



PCB Standards and Standard Mixtures

Solutions for a Greener World

PCB Nomenclature

In recent years, interest in PCB testing has centered around two different but related groups of congeners, one group based on congeners most commonly found in technical PCB products and thus in the environment, and another based on toxicity. To help researchers more easily find the products they need, PCB standards and standard mixtures have been categorized by these two groups: "WHO Dioxin-Like PCBs" – compounds that demonstrate dioxin-like activity and have been given toxic equivalence factors (TEFs) by the World Health Organization (WHO); and "WHO Non-Dioxin-Like (Marker/Indicator) PCBs" – compounds that are found in the highest concentrations in technical products and the environment, but have not been given TEFs by the WHO. Please note that CIL also offers a set of standard mixtures developed for the combined analysis of both groups. Look to CIL for even more developments in this area as we continue to work toward meeting the complete needs of researchers in environmental, food, water, and exposure analysis.

Unlabeled "CS" PCB Standards

CIL's primary business is isotopically labeled standards, but it is important to remember that the accuracy and precision of a quantitative analysis is dependent upon the accuracy and precision of the unlabeled (native) standards. In the past, CIL utilized commercially available native standards from multiple vendors for the confirmation of its isotopically labeled standards. It was discovered, however, that there can be substantial variability among the commercial native standards. Thus, CIL initiated the "CS" (certified) PCB standards program.

CIL prepares native certified standards using good laboratory practice (GLP). Individual, native crystalline PCB isomers (98%+ purity) are weighed in triplicate on a microbalance calibrated with NIST-traceable Class S weights and formulated to specific concentration. Triplicate analyses of each of the three solutions in isooctane are carried out using GC/MS. In order to establish statistical control, the relative standard deviation (RSD) of each solution must be less than 5%, and the RSD for the entire set of analyses for all three standards must be <5%. When these parameters have been met, the solutions are combined and the resulting solution analyzed again in triplicate by three chemists. If the RSD of these analyses is also <5%, the final product is the certified PCB standard. These 100 µg/mL solutions are highly accurate native standards for quantitation of PCBs. These standards are used in all CIL calibration series and native standard mixtures, and are used to validate all isotope-labeled standards from CIL.

Isotope-Labeled PCB Standards

CIL offers more than 50 individual ¹³C-labeled PCB standards to meet the growing needs of researchers utilizing isotope dilution mass spectrometry (IDMS). All ¹³C-labeled PCB standards are quantified against CIL-certified unlabeled PCB standards for utmost precision and accuracy.

High-Purity PCB Standards

CIL responds to the needs of the analytical community by providing high-purity PCB standards. As new instrumentation and methodologies drive detection limits lower, the presence of even very low levels of impurities in the labeled standards of other PCB congeners or polychlorinated dibenzo-*p*-dioxins and dibenzofurans (PCDD/Fs) becomes a hindrance to a laboratory's minimum-detection capabilities.

CIL has developed aggressive cleanup procedures and adopted much tighter quality-control specifications for the eight mono-ortho-substituted dioxin-like PCBs (DL-PCBs). These new specifications include extremely low allowances for ¹³C-non-ortho DL-PCBs, native content, other PCB congeners and PCDD/Fs.

High-Purity PCB Standards

Chemical Identity: Unambiguous identity by GC-MS, ¹H-NMR, ¹³C-NMR, and MP determination

Isotopic Enrichment: 99% by GC-MS

Chemical Purity: >98% by GC-MS, GC-ECD, and ¹H-NMR

- *Native Content: <0.1% by GC-MS SI*
- *¹³C-non-ortho DL-PCBs: <0.05% by GC-ECD vs. cal-curve, or HRGC-MS*
- *17 (2,3,7,8) containing PCDD/Fs: <0.05% for each compound by HRGC-MS*

Concentration: 40 ± 2 µg/mL by comparison assay vs. native "certified standard"

Uncertainty: Conforming to Eurachem/CITAC Guide "Quantifying Uncertainty in Analytical Measurement"

Comprehensive Native PCB Mixtures

CIL has produced a new calibration series and spiking solutions to go along with its two large mixes of unlabeled PCBs formulated entirely from its PCB certified standards individual stock solutions. The Comprehensive PCB Mixtures include all the WHO dioxin-like PCBs that have been assigned TEFs, the predominant congeners, and first- and last-eluting congeners from the mono-through-deca homologue groups. Since some pairs of these compounds coelute on certain columns, the Fully Resolved Native Mono-Deca PCB Mixture was formulated with no coeluting congeners under normal analytical conditions.

Mixed Bromo/Chlorobiphenyl Standards

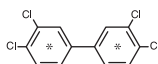
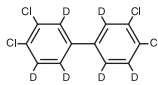
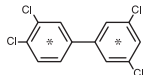
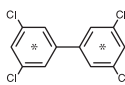
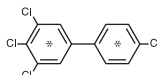
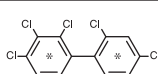
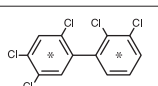
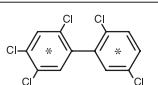
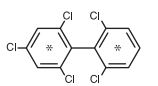
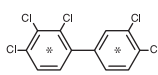
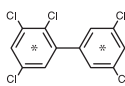
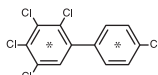
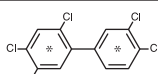
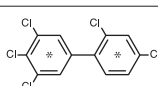
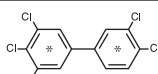
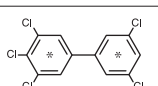
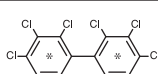
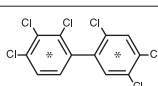
CIL offers a selection of labeled and unlabeled mixed halogenated biphenyl standards and standard mixtures. While very limited research on these compounds has been done to date, they have been identified in environmental matrices and warrant further investigation.

Isotope-Labeled Individual PCB Standards

Catalog No.	Compound	IUPAC	Structure	Concentration	Amount
CLM-3235-1.2	Biphenyl ($^{13}\text{C}_{12}$, 99%)	0		100 µg/mL in nonane	1.2 mL
EC-4908-3 EC-4908-1.2	2-Monochlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	1		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-4990-3 EC-4990-1.2	4-Monochlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	3		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-4911-3 EC-4911-1.2	2,2'-Dichlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	4		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-5095-3 EC-5095-1.2	2,4'-Dichlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	8		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-4165-3 EC-4165-1.2	2,5-Dichlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	9		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
NEW EC-5494-3 NEW EC-5494-1.2	3,3'-Dichlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	11		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-1402-3 EC-1402-1.2	4,4'-Dichlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	15		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-4909-3 EC-4909-1.2	2,2',6-Trichlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	19		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M EC-1413-3 EC-1413-1.2	2,4,4'-Trichlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	28		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
NEW EC-5512-3 NEW EC-5512-1.2	2,4',5-Trichlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	31		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-4163-3 EC-4163-1.2	2,4',6-Trichlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	32		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-4901-3 EC-4901-1.2	3,4,4'-Trichlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	37		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-1434-3 EC-1434-1.2	2,2',4,4'-Tetrachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	47		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M EC-1424-3 EC-1424-1.2	2,2',5,5'-Tetrachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	52		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-4912-3 EC-4912-1.2	2,2',6,6'-Tetrachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	54		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-4078-3 EC-4078-1.2	2,3,4,4'-Tetrachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	60		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-4914-3 EC-4914-1.2	2,3',4',5-Tetrachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	70		40 ± 2 µg/mL in nonane	3 mL 1.2 mL

