

23.0 Tables and Figures

Table 1. Names, International Union of Pure and Applied Chemistry (IUPAC) numbers, and CAS Registry numbers for native and labeled chlorinated biphenyl (CB) congeners determined by isotope dilution and internal standard HRGC/HRMS.

CB congener ¹	IUPAC number	CAS registry number	Labeled analog	IUPAC analog	CAS registry number
2-MoCB	1	2051-60-7	¹³ C ₁₂ -2-MoCB ²	1L	234432-85-0
3-MoCB	2	2051-61-8			
4-MoCB	3	2051-62-9	¹³ C ₁₂ -4-MoCB ²	3L	208263-77-8
2,2'-DiCB	4	13029-08-8	¹³ C ₁₂ -2,2'-DiCB ²	4L	234432-86-1
2,3-DiCB	5	16605-91-7			
2,3'-DiCB	6	25569-80-6			
2,4-DiCB	7	33284-50-3			
2,4'-DiCB ³	8	34883-43-7			
2,5-DiCB	9	34883-39-1	¹³ C ₁₂ -2,5-DiCB ⁴	9L	250694-89-4
2,6-DiCB	10	33146-45-1			
3,3'-DiCB	11	2050-67-1			
3,4-DiCB	12	2974-92-7			
3,4'-DiCB	13	2974-90-5			
3,5-DiCB	14	34883-41-5			
4,4'-DiCB	15	2050-68-2	¹³ C ₁₂ -4,4'-DiCB ²	15L	208263-67-6
2,2',3-TrCB	16	38444-78-9			
2,2',4-TrCB	17	37680-66-3			
2,2',5-TrCB ³	18	37680-65-2			
2,2',6-TrCB	19	38444-73-4	¹³ C ₁₂ -2,2',6-TrCB ²	19L	234432-87-2
2,3,3'-TrCB	20	38444-84-7			
2,3,4-TrCB	21	55702-46-0			
2,3,4'-TrCB	22	38444-85-8			
2,3,5-TrCB	23	55720-44-0			
2,3,6-TrCB	24	55702-45-9			
2,3',4-TrCB	25	55712-37-3			
2,3',5-TrCB	26	38444-81-4			
2,3',6-TrCB	27	38444-76-7			
2,4,4'-TrCB ³	28	7012-37-5	¹³ C ₁₂ -2,4,4'-TriCB ⁵	28L	208263-76-7
2,4,5-TrCB	29	15862-07-4			
2,4,6-TrCB	30	35693-92-6			
2,4',5-TrCB	31	16606-02-3			
2,4',6-TrCB	32	38444-77-8			
2',3,4-TrCB	33	38444-86-9			
2',3,5-TrCB	34	37680-68-5			
3,3',4-TrCB	35	37680-69-6			
3,3',5-TrCB	36	38444-87-0			
3,4,4'-TrCB	37	38444-90-5	¹³ C ₁₂ -3,4,4'-TrCB ²	37L	208263-79-0
3,4,5-TrCB	38	53555-66-1			
3,4',5-TrCB	39	38444-88-1			
2,2',3,3'-TeCB	40	38444-93-8			

