270
38												100	560	280	610					130																		
39																				230																		
40			100			110		160	110		210	280	1600	1600	22000	180	150	230	150	370														160	130	120	210	220
41	460	320	430	510	440	720	480	980	500		1100	1700	8300	7400	73000	940	640	1100	690		180								110				160	610	490	480	720	880
42	460	500	610	660	450	760	670	1200	1100		2300	3800	17000	13000	150000	850	560	690	460		140			240					130				170	1200	940	830	1400	1100
43	740	530	680	810	650	1200	920	1500	1400		2200	3400	23000	14000	130000	1100	750	1300	820		250	150	230	200					160			140	240	790	900	850	1500	1700
44	1300	1400	1200	1700	1200	2000	1600	3100	2400		4500	7400	23000	36000	410000	2700	1800	1900	1400		450	520	680	490		490	280	570	270	250	270	620	4000	3400	3100	4600	3000
45						130	100	200	160		300	440	1900	1600	23000	170	120	180	120	230													180	130	110	200	210
46													730	390	6800																							
47	360	260	340	440	340	550	510	700	920		950	1400	8400	8100	98000	640	500	610	360		100													590	670	620	1300	1100
48	360	260	340	440	340	550	510	700	920		950	1400	8400	8100	98000	640	500	610	360		100													590	670	620	1300	1100
49	740	530	680	810	650	1200	920	1500	1400		2200	3400	23000	14000	130000	1100	750	1300	820		250	150	230	200					160			140	240	790	900	850	1500	1700
50															900																							
51							140	120	390		190	280	2300	1300	16000																			140	150	130	400	380
52	890	680	840	1000	830	1400	1100	1700	1600		2400	3900	22000	19000	160000	1700	1200	1400	1100	300	370	260	380	380		330	180	350	200	200	230	390	1500	1600	1500	2500	2200
53	290	250	250	310	260	420	390	650	1100		980	1800	12000	6800	85000	310	180	230	170															660	580	490	1200	1000
54															950																							
55														110	2900																							
56	560	490	700	640	570	950	440	1400	370		1100	2600	14000	13000	150000	1100	610	1000	620	200	210			140					110			110	200	850	680	640	900	1000
57															1100																							
58																																						
59			410					130			190	350	1300	1700	19000	150		190	120															210	150	150	220	220
60	560	490	700	640	570	950	440	1400	370		1100	2600	14000	13000	150000	1100	610	1000	620	200	210			140					110			110	200	850	680	640	900	1000
61	480	400	560	460	410	790	430	1000	390		930	1600	9500	9300	110000	850	560	940	550	210	220												120	210	480	540	510