M = marker PCB DL = dioxin-like PCB

Isotope-Labeled Individual PCB Standards

	Catalog No.	Compound	IUPAC	Structure	Concentration	Amount
DL	EC-1404-3 EC-1404-1.2	3,3',4,4'-Tetrachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	77		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	DLM-3063-3 DLM-3063-1.2	3,3',4,4'-Tetrachlorobiphenyl (D_6 , 98%)	77		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-5048-3 EC-5048-1.2	3,3',4,5'-Tetrachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	79		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1414-3 EC-1414-1.2	3,3',5,5'-Tetrachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	80		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-1412-3 EC-1412-1.2	3,4,4',5-Tetrachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	81		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4929-3 EC-4929-1.2	2,2',3,4,4'-Pentachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	85		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1428-3 EC-1428-1.2	2,2',3',4,5-Pentachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	97		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M	EC-1405-3 EC-1405-1.2	2,2',4,5,5'-Pentachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	101		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4910-3 EC-4910-1.2	2,2',4,6,6'-Pentachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	104		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-1420-3 EC-1420-1.2	2,3,3',4,4'-Pentachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	105		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
	EC-1415-3 EC-1415-1.2	2,3,3',5,5'-Pentachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	111		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-4902-3 EC-4902-1.2	2,3,4,4',5-Pentachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	114		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
M/DL	EC-1435-3 EC-1435-1.2	2,3',4,4',5-Pentachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	118		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
DL	EC-4904-3 EC-4904-1.2	2',3,4,4',5-Pentachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	123		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
DL	EC-1425-3 EC-1425-1.2	3,3',4,4',5-Pentachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	126		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1421-3 EC-1421-1.2	3,3',4,5,5'-Pentachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	127		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1411-3 EC-1411-1.2	2,2',3,3',4,4'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	128		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M	EC-1436-3 EC-1436-1.2	2,2',3,4,4',5'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	138		40 ± 2 µg/mL in nonane	3 mL 1.2 mL

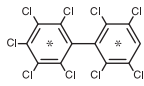
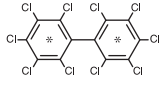
M = marker PCB DL = dioxin-like PCB

Isotope-Labeled Individual PCB Standards

	Catalog No.	Compound	IUPAC	Structure	Concentration	Amount
	EC-1426-3 EC-1426-1.2	2,2',3,4,5,5'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	141		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M	EC-1406-3 EC-1406-1.2	2,2',4,4',5,5'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	153		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4167-3 EC-4167-1.2	2,2',4,4',6,6'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	155		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-1422-3 EC-1422-1.2	2,3,3',4,4',5-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	156		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
DL	EC-4051-3 EC-4051-1.2	2,3,3',4,4',5'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	157		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
	EC-5336-3 EC-5336-1.2	2,3,3',4,5,5'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	159		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-4050-3 EC-4050-1.2	2,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	167		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
DL	EC-1416-3 EC-1416-1.2	3,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	169		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4905-3 EC-4905-1.2	2,2',3,3',4,4',5-Heptachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	170		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1417-3 EC-1417-1.2	2,2',3,3',5,5',6-Heptachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	178		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M	EC-1407-3 EC-1407-1.2	2,2',3,4,4',5,5'-Heptachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	180		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
NEW NEW	EC-5471-3 EC-5471-1.2	2,2',3,4,4',5,6'-Heptachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	182		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4913-3 EC-4913-1.2	2,2',3,4',5,6,6'-Heptachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	188		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-1409-3 EC-1409-1.2	2,3,3',4,4',5,5'-Heptachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	189		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
	EC-1418-3 EC-1418-1.2	2,2',3,3',4,4',5,5'-Octachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	194		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1408-3 EC-1408-1.2	2,2',3,3',5,5',6,6'-Octachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	202		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4199-3 EC-4199-1.2	2,3,3',4,4',5,5',6-Octachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	205		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4900-3 EC-4900-1.2	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	206		40 ± 2 µg/mL in nonane	3 mL 1.2 mL

M = marker PCB**DL** = dioxin-like PCB

Isotope-Labeled Individual PCB Standards

Catalog No.	Compound	IUPAC	Structure	Concentration	Amount
EC-1419-3 EC-1419-1.2	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (¹³ C ₁₂ , 99%)	208		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-1410-3 EC-1410-1.2 EC-1410-10	Decachlorobiphenyl (¹³ C ₁₂ , 99%)	209		40 ± 2 µg/mL in nonane	3 mL 1.2 mL 10 mL

Unlabeled Individual PCB "CS" Standards

Catalog No.	Compound	Concentration	Amount	
PCB-1-CS	2-Monochlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-3-CS	4-Monochlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-4-CS	2,2'-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-8-CS	2,4'-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-9-CS	2,5-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-10-CS	2,6-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-11-CS	3,3'-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-12-CS	3,4-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-15-CS	4,4'-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
NEW	PCB-17-CS	2,2',4-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-18-CS	2,2',5-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-19-CS	2,2',6-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-28-CS	2,4,4'-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-30-CS	2,4,6-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-31-CS	2,4',5-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-32-CS	2,4',6-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-33-CS	2',3,4-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-35-CS	3,3',4-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-37-CS	3,4,4'-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-38-CS	3,4,5-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-39-CS	3,4',5-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-44-CS	2,2',3,5'-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-47-CS	2,2',4,4'-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-49-CS	2,2',4,5'-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-52-CS	2,2',5,5'-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-54-CS	2,2',6,6'-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-57-CS	2,3,3',5-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-60-CS	2,3,4,4'-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-66-CS	2,3',4,4'-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-70-CS	2,3',4',5-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-74-CS	2,4,4',5-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-77-CS	3,3',4,4'-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-78-CS	3,3',4,5-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-79-CS	3,3',4,5'-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-80-CS	3,3',5,5'-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-81-CS	3,4,4',5-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
NEW	PCB-82-CS	2,2',3,3',4-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-85-CS	2,2',3,4,4'-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-87-CS	2,2',3,4,5'-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-95-CS	2,2',3,5',6-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-97-CS	2,2',3',4,5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-99-CS	2,2',4,4',5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-101-CS	2,2',4,5,5'-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-104-CS	2,2',4,6,6'-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-105-CS	2,3,3',4,4'-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	
PCB-110-CS	2,3,3',4',6-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL	

Unlabeled Individual PCB “CS” Standards

Catalog No.	Compound	Concentration	Amount
PCB-111-CS	2,3,3',5,5'-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-112-CS	2,3,3',5,6-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-114-CS	2,3,4,4',5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-118-CS	2,3',4,4',5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-123-CS	2',3,4,4',5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-126-CS	3,3',4,4',5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-127-CS	3,3',4,5,5'-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-128-CS	2,2',3,3',4,4'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW PCB-132-CS	2,2',3,3',4,6'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-138-CS	2,2',3,4,4',5'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-141-CS	2,2',3,4,5,5'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-146-CS	2,2',3,4',5,5'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-149-CS	2,2',3,4',5',6-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-151-CS	2,2',3,5,5',6-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-153-CS	2,2',4,4',5,5'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-155-CS	2,2',4,4',6,6'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-156-CS	2,3,3',4,4',5-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-157-CS	2,3,3',4,4',5'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-158-CS	2,3,3',4,4',6-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-159-CS	2,3,3',4,5,5'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-162-CS	2,3,3',4',5,5'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-167-CS	2,3',4,4',5,5'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-169-CS	3,3',4,4',5,5'-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-170-CS	2,2',3,3',4,4',5-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW PCB-171-CS	2,2',3,3',4,4',6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-172-CS	2,2',3,3',4,5,5'-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-174-CS	2,2',3,3',4,5,6'-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-177-CS	2,2',3,3',4',5,6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-178-CS	2,2',3,3',5,5',6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-180-CS	2,2',3,4,4',5,5'-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW PCB-182-CS	2,2',3,4,4',5,6'-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW PCB-183-CS	2,2',3,4,4',5',6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-187-CS	2,2',3,4',5,5',6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-188-CS	2,2',3,4',5,6,6'-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-189-CS	2,3,3',4,4',5,5'-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW PCB-191-CS	2,3,3',4,4',5',6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-194-CS	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-195-CS	2,2',3,3',4,4',5,6-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-196-CS	2,2',3,3',4,4',5',6-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-198-CS	2,2',3,3',4,5,5',6-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-199-CS	2,2',3,3',4,5,6,6'-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-201-CS	2,2',3,3',4,5,5',6'-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-202-CS	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-203-CS	2,2',3,4,4',5,5',6-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-205-CS	2,3,3',4,4',5,5',6-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-206-CS	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-208-CS	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
PCB-209-CS	Decachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL

Unlabeled PCB Standards

CIL also offers:

- All 209 PCBs in single weighed solutions at approximately 35 µg/mL in isooctane, with chemical purity >95%.
- All 209 PCBs in neat form; typically at nominal weights of 1 or 5 mg.