CB congener ¹	IUPAC number	CAS registry number	Labeled analog	IUPAC analog	CAS registry number
2,2',3,4-TeCB	41	52663-59-9			
2,2',3,4'-TeCB	42	36559-22-5			
2,2',3,5-TeCB	43	70362-46-8			
2,2',3,5'-TeCB ³	44	41464-39-5			
2,2',3,6-TeCB	45	70362-45-7			
2,2',3,6'-TeCB	46	41464-47-5			
2,2',4,4'-TeCB	47	2437-79-8			
2,2',4,5-TeCB	48	70362-47-9			
2,2',4,5'-TeCB	49	41464-40-8			
2,2',4,6-TeCB	50	62796-65-0			
2,2',4,6'-TeCB	51	68194-04-7			
2,2',5,5'-TeCB ³	52	35693-99-3	¹³ C ₁₂ -2,2',5,5'-TeCB ⁴	52L	208263-80-3
2,2',5,6'-TeCB	53	41464-41-9			
2,2',6,6'-TeCB	54	15968-05-5	¹³ C ₁₂ -2,2',6,6'-TeCB ²	54L	234432-88-3
2,3,3',4'-TeCB	55	74338-24-2			
2,3,3',4'-TeCB	56	41464-43-1			
2,3,3',5-TeCB	57	70424-67-8			
2,3,3',5'-TeCB	58	41464-49-7			
2,3,3',6-TeCB	59	74472-33-6			
2,3,4,4'-TeCB	60	33025-41-1			
2,3,4,5-TeCB	61	33284-53-6			
2,3,4,6-TeCB	62	54230-22-7			
2,3,4',5-TeCB	63	74472-34-7			
2,3,4',6-TeCB	64	52663-58-8			
2,3,5,6-TeCB	65	33284-54-7			
2,3',4,4'-TeCB ³	66	32598-10-0			
2,3',4,5-TeCB	67	73575-53-8			
2,3',4,5'-TeCB	68	73575-52-7			
2,3',4,6-TeCB	69	60233-24-1			
2,3',4',5-TeCB	70	32598-11-1			
2,3',4',6-TeCB	71	41464-46-4			
2,3',5,5'-TeCB	72	41464-42-0			
2,3',5',6-TeCB	73	74338-23-1			
2,4,4',5-TeCB	74	32690-93-0			
2,4,4',6-TeCB	75	32598-12-2			
2',3,4,5-TeCB	76	70362-48-0			
3,3',4,4'-TeCB ^{3,6}	77	32598-13-3	¹³ C ₁₂ -3,3',4,4'-TeCB ^{2,7}	77L	105600-23-5
3,3',4,5-TeCB	78	70362-49-1			
3,3',4,5'-TeCB	79	41464-48-6			
3,3',5,5'-TeCB	80	33284-52-5			
3,4,4',5-TeCB ⁶	81	70362-50-4	¹³ C ₁₂ -3,4,4',5-TeCB ⁷	81L	208461-24-9
2,2',3,3',4-PeCB	82	52663-62-4			
2,2',3,3',5-PeCB	83	60145-20-2			
2,2',3,3',6-PeCB	84	52663-60-2			
2,2',3,4,4'-PeCB	85	65510-45-4			
2,2',3,4,5-PeCB	86	55312-69-1			

CB congener ¹	IUPAC number	CAS registry number	Labeled analog	IUPAC analog	CAS registry number
2,2',3,4,5'-PeCB	87	38380-02-8			
2,2',3,4,6-PeCB	88	55215-17-3			
2,2',3,4,6'-PeCB	89	73575-57-2			
2,2',3,4',5-PeCB	90	68194-07-0			
2,2',3,4',6-PeCB	91	68194-05-8			
2,2',3,5,5'-PeCB	92	52663-61-3			
2,2',3,5,6-PeCB	93	73575-56-1			
2,2',3,5,6'-PeCB	94	73575-55-0			
2,2',3,5',6-PeCB	95	38379-99-6			
2,2',3,6,6'-PeCB	96	73575-54-9			
2,2',3',4,5-PeCB	97	41464-51-1			
2,2',3',4,6-PeCB	98	60233-25-2			
2,2',4,4',5-PeCB	99	38380-01-7			
2,2',4,4',6-PeCB	100	39485-83-1			
2,2',4,5,5'-PeCB ³	101	37680-73-2	¹³ C ₁₂ -2,2',4,5,5'-PeCB ⁴	101L	104130-39-4
2,2',4,5,6'-PeCB	102	68194-06-9			
2,2',4,5',6-PeCB	103	60145-21-3			
2,2',4,6,6'-PeCB	104	56558-16-8	¹³ C ₁₂ -2,2',4,6,6'-PeCB ²	104L	234432-89-4
2,3,3',4,4'-PeCB ^{3,6}	105	32598-14-4	¹³ C ₁₂ -2,3,3',4,4'-PeCB ⁷	105L	208263-62-1
2,3,3',4,5-PeCB	106	70424-69-0			
2,3,3',4',5-PeCB	107	70424-68-9			
2,3,3',4,5'-PeCB	108	70362-41-3			
2,3,3',4,6-PeCB	109	74472-35-8			
2,3,3',4',6-PeCB	110	38380-03-9			
2,3,3',5,5'-PeCB	111	39635-32-0	¹³ C ₁₂ -2,3,3',5,5'-PeCB ⁵	111 L	235416-29-2
2,3,3',5,6-PeCB	112	74472-36-9			
2,3,3',5',6-PeCB	113	68194-10-5			
2,3,4,4',5-PeCB ⁶	114	74472-37-0	¹³ C ₁₂ -2,3,4,4',5-PeCB ⁷	114 L	208263-63-2
2,3,4,4',6-PeCB	115	74472-38-1			
2,3,4,5,6-PeCB	116	18259-05-7			
2,3,4',5,6-PeCB	117	68194-11-6			
2,3',4,4',5-PeCB ^{3,6}	118	31508-00-6	¹³ C ₁₂ -2,3',4,4',5-PeCB ⁷	118 L	104130-40-7
2,3',4,4',6-PeCB	119	56558-17-9			
2,3',4,5,5'-PeCB	120	68194-12-7			
2,3',4,5',6-PeCB	121	56558-18-0			
2',3,3',4,5-PeCB	122	76842-07-4			
2',3,4,4',5-PeCB ⁶	123	65510-44-3	¹³ C ₁₂ -2',3,4,4',5-PeCB ⁷	123L	208263-64-3
2',3,4,5,5'-PeCB	124	70424-70-3			
2',3,4,5,6'-PeCB	125	74472-39-2			
3,3',4,4',5-PeCB ^{3,6}	126	57465-28-8	¹³ C ₁₂ -3,3',4,4',5-PeCB ^{2,7}	126L	208263-65-4
3,3',4,5,5'-PeCB	127	39635-33-1			
2,2',3,3',4,4'-HxCB ³	128	38380-07-3			
2,2',3,3',4,5-HxCB	129	55215-18-4			
2,2',3,3',4,5'-HxCB	130	52663-66-8			
2,2',3,3',4,6-HxCB	131	61798-70-7			
2,2',3,3',4,6'-HxCB	132	38380-05-1			