For details, please consult the CIL website at shop.isotope.com.

US EPA Method 1668A/B/C Standard Mixtures

Catalog No.	Compound	Amount
EC-4976	Method 1668A/B/C Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane
EC-4976-0.2	Method 1668A/B/C High Sensitivity Calibration Solution [CS0.2] (not included in EC-4976)	0.2 mL in nonane
EC-4976-1	Method 1668A/B/C Calibration Solution [CS1]	0.2 mL in nonane
EC-4976-2	Method 1668A/B/C Calibration Solution [CS2]	0.2 mL in nonane
EC-4976-3	Method 1668A/B/C Calibration Verification Solution [CS3]	0.2 mL in nonane
EC-4976-3-4	Method 1668A/B/C Calibration Verification Solution [CS3]	Set of 4 × 0.2 mL in nonane
EC-4976-4	Method 1668A/B/C Calibration Solution [CS4]	0.2 mL in nonane
EC-4976-5	Method 1668A/B/C Calibration Solution [CS5]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Native Toxics/LOC	IUPAC	CS0.2	CS1	CS2	CS3	CS4	CS5
2-MonoCB	1	0.2	1.0	5.0	50	400	2000
4-MonoCB	3	0.2	1.0	5.0	50	400	2000
2,2'-DiCB	4	0.2	1.0	5.0	50	400	2000
4,4'-DiCB	15	0.2	1.0	5.0	50	400	2000
2,2',6-TriCB	19	0.2	1.0	5.0	50	400	2000
3,4,4'-TriCB	37	0.2	1.0	5.0	50	400	2000
2,2',6,6'-TetraCB	54	0.2	1.0	5.0	50	400	2000
3,3',4,4'-TetraCB	77	0.2	1.0	5.0	50	400	2000
3,4,4',5-TetraCB	81	0.2	1.0	5.0	50	400	2000
2,2',4,6,6'-PentaCB	104	0.2	1.0	5.0	50	400	2000
2,3,3',4,4'-PentaCB	105	0.2	1.0	5.0	50	400	2000
2,3,4,4',5-PentaCB	114	0.2	1.0	5.0	50	400	2000
2,3',4,4',5-PentaCB	118	0.2	1.0	5.0	50	400	2000
2',3,4,4',5-PentaCB	123	0.2	1.0	5.0	50	400	2000
3,3',4,4',5-PentaCB	126	0.2	1.0	5.0	50	400	2000
2,2',4,4',6,6'-HexaCB	155	0.2	1.0	5.0	50	400	2000
2,3,3',4,4',5-HexaCB	156	0.2	1.0	5.0	50	400	2000
2,3,3',4,4',5'-HexaCB	157	0.2	1.0	5.0	50	400	2000
2,3',4,4',5,5'-HexaCB	167	0.2	1.0	5.0	50	400	2000
3,3',4,4',5,5'-HexaCB	169	0.2	1.0	5.0	50	400	2000
2,2',3,4',5,6,6'-HeptaCB	188	0.2	1.0	5.0	50	400	2000
2,3,3',4,4',5,5'-HeptaCB	189	0.2	1.0	5.0	50	400	2000
2,2',3,3',5,5',6,6'-OctaCB	202	0.2	1.0	5.0	50	400	2000
2,3,3',4,4',5,5',6-OctaCB	205	0.2	1.0	5.0	50	400	2000
2,2',3,3',4,4',5,5',6-NonaCB	206	0.2	1.0	5.0	50	400	2000
2,2',3,3',4,5,5',6,6'-NonaCB	208	0.2	1.0	5.0	50	400	2000
DecaCB	209	0.2	1.0	5.0	50	400	2000
Labeled Toxics/LOC/Window Defining							
2-MonoCB (¹³ C ₁₂ , 99%)	1	100	100	100	100	100	100
4-MonoCB (¹³ C ₁₂ , 99%)	3	100	100	100	100	100	100
2,2'-DiCB (¹³ C ₁₂ , 99%)	4	100	100	100	100	100	100
4,4'-DiCB (¹³ C ₁₂ , 99%)	15	100	100	100	100	100	100
2,2',6-TriCB (¹³ C ₁₂ , 99%)	19	100	100	100	100	100	100
3,4,4'-TriCB (¹³ C ₁₂ , 99%)	37	100	100	100	100	100	100
2,2',6,6'-TetraCB (¹³ C ₁₂ , 99%)	54	100	100	100	100	100	100
3,3',4,4'-TetraCB (¹³ C ₁₂ , 99%)	77	100	100	100	100	100	100
3,4,4',5-TetraCB (¹³ C ₁₂ , 99%)	81	100	100	100	100	100	100
2,2',4,6,6'-PentaCB (¹³ C ₁₂ , 99%)	104	100	100	100	100	100	100
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	100	100	100	100	100	100
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	100	100	100	100	100	100
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	100	100	100	100	100	100
2',3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	123	100	100	100	100	100	100
3,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	126	100	100	100	100	100	100
2,2',4,4',6,6'-HexaCB (¹³ C ₁₂ , 99%)	155	100	100	100	100	100	100
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	100	100	100	100	100	100
2,3,3',4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	157	100	100	100	100	100	100
2,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	167	100	100	100	100	100	100
3,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	169	100	100	100	100	100	100

(continued on next page)

US EPA Method 1668A/B/C Standard Mixtures

(continued from previous page)

All concentrations are in ng/mL (ppb)

Labeled Toxics/LOC/Window Defining	IUPAC	CS0.2	CS1	CS2	CS3	CS4	CS5
2,2',3,4',5,6,6'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	188	100	100	100	100	100	100
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	100	100	100	100	100	100
2,2',3,3',5,5',6,6'-OctaCB ($^{13}\text{C}_{12}$, 99%)	202	100	100	100	100	100	100
2,3,3',4,4',5,5',6-OctaCB ($^{13}\text{C}_{12}$, 99%)	205	100	100	100	100	100	100
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}\text{C}_{12}$, 99%)	206	100	100	100	100	100	100
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}\text{C}_{12}$, 99%)	208	100	100	100	100	100	100
DecaCB ($^{13}\text{C}_{12}$, 99%)	209	100	100	100	100	100	100
Labeled Cleanup							
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	100	100	100	100	100	100
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	100	100	100	100	100	100
2,2',3,3',5,5',6-HeptaCB ($^{13}\text{C}_{12}$, 99%)	178	100	100	100	100	100	100
Labeled Injection Internal							
2,5-DiCB ($^{13}\text{C}_{12}$, 99%)	9	100	100	100	100	100	100
2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	52	100	100	100	100	100	100
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	100	100	100	100	100	100
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	100	100	100	100	100	100
2,2',3,3',4,4',5,5'-OctaCB ($^{13}\text{C}_{12}$, 99%)	194	100	100	100	100	100	100

NEW EC-1668A/B-KIT Method 1668A/B/C "Starter Kit"

1 Kit

Contains one each of the following items:

EC-4976	Method 1668A/B/C Calibration Solutions [CS1-CS5]
EC-4977	Method 1668A/B/C Labeled Toxics/LOC/Window Defining Solution
EC-4978	Method 1668A/B/C Labeled Cleanup Standard Solution
EC-4979	Method 1668A/B/C Labeled Injection Internal Standard Solution
EC-4989	Method 1668A/B/C Native Toxics/LOC Solution

US EPA Method 1668A/B/C Standard Mixtures

Catalog No.	Compound	Amount
EC-4977	Method 1668A/B/C Labeled Toxics/LOC/Window Defining Solution	1.2 mL in nonane
EC-4977-5	Method 1668A/B/C Labeled Toxics/LOC/Window Defining Solution	5 mL in nonane

Labeled	IUPAC	(ng/mL)
2-MonoCB ($^{13}\text{C}_{12}$, 99%)	1	1000
4-MonoCB ($^{13}\text{C}_{12}$, 99%)	3	1000
2,2'-DiCB ($^{13}\text{C}_{12}$, 99%)	4	1000
4,4'-DiCB ($^{13}\text{C}_{12}$, 99%)	15	1000
2,2',6-TriCB ($^{13}\text{C}_{12}$, 99%)	19	1000
3,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	37	1000
2,2',6,6'-TetraCB ($^{13}\text{C}_{12}$, 99%)	54	1000
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	1000
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	1000
2,2',4,6,6'-PentaCB ($^{13}\text{C}_{12}$, 99%)	104	1000
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	1000
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	1000
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	1000
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	1000
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	1000
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	155	1000
2,2',4,4',6,6'-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	1000
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	1000
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	1000
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	1000
2,2',3,4',5,6,6'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	188	1000
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	1000
2,2',3,3',5,5',6,6'-OctaCB ($^{13}\text{C}_{12}$, 99%)	202	1000
2,3,3',4,4',5,5',6-OctaCB ($^{13}\text{C}_{12}$, 99%)	205	1000
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}\text{C}_{12}$, 99%)	206	1000
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}\text{C}_{12}$, 99%)	208	1000
DecaCB ($^{13}\text{C}_{12}$, 99%)	209	1000

EC-4978	Method 1668A/B/C Labeled Cleanup Standard Solution	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	1000
2,2',3,3',5,5',6-HeptaCB ($^{13}\text{C}_{12}$, 99%)	178	1000

EC-4979	Method 1668A/B/C Labeled Injection Internal Standard Solution	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,5-DiCB ($^{13}\text{C}_{12}$, 99%)	9	5000
2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	52	5000
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	5000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	5000
2,2',3,3',4,4',5,5'-OctaCB ($^{13}\text{C}_{12}$, 99%)	194	5000

US EPA Method 1668A/B/C Standard Mixtures

Catalog No.	Compound	Amount
EC-4989	Method 1668A/B/C Native Toxics/LOC Solution	1.2 mL in nonane

Unlabeled	IUPAC	(ng/mL)
2-MonoCB	1	2000
4-MonoCB	3	2000
2,2'-DiCB	4	2000
4,4'-DiCB	15	2000
2,2',6-TriCB	19	2000
3,4,4'-TriCB	37	2000
2,2',6,6'-TetraCB	54	2000
3,3',4,4'-TetraCB	77	2000
3,4,4',5-TetraCB	81	2000
2,2',4,6,6'-PentaCB	104	2000
2,3,3',4,4'-PentaCB	105	2000
2,3,4,4',5-PentaCB	114	2000
2,3',4,4',5-PentaCB	118	2000
2',3,4,4',5-PentaCB	123	2000
3,3',4,4',5-PentaCB	126	2000
2,2',4,4',6,6'-HexaCB	155	2000
2,3,3',4,4',5-HexaCB	156	2000
2,3,3',4,4',5'-HexaCB	157	2000
2,3',4,4',5,5'-HexaCB	167	2000
3,3',4,4',5,5'-HexaCB	169	2000
2,2',3,4',5,6,6'-HeptaCB	188	2000
2,3,3',4,4',5,5'-HeptaCB	189	2000
2,2',3,3',5,5',6,6'-OctaCB	202	2000
2,3,3',4,4',5,5',6-OctaCB	205	2000
2,2',3,3',4,4',5,5',6-NonaCB	206	2000
2,2',3,3',4,5,5',6,6'-NonaCB	208	2000
DecaCB	209	2000

CEN Method EN-1948-4 PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5380	EN-1948-4 WHO PCB Calibration Series [CS1-CS6]	Set of 6 × 0.2 mL in nonane/isooctane
EC-5380-CS1	EN-1948-4 WHO PCB Calibration Series [CS1]	0.2 mL in nonane/isooctane
EC-5380-CS2	EN-1948-4 WHO PCB Calibration Series [CS2]	0.2 mL in nonane/isooctane
EC-5380-CS3	EN-1948-4 WHO PCB Calibration Series [CS3]	0.2 mL in nonane/isooctane
EC-5380-CS4	EN-1948-4 WHO PCB Calibration Series [CS4]	0.2 mL in nonane/isooctane
EC-5380-CS5	EN-1948-4 WHO PCB Calibration Series [CS5]	0.2 mL in nonane/isooctane
EC-5380-CS6	EN-1948-4 WHO PCB Calibration Series [CS6]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6
3,4,4',5-TetraCB	81	0.1	1	10	50	200	800
3,3',4,4'-TetraCB	77	0.1	1	10	50	200	800
3,3',4,4',5-PentaCB	126	0.1	1	10	50	200	800
3,3',4,4',5,5'-HexaCB	169	0.1	1	10	50	200	800
2,3,3',4,4'-PentaCB	105	0.1	1	10	50	200	800
2,3,4,4',5-PentaCB	114	0.1	1	10	50	200	800
2,3',4,4',5-PentaCB	118	0.6	6	60	300	1200	4800
2',3,4,4',5-PentaCB	123	0.1	1	10	50	200	800
2,3,3',4,4',5-HexaCB	156	0.1	1	10	50	200	800
2,3,3',4,4',5'-HexaCB	157	0.1	1	10	50	200	800
2,3',4,4',5,5'-HexaCB	167	0.1	1	10	50	200	800
2,3,3',4,4',5,5'-HeptaCB	189	0.1	1	10	50	200	800
Sampling							
2,3,4,4'-TetraCB (¹³ C ₁₂ , 99%)	60	10	10	10	10	10	10
3,3',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	127	10	10	10	10	10	10
2,3,3',4,5,5'-HexaCB (¹³ C ₁₂ , 99%)	159	10	10	10	10	10	10
Extraction							
3,4,4',5-TetraCB (¹³ C ₁₂ , 99%)	81	10	10	10	10	10	10
3,3',4,4'-TetraCB (¹³ C ₁₂ , 99%)	77	10	10	10	10	10	10
3,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	126	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	169	10	10	10	10	10	10
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	10	10	10	10	10	10
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	10	10	10	10	10	10
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	10	10	10	10	10	10
2',3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	123	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	10	10	10	10	10	10
2,3,3',4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	157	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	167	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	189	10	10	10	10	10	10
Recovery							
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	10	10	10	10	10	10
2,3,3',5,5'-PentaCB (¹³ C ₁₂ , 99%)	111	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	10	10	10	10	10	10

NEW EC-1948-4W-KIT EN-1948-4 WHO PCB "Starter Kit" 1 Kit

Contains one each of the following items:

EC-5380	EN-1948-4 WHO PCB Calibration Series [CS1-CS6]
EC-5370	EN-1948-4 PCB Sampling Standard
EC-5372	EN-1948-4 WHO PCB Extraction Standard
EC-5371	EN-1948-4 PCB Recovery Standard

CEN Method EN-1948-4 PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5385	EN-1948-4 Marker PCB Calibration Series [CS1-CS6]	Set of 6 × 0.2 mL in nonane/isooctane
EC-5385-CS1	EN-1948-4 Marker PCB Calibration Series [CS1]	0.2 mL in nonane/isooctane
EC-5385-CS2	EN-1948-4 Marker PCB Calibration Series [CS2]	0.2 mL in nonane/isooctane
EC-5385-CS3	EN-1948-4 Marker PCB Calibration Series [CS3]	0.2 mL in nonane/isooctane
EC-5385-CS4	EN-1948-4 Marker PCB Calibration Series [CS4]	0.2 mL in nonane/isooctane
EC-5385-CS5	EN-1948-4 Marker PCB Calibration Series [CS5]	0.2 mL in nonane/isooctane
EC-5385-CS6	EN-1948-4 Marker PCB Calibration Series [CS6]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6
2,4,4'-TriCB	28	0.1	1	10	100	500	5000
2,2',5,5'-TetraCB	52	0.1	1	10	100	500	5000
2,2',4,5,5'-PentaCB	101	0.1	1	10	100	500	5000
2,2',3,4,4',5'-HexaCB	138	0.1	1	10	100	500	5000
2,2',4,4',5,5'-HexaCB	153	0.1	1	10	100	500	5000
2,2',3,4,4',5,5'-HeptaCB	180	0.1	1	10	100	500	5000
Sampling							
2,3,4,4'-TetraCB (¹³ C ₁₂ , 99%)	60	10	10	10	10	10	10
3,3',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	127	10	10	10	10	10	10
2,3,3',4,5,5'-HexaCB (¹³ C ₁₂ , 99%)	159	10	10	10	10	10	10
Extraction							
2,4,4'-TriCB (¹³ C ₁₂ , 99%)	28	100	100	100	100	100	100
2,2',5,5'-TetraCB (¹³ C ₁₂ , 99%)	52	100	100	100	100	100	100
2,2',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	101	100	100	100	100	100	100
2,2',3,4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	138	100	100	100	100	100	100
2,2',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	153	100	100	100	100	100	100
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	100	100	100	100	100	100
Recovery							
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	10	10	10	10	10	10
2,3,3',5,5'-PentaCB (¹³ C ₁₂ , 99%)	111	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	10	10	10	10	10	10

NEW	EC-1948-4M-KIT	EN-1948-4 Marker PCB "Starter Kit"	1 Kit
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Contains one each of the following items:

EC-5385	EN-1948-4 Marker PCB Calibration Series [CS1-CS6]
EC-5370	EN-1948-4 PCB Sampling Standard
EC-5379	EN-1948-4 Marker PCB Extraction Standard
EC-5371	EN-1948-4 PCB Recovery Standard

CEN Method EN-1948-4 PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5370	EN-1948-4 PCB Sampling Standard	1.2 mL in nonane
EC-5370-1/10X-10	EN-1948-4 PCB Sampling Standard (1/10 concentration)	10 mL in nonane

Labeled	IUPAC	EC-5370 (ng/mL)	EC-5370-1/10X-10 (ng/mL)
2,3,4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	60	100	10
3,3',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	127	100	10
2,3,3',4,5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	159	100	10

EC-5372	EN-1948-4 WHO PCB Extraction Standard	1.2 mL in nonane
EC-5372-1/10X-10	EN-1948-4 WHO PCB Extraction Standard (1/10 concentration)	10 mL in nonane

Labeled	IUPAC	EC-5372 (ng/mL)	EC-5372-1/10X-10 (ng/mL)
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	100	10
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	100	10
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	100	10
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	100	10
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	100	10
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	100	10
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	100	10
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	100	10
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	100	10
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	100	10
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	100	10
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	100	10

EC-5379	EN-1948-4 Marker PCB Extraction Standard	1.2 mL in nonane
EC-5379-5X1.2	EN-1948-4 Marker PCB Extraction Standard	5 × 1.2 mL in nonane
EC-5379-1/10X-10	EN-1948-4 Marker PCB Extraction Standard (1/10 concentration)	10 mL in nonane

Labeled	IUPAC	EC-5379 (ng/mL)	EC-5379-1/10X-10 (ng/mL)
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	1000	100
2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	52	1000	100
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	1000	100
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	1000	100
2,2',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	153	1000	100
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	1000	100

EC-5371	EN-1948-4 PCB Recovery Standard	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	100
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	100
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 99%)	170	100

JIS PCB Methods Standard Mixtures

Catalog No.	Compound	Amount
EC-5323-H	Modified JIS PCB Calibration Solutions [CS1H-CS5H]	Set of 5 × 0.2 mL in nonane/isooctane
EC-5323-H-E	Modified JIS PCB Extended Calibration Solutions [CS0.4H-CS6H]	Set of 7 × 0.2 mL in nonane/isooctane
EC-5323-CS0.4H	Modified JIS PCB Extended Calibration Solution [CS0.4H]	0.2 mL in nonane/isooctane
EC-5323-CS1H	Modified JIS PCB Extended Calibration Solution [CS1H]	0.2 mL in nonane/isooctane
EC-5323-CS2H	Modified JIS PCB Extended Calibration Solution [CS2H]	0.2 mL in nonane/isooctane
EC-5323-CS3H	Modified JIS PCB Extended Calibration Solution [CS3H]	0.2 mL in nonane/isooctane
EC-5323-CS4H	Modified JIS PCB Extended Calibration Solution [CS4H]	0.2 mL in nonane/isooctane
EC-5323-CS5H	Modified JIS PCB Extended Calibration Solution [CS5H]	0.2 mL in nonane/isooctane
EC-5323-CS6H	Modified JIS PCB Extended Calibration Solution [CS6H]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS0.4H	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H
3,4,4',5-TetraCB	81	0.1	0.25	1	5	20	100	500
3,3',4,4'-TetraCB	77	0.1	0.25	1	5	20	100	500
3,3',4,4',5-PentaCB	126	0.1	0.25	1	5	20	100	500
3,3',4,4',5,5'-HexaCB	169	0.1	0.25	1	5	20	100	500
2',3,4,4',5-PentaCB	123	0.1	0.25	1	5	20	100	500
2,3',4,4',5-PentaCB	118	0.1	0.25	1	5	20	100	500
2,3,3',4,4'-PentaCB	105	0.1	0.25	1	5	20	100	500
2,3,4,4',5-PentaCB	114	0.1	0.25	1	5	20	100	500
2,3',4,4',5,5'-HexaCB	167	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5-HexaCB	156	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5'-HexaCB	157	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5,5'-HeptaCB	189	0.1	0.25	1	5	20	100	500
2,2',3,3',4,4',5-HeptaCB	170	0.1	0.25	1	5	20	100	500
2,2',3,4,4',5,5'-HeptaCB	180	0.1	0.25	1	5	20	100	500
Cleanup								
3,4,4',5-TetraCB (¹³ C ₁₂ , 99%)	81	10	10	10	10	10	10	10
3,3',4,4'-TetraCB (¹³ C ₁₂ , 99%)	77	10	10	10	10	10	10	10
3,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	126	10	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	169	10	10	10	10	10	10	10
2',3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	123	10	10	10	10	10	10	10
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	20	20	20	20	20	20	20
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	20	20	20	20	20	20	20
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	10	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	167	10	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	20	20	20	20	20	20	20
2,3,3',4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	157	10	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	189	10	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	10	10	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	10	10	10	10	10	10	10
Syringe								
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	10	10	10	10	10	10	10
2,3,3',5,5'-PentaCB (¹³ C ₁₂ , 99%)	111	10	10	10	10	10	10	10
2,2',3,4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	138	10	10	10	10	10	10	10
2,2',3,3',5,5',6-HeptaCB (¹³ C ₁₂ , 99%)	178	10	10	10	10	10	10	10
Sampling								
3,3',4,5'-TetraCB (¹³ C ₁₂ , 99%)	79	10	10	10	10	10	10	10