CB congener ¹	IUPAC number	CAS registry number	Labeled analog	IUPAC analog	CAS registry number
2,2',3,3',5,5'-HxCB	133	35694-04-3			
2,2',3,3',5,6'-HxCB	134	52704-70-8			
2,2',3,3',5,6'-HxCB	135	52744-13-5			
2,2',3,3',6,6'-HxCB	136	38411-22-2			
2,2',3,4,4',5'-HxCB	137	35694-06-5			
2,2',3,4,4',5'-HxCB ³	138	35065-28-2	¹³ C ₁₂ -2,2',3,4,4',5'-HxCB ⁴	138L	208263-66-5
2,2',3,4,4',6'-HxCB	139	56030-56-9			
2,2',3,4,4',6'-HxCB	140	59291-64-4			
2,2',3,4,5,5'-HxCB	141	52712-04-6			
2,2',3,4,5,6'-HxCB	142	41411-61-4			
2,2',3,4,5,6'-HxCB	143	68194-15-0			
2,2',3,4,5',6'-HxCB	144	68194-14-9			
2,2',3,4,6,6'-HxCB	145	74472-40-5			
2,2',3,4',5,5'-HxCB	146	51908-16-8			
2,2',3,4',5,6'-HxCB	147	68194-13-8			
2,2',3,4',5,6'-HxCB	148	74472-41-6			
2,2',3,4',5',6'-HxCB	149	38380-04-0			
2,2',3,4',6,6'-HxCB	150	68194-08-1			
2,2',3,5,5',6'-HxCB	151	52663-63-5			
2,2',3,5,6,6'-HxCB	152	68194-09-2			
2,2',4,4',5,5'-HxCB ³	153	35065-27-1			
2,2',4,4',5',6'-HxCB	154	60145-22-4			
2,2',4,4',6,6'-HxCB	155	33979-03-2	¹³ C ₁₂ -2,2',4,4',6,6'-HxCB ²	155L	234432-90-7
2,3,3',4,4',5'-HxCB ⁶	156	38380-08-4	¹³ C ₁₂ -2,3,3',4,4',5'-HxCB ⁷	156L	208263-68-7
2,3,3',4,4',5'-HxCB ⁶	157	69782-90-7	¹³ C ₁₂ -2,3,3',4,4',5'-HxCB ⁷	157L	235416-30-5
2,3,3',4,4',6'-HxCB	158	74472-42-7			
2,3,3',4,5,5'-HxCB	159	39635-35-3			
2,3,3',4,5,6'-HxCB	160	41411-62-5			
2,3,3',4,5',6'-HxCB	161	74472-43-8			
2,3,3',4',5,5'-HxCB	162	39635-34-2			
2,3,3',4',5,6'-HxCB	163	74472-44-9			
2,3,3',4',5',6'-HxCB	164	74472-45-0			
2,3,3',5,5',6'-HxCB	165	74472-46-1			
2,3,4,4',5,6'-HxCB	166	41411-63-6			
2,3',4,4',5,5'-HxCB ⁶	167	52663-72-6	¹³ C ₁₂ -2,3',4,4',5,5'-HxCB ⁷	167L	208263-69-8
2,3',4,4',5',6'-HxCB	168	59291-65-5			
3,3',4,4',5,5'-HxCB ^{3,6}	169	32774-16-6	¹³ C ₁₂ -3,3',4,4',5,5'-HxCB ^{2,7}	169L	208263-70-1
2,2',3,3',4,4',5'-HpCB ³	170	35065-30-6			
2,2',3,3',4,4',6'-HpCB	171	52663-71-5			
2,2',3,3',4,5,5'-HpCB	172	52663-74-8			
2,2',3,3',4,5,6'-HpCB	173	68194-16-1			
2,2',3,3',4,5,6'-HpCB	174	38411-25-5			
2,2',3,3',4,5',6'-HpCB	175	40186-70-7			
2,2',3,3',4,6,6'-HpCB	176	52663-65-7			
2,2',3,3',4',5,6'-HpCB	177	52663-70-4			
2,2',3,3',5,5',6'-HpCB	178	52663-67-9	¹³ C ₁₂ -2,2',3,3',5,5',6'-HpCB ⁵	178L	232919-67-4