JIS PCB Methods Standard Mixtures

Catalog No.	Compound	Amount
EC-5360	Modified JIS PCB Alternate A Extended Calibration Solutions [CS0.4H-CS6H]	Set of 7 × 0.2 mL in nonane/isooctane
EC-5360-CS0.4H	Modified JIS PCB Alternate A Extended Calibration Solution [CS0.4H]	0.2 mL in nonane/isooctane
EC-5360-CS1H	Modified JIS PCB Alternate A Extended Calibration Solution [CS1H]	0.2 mL in nonane/isooctane
EC-5360-CS2H	Modified JIS PCB Alternate A Extended Calibration Solution [CS2H]	0.2 mL in nonane/isooctane
EC-5360-CS3H	Modified JIS PCB Alternate A Extended Calibration Solution [CS3H]	0.2 mL in nonane/isooctane
EC-5360-CS4H	Modified JIS PCB Alternate A Extended Calibration Solution [CS4H]	0.2 mL in nonane/isooctane
EC-5360-CS5H	Modified JIS PCB Alternate A Extended Calibration Solution [CS5H]	0.2 mL in nonane/isooctane
EC-5360-CS6H	Modified JIS PCB Alternate A Extended Calibration Solution [CS6H]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS0.4H	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H
3,4,4',5-TetraCB	81	0.1	0.25	1	5	20	100	500
3,3',4,4'-TetraCB	77	0.1	0.25	1	5	20	100	500
3,3',4,4',5-PentaCB	126	0.1	0.25	1	5	20	100	500
3,3',4,4',5,5'-HexaCB	169	0.1	0.25	1	5	20	100	500
2',3,4,4',5-PentaCB	123	0.1	0.25	1	5	20	100	500
2,3',4,4',5-PentaCB	118	0.2	0.5	2	10	40	200	1000
2,3,3',4,4'-PentaCB	105	0.2	0.5	2	10	40	200	1000
2,3,4,4',5-PentaCB	114	0.1	0.25	1	5	20	100	500
2,3',4,4',5,5'-HexaCB	167	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5-HexaCB	156	0.2	0.5	2	10	40	200	1000
2,3,3',4,4',5'-HexaCB	157	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5,5'-HeptaCB	189	0.1	0.25	1	5	20	100	500
2,2',3,3',4,4',5-HeptaCB	170	0.1	0.25	1	5	20	100	500
2,2',3,4,4',5,5'-HeptaCB	180	0.1	0.25	1	5	20	100	500
Cleanup								
3,4,4',5-TetraCB (¹³ C ₁₂ , 99%)	81	10	10	10	10	10	10	10
3,3',4,4'-TetraCB (¹³ C ₁₂ , 99%)	77	10	10	10	10	10	10	10
3,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	126	10	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	169	10	10	10	10	10	10	10
2',3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	123	10	10	10	10	10	10	10
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	20	20	20	20	20	20	20
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	20	20	20	20	20	20	20
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	10	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	167	10	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	20	20	20	20	20	20	20
2,3,3',4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	157	10	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	189	10	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	10	10	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	10	10	10	10	10	10	10
Syringe								
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	10	10	10	10	10	10	10
2,3,3',5,5'-PentaCB (¹³ C ₁₂ , 99%)	111	10	10	10	10	10	10	10
2,2',3,4,4',5-HexaCB (¹³ C ₁₂ , 99%)	138	10	10	10	10	10	10	10
2,2',3,3',5,5',6-HeptaCB (¹³ C ₁₂ , 99%)	178	10	10	10	10	10	10	10
Sampling								
3,3',4,5'-TetraCB (¹³ C ₁₂ , 99%)	79	10	10	10	10	10	10	10

JIS PCB Methods Standard Mixtures

Catalog No.	Compound	Amount
EC-5324	Modified JIS PCB Cleanup Spike	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	50
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	50
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	50
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	50
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	50
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	100
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	100
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	50
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	50
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	100
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	50
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	50
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 99%)	170	50
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	50

EC-5325	Modified JIS PCB Syringe Spike	1.2 mL in nonane
EC-5325-0.2X	Modified JIS PCB Syringe Spike	10 mL in nonane
EC-5325-20X	Modified JIS PCB Syringe Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5325 (ng/mL)	EC-5325-0.2X (ng/mL)	EC-5325-20X (ng/mL)
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	50	10	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	50	10	1000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	50	10	1000
2,2',3,3',5,5',6-HeptaCB ($^{13}\text{C}_{12}$, 99%)	178	50	10	1000

EC-5326	Modified JIS PCB Sampling Spike	1.2 mL in nonane
NEW EC-5326-20X	Modified JIS PCB Sampling Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5326 (ng/mL)	EC-5326-20X (ng/mL)
3,3',4,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	79	50	1000

JIS PCB Methods Standard Mixtures

Catalog No.	Compound	Amount
EC-5418	Modified JIS PCB Alternate B Calibration Solutions [CS1H-CS5H]	Set of 5 x 0.2 mL in nonane/isooctane
EC-5418-CS0.4H	Modified JIS PCB Alternate B Calibration Solution [CS0.4H] (not included with EC-5418)	0.2 mL in nonane/isooctane
EC-5418-CS6H	Modified JIS PCB Alternate B Calibration Solution [CS6H] (not included with EC-5418)	0.2 mL in nonane/isooctane
EC-5418-CS1H	Modified JIS PCB Alternate B Calibration Solution [CS1H]	0.2 mL in nonane/isooctane
EC-5418-CS2H	Modified JIS PCB Alternate B Calibration Solution [CS2H]	0.2 mL in nonane/isooctane
EC-5418-CS3H	Modified JIS PCB Alternate B Calibration Solution [CS3H]	0.2 mL in nonane/isooctane
EC-5418-CS4H	Modified JIS PCB Alternate B Calibration Solution [CS4H]	0.2 mL in nonane/isooctane
EC-5418-CS5H	Modified JIS PCB Alternate B Calibration Solution [CS5H]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS0.4H	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H
3,4,4',5-TetraCB	81	0.1	0.25	1	5	20	100	500
3,3',4,4'-TetraCB	77	0.1	0.25	1	5	20	100	500
3,3',4,4',5-PentaCB	126	0.1	0.25	1	5	20	100	500
3,3',4,4',5,5'-HexaCB	169	0.1	0.25	1	5	20	100	500
2',3,4,4',5-PentaCB	123	0.1	0.25	1	5	20	100	500
2,3',4,4',5-PentaCB	118	0.2	0.5	2	10	40	200	1000
2,3,3',4,4'-PentaCB	105	0.2	0.5	2	10	40	200	1000
2,3,4,4',5-PentaCB	114	0.1	0.25	1	5	20	100	500
2,3',4,4',5,5'-HexaCB	167	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5-HexaCB	156	0.2	0.5	2	10	40	200	1000
2,3,3',4,4',5'-HexaCB	157	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5,5'-HeptaCB	189	0.1	0.25	1	5	20	100	500
Cleanup								
3,4,4',5-TetraCB (¹³ C ₁₂ , 99%)	81	4	10	10	10	10	10	10
3,3',4,4'-TetraCB (¹³ C ₁₂ , 99%)	77	4	10	10	10	10	10	10
3,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	126	4	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	169	4	10	10	10	10	10	10
2',3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	123	4	10	10	10	10	10	10
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	8	20	20	20	20	20	20
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	8	20	20	20	20	20	20
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	4	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	167	4	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	8	20	20	20	20	20	20
2,3,3',4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	157	4	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	189	4	10	10	10	10	10	10
Syringe								
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	4	10	10	10	10	10	10
2,3,3',5,5'-PentaCB (¹³ C ₁₂ , 99%)	111	4	10	10	10	10	10	10
2,2',3,4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	138	4	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	4	10	10	10	10	10	10
Sampling								
3,3',4,5'-TetraCB (¹³ C ₁₂ , 99%)	79	4	10	10	10	10	10	10

JIS PCB Methods Standard Mixtures

Catalog No.	Compound	Amount
EC-5419	Modified JIS PCB Alternate B Cleanup Solution	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	50
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	50
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	50
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	100
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	50
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	100
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	50
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	50
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	100
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	50
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	50
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	50

EC-5420	Modified JIS PCB Alternate B Syringe Spike	1.2 mL in nonane
EC-5163	PCB Mixture (PCB-70/111/138/170)	1.2 mL in nonane

Labeled	IUPAC	EC-5420 (ng/mL)	EC-5163 (ng/mL)
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	50	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	50	1000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	50	1000
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 99%)	170	50	1000

EC-5326	Modified JIS PCB Sampling Spike	1.2 mL in nonane
NEW EC-5326-20X	Modified JIS PCB Sampling Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5326 (ng/mL)	EC-5326-20X (ng/mL)
3,3',4,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	79	50	1000

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-5421-H-E	DL-PCB RH12 Extended Calibration Solutions [CS0.4H-CS6H]	Set of 7 × 0.2 mL in nonane
EC-5421-H	DL-PCB RH12 Calibration Solutions [CS1H-CS5H]	Set of 5 × 0.2 mL in nonane
EC-5421-CS0.4H	DL-PCB RH12 Extended Calibration Solution [CS0.4H]	0.2 mL in nonane
EC-5421-CS1H	DL-PCB RH12 Calibration Solution [CS1H]	0.2 mL in nonane
EC-5421-CS2H	DL-PCB RH12 Calibration Solution [CS2H]	0.2 mL in nonane
EC-5421-CS3H	DL-PCB RH12 Calibration Solution [CS3H]	0.2 mL in nonane
EC-5421-CS4H	DL-PCB RH12 Calibration Solution [CS4H]	0.2 mL in nonane
EC-5421-CS5H	DL-PCB RH12 Calibration Solution [CS5H]	0.2 mL in nonane
EC-5421-CS6H	DL-PCB RH12 Extended Calibration Solution [CS6H]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS0.4H	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H
3,4,4',5-TetraCB	81	0.1	0.25	1	5	20	100	500
3,3',4,4'-TetraCB	77	0.1	0.25	1	5	20	100	500
2',3,4,4',5-PentaCB	123	0.1	0.25	1	5	20	100	500
2,3',4,4',5-PentaCB	118	0.2	0.5	2	10	40	200	1000
2,3,4,4',5-PentaCB	114	0.1	0.25	1	5	20	100	500
2,3,3',4,4'-PentaCB	105	0.2	0.5	2	10	40	200	1000
3,3',4,4',5-PentaCB	126	0.1	0.25	1	5	20	100	500
2,3',4,4',5,5'-HexaCB	167	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5-HexaCB	156	0.2	0.5	2	10	40	200	1000
2,3,3',4,4',5'-HexaCB	157	0.1	0.25	1	5	20	100	500
2,2',3,4,4',5,5'-HeptaCB	180	0.1	0.25	1	5	20	100	500
3,3',4,4',5,5'-HexaCB	169	0.1	0.25	1	5	20	100	500
2,2',3,3',4,4',5-HeptaCB	170	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5,5'-HeptaCB	189	0.1	0.25	1	5	20	100	500
Extraction								
3,4,4',5-TetraCB (¹³ C ₁₂ , 99%)	81	10	10	10	10	10	10	10
3,3',4,4'-TetraCB (¹³ C ₁₂ , 99%)	77	10	10	10	10	10	10	10
2',3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	123	10	10	10	10	10	10	10
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	20	20	20	20	20	20	20
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	10	10	10	10	10	10	10
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	20	20	20	20	20	20	20
3,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	126	10	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	167	10	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	20	20	20	20	20	20	20
2,3,3',4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	157	10	10	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	10	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	169	10	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	189	10	10	10	10	10	10	10
Syringe								
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	10	10	10	10	10	10	10
3,3',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	127	10	10	10	10	10	10	10
2,2',3,3',4,4'-HexaCB (¹³ C ₁₂ , 99%)	128	10	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	10	10	10	10	10	10	10
Sampling								
2,3,4,4'-TetraCB (¹³ C ₁₂ , 99%)	60	10	10	10	10	10	10	10
2,3,3',5,5'-PentaCB (¹³ C ₁₂ , 99%)	111	10	10	10	10	10	10	10
2,3,3',4,5,5'-HexaCB (¹³ C ₁₂ , 99%)	159	10	10	10	10	10	10	10

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-5422	DL-PCB RH12 Extraction Spike	1.2 mL in nonane
NEW EC-5422-10X	DL-PCB RH12 Extraction Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5422 (ng/mL)	EC-5422-10X (ng/mL)
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	100	1000
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	100	1000
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	100	1000
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	200	2000
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	100	1000
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	200	2000
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	100	1000
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	100	1000
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	200	2000
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	100	1000
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	100	1000
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	100	1000
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	100	1000

EC-5423	DL-PCB RH12 Syringe Spike	1.2 mL in nonane
EC-5423-10X	DL-PCB RH12 Syringe Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5423 (ng/mL)	EC-5423-10X (ng/mL)
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	100	1000
3,3',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	127	100	1000
2,2',3,3',4,4'-HexaCB ($^{13}\text{C}_{12}$, 99%)	128	100	1000
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 99%)	170	100	1000

EC-5424	DL-PCB RH12 Sampling Spike	1.2 mL in nonane
NEW EC-5424-10X	DL-PCB RH12 Sampling Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5424 (ng/mL)	EC-5424-10X (ng/mL)
2,3,4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	60	100	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	100	1000
2,3,3',4,5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	159	100	1000

NEW EC-5505-10X	DL-PCB RH12 Native Spike (excluding PCB-170)	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
3,4,4',5-TetraCB	81	1000
3,3',4,4'-TetraCB	77	1000
2',3,4,4',5-PentaCB	123	1000
2,3',4,4',5-PentaCB	118	2000
2,3,4,4',5-PentaCB	114	1000
2,3,3',4,4'-PentaCB	105	2000
3,3',4,4',5-PentaCB	126	1000
2,3',4,4',5,5'-HexaCB	167	1000
2,3,3',4,4',5-HexaCB	156	2000
2,3,3',4,4',5'-HexaCB	157	1000
3,3',4,4',5,5'-HexaCB	169	1000
2,2',3,4,4',5,5'-HeptaCB	180	1000
2,3,3',4,4',5,5'-HeptaCB	189	1000