CB congener ¹	IUPAC number	CAS registry number	Labeled analog	IUPAC analog	CAS registry number
2,2',3,3',5,6,6'-HpCB	179	52663-64-6			
2,2',3,4,4',5,5'-HpCB ³	180	35065-29-3			
2,2',3,4,4',5,6-HpCB	181	74472-47-2			
2,2',3,4,4',5,6'-HpCB	182	60145-23-5			
2,2',3,4,4',5',6-HpCB	183	52663-69-1			
2,2',3,4,4',6,6'-HpCB	184	74472-48-3			
2,2',3,4,5,5',6-HpCB	185	52712-05-7			
2,2',3,4,5,6,6'-HpCB	186	74472-49-4			
2,2',3,4',5,5',6-HpCB ³	187	52663-68-0			
2,2',3,4',5,6,6'-HpCB	188	74487-85-7	¹³ C ₁₂ -2,2',3,4',5,6,6'-HpCB ²	188L	234432-91-8
2,3,3',4,4',5,5'-HpCB ⁶	189	39635-31-9	¹³ C ₁₂ -2,3,3',4,4',5,5'-HpCB ^{2,7}	189L	208263-73-4
2,3,3',4,4',5,6-HpCB	190	41411-64-7			
2,3,3',4,4',5',6-HpCB	191	74472-50-7			
2,3,3',4,5,5',6-HpCB	192	74472-51-8			
2,3,3',4',5,5',6-HpCB	193	69782-91-8			
2,2',3,3',4,4',5,5'-OcCB	194	35694-08-7	¹³ C ₁₂ -2,2',3,3',4,4',5,5'-OcCB ⁴	194L	208263-74-5
2,2',3,3',4,4',5,6-OcCB ³	195	52663-78-2			
2,2',3,3',4,4',5,6'-OcCB	196	42740-50-1			
2,2',3,3',4,4',6,6'-OcCB	197	33091-17-7			
2,2',3,3',4,5,5',6-OcCB	198	68194-17-2			
2,2',3,3',4,5,5',6'-OcCB	199	52663-75-9			
2,2',3,3',4,5,6,6'-OcCB	200	52663-73-7			
2,2',3,3',4,5',6,6'-OcCB	201	40186-71-8			
2,2',3,3',5,5',6,6'-OcCB	202	2136-99-4	¹³ C ₁₂ -2,2',3,3',5,5',6,6'-OcCB ²	202L	105600-26-8
2,2',3,4,4',5,5',6-OcCB	203	52663-76-0			
2,2',3,4,4',5,6,6'-OcCB	204	74472-52-9			
2,3,3',4,4',5,5',6-OcCB	205	74472-53-0	¹³ C ₁₂ -2,3,3',4,4',5,5',6-OcCB ²	205L	234446-64-1
2,2',3,3',4,4',5,5',6-NoCB ³	206	40186-72-9	¹³ C ₁₂ -2,2',3,3',4,4',5,5',6-NoCB ²	206L	208263-75-6
2,2',3,3',4,4',5,6,6'-NoCB	207	52663-79-3			
2,2',3,3',4,5,5',6,6'-NoCB	208	52663-77-1	¹³ C ₁₂ -2,2',3,3',4,5,5',6,6'-NoCB ²	208L	234432-92-9
DeCB ³	209	2051-24-3	¹³ C ₁₂ -DeCB ²	209L	105600-27-9

- Abbreviations for chlorination levels
 - MoCB = monochlorobiphenyl
 - DiCB = dichlorobiphenyl
 - TrCB = trichlorobiphenyl
 - TeCB = tetrachlorobiphenyl
 - PeCB = pentachlorobiphenyl
 - HxCB = hexachlorobiphenyl
 - HpCB = heptachlorobiphenyl
 - OcCB = octachlorobiphenyl
 - NoCB = nonachlorobiphenyl
 - DeCB = decachlorobiphenyl
- Labeled level of chlorination (LOC) window-defining congener
- National Oceanic and Atmospheric Administration (NOAA) congener of interest
- Labeled injection internal standard
- Labeled clean-up standard

6. World Health Organization (WHO) toxic congener
7. Labeled analog of WHO toxic congener