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-5396	Co-PCB Calibration Solutions [CS1-CS6]	Set of 6 × 0.2 mL in nonane
EC-5396-CS1	Co-PCB Calibration Solution [CS1]	0.2 mL in nonane
EC-5396-CS2	Co-PCB Calibration Solution [CS2]	0.2 mL in nonane
EC-5396-CS3	Co-PCB Calibration Solution [CS3]	0.2 mL in nonane
EC-5396-CS4	Co-PCB Calibration Solution [CS4]	0.2 mL in nonane
EC-5396-CS5	Co-PCB Calibration Solution [CS5]	0.2 mL in nonane
EC-5396-CS6	Co-PCB Calibration Solution [CS6]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6
3,4,4',5-TetraCB	81	0.2	0.5	2	10	50	200
3,3',4,4'-TetraCB	77	0.2	0.5	2	10	50	200
3,3',4,4',5-PentaCB	126	0.2	0.5	2	10	50	200
3,3',4,4',5,5'-HexaCB	169	0.2	0.5	2	10	50	200
2',3,4,4',5-PentaCB	123	0.2	0.5	2	10	50	200
2,3',4,4',5-PentaCB	118	0.2	0.5	2	10	50	200
2,3,3',4,4'-PentaCB	105	0.2	0.5	2	10	50	200
2,3,4,4',5-PentaCB	114	0.2	0.5	2	10	50	200
2,3',4,4',5,5'-HexaCB	167	0.2	0.5	2	10	50	200
2,3,3',4,4',5-HexaCB	156	0.2	0.5	2	10	50	200
2,3,3',4,4',5'-HexaCB	157	0.2	0.5	2	10	50	200
2,3,3',4,4',5,5'-HeptaCB	189	0.2	0.5	2	10	50	200
2,2',3,3',4,4',5-HeptaCB	170	0.2	0.5	2	10	50	200
2,2',3,4,4',5,5'-HeptaCB	180	0.2	0.5	2	10	50	200
Labeled							
3,4,4',5-TetraCB (¹³ C ₁₂ , 99%)	81	10	10	10	10	10	10
3,3',4,4'-TetraCB (¹³ C ₁₂ , 99%)	77	10	10	10	10	10	10
3,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	126	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	169	10	10	10	10	10	10
2',3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	123	10	10	10	10	10	10
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	10	10	10	10	10	10
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	10	10	10	10	10	10
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	167	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	10	10	10	10	10	10
2,3,3',4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	157	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	189	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	10	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	10	10	10	10	10	10
Syringe							
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	10	10	10	10	10	10
2,3,3',5,5'-PentaCB (¹³ C ₁₂ , 99%)	111	10	10	10	10	10	10
2,2',3,4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	138	10	10	10	10	10	10
2,2',3,3',5,5',6-HeptaCB (¹³ C ₁₂ , 99%)	178	10	10	10	10	10	10
Sampling							
3,3',4,5'-TetraCB (¹³ C ₁₂ , 99%)	79	10	10	10	10	10	10

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-5315	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solutions (low) [CS1-CS5]	Set of 5 × 0.2 mL in nonane
EC-5315-1	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solution [CS1]	0.2 mL in nonane
EC-5315-2	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solution [CS2]	0.2 mL in nonane
EC-5315-3	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solution [CS3]	0.2 mL in nonane
EC-5315-4	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solution [CS4]	0.2 mL in nonane
EC-5315-5	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solution [CS5]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5
3,3',4,4'-TetraCB	77	0.2	1	5	20	100
3,4,4',5-TetraCB	81	0.2	1	5	20	100
2,3,3',4,4'-PentaCB	105	0.2	1	5	20	100
2,3,4,4',5-PentaCB	114	0.2	1	5	20	100
2,3',4,4',5-PentaCB	118	0.2	1	5	20	100
2',3,4,4',5-PentaCB	123	0.2	1	5	20	100
3,3',4,4',5-PentaCB	126	0.2	1	5	20	100
2,3,3',4,4',5-HexaCB	156	0.2	1	5	20	100
2,3,3',4,4',5'-HexaCB	157	0.2	1	5	20	100
2,3',4,4',5,5'-HexaCB	167	0.2	1	5	20	100
3,3',4,4',5,5'-HexaCB	169	0.2	1	5	20	100
2,2',3,3',4,4',5-HeptaCB	170	0.2	1	5	20	100
2,2',3,4,4',5,5'-HeptaCB	180	0.2	1	5	20	100
2,3,3',4,4',5,5'-HeptaCB	189	0.2	1	5	20	100
Labeled						
3,3',4,4'-TetraCB (¹³ C ₁₂ , 99%)	77	10	10	10	10	10
3,4,4',5-TetraCB (¹³ C ₁₂ , 99%)	81	10	10	10	10	10
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	10	10	10	10	10
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	10	10	10	10	10
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	10	10	10	10	10
2',3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	123	10	10	10	10	10
3,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	126	10	10	10	10	10
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	10	10	10	10	10
2,3,3',4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	157	10	10	10	10	10
2,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	167	10	10	10	10	10
3,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	169	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	189	10	10	10	10	10
Syringe						
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	10	10	10	10	10
2,3,3',5,5'-PentaCB (¹³ C ₁₂ , 99%)	111	10	10	10	10	10
2,2',3,4,4',5-HexaCB (¹³ C ₁₂ , 99%)	138	10	10	10	10	10
Sampling						
3,3',4,5'-TetraCB (¹³ C ₁₂ , 99%)	79	10	10	10	10	10

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-5186	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane/isooctane
EC-5186-CS1	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Solution [CS1]	0.2 mL in nonane/isooctane
EC-5186-CS2	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Solution [CS2]	0.2 mL in nonane/isooctane
EC-5186-CS3	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Solution [CS3]	0.2 mL in nonane/isooctane
EC-5186-CS4	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Solution [CS4]	0.2 mL in nonane/isooctane
EC-5186-CS5	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Solution [CS5]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5
3,3',4,4'-TetraCB	77	0.5	2	10	50	250
3,4,4',5-TetraCB	81	0.5	2	10	50	250
3,3',4,4',5-PentaCB	126	0.5	2	10	50	250
3,3',4,4',5,5'-HexaCB	169	0.5	2	10	50	250
2',3,4,4',5-PentaCB	123	0.5	2	10	50	250
2,3',4,4',5-PentaCB	118	0.5	2	10	50	250
2,3,3',4,4'-PentaCB	105	0.5	2	10	50	250
2,3,4,4',5-PentaCB	114	0.5	2	10	50	250
2,3',4,4',5,5'-HexaCB	167	0.5	2	10	50	250
2,3,3',4,4',5-HexaCB	156	0.5	2	10	50	250
2,3,3',4,4',5'-HexaCB	157	0.5	2	10	50	250
2,3,3',4,4',5,5'-HeptaCB	189	0.5	2	10	50	250
2,2',3,4,4',5,5'-HeptaCB	180	0.5	2	10	50	250
2,2',3,3',4,4',5-HeptaCB	170	0.5	2	10	50	250
Labeled						
3,3',4,4'-TetraCB (¹³ C ₁₂ , 99%)	77	10	10	10	10	10
3,4,4',5-TetraCB (¹³ C ₁₂ , 99%)	81	10	10	10	10	10
3,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	126	10	10	10	10	10
3,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	169	10	10	10	10	10
2',3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	123	10	10	10	10	10
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	10	10	10	10	10
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	10	10	10	10	10
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	10	10	10	10	10
2,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	167	10	10	10	10	10
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	10	10	10	10	10
2,3,3',4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	157	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	189	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	10	10	10	10	10
Syringe						
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	10	10	10	10	10
2,3,3',5,5'-PentaCB (¹³ C ₁₂ , 99%)	111	10	10	10	10	10
2,2',3,4,4',5-HexaCB (¹³ C ₁₂ , 99%)	138	10	10	10	10	10
Sampling						
3,3',4,5'-TetraCB (¹³ C ₁₂ , 99%)	79	10	10	10	10	10

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-4937	WHO Coplanar and Mono-Ortho PCBs	3 mL in nonane

Labeled	IUPAC	(ng/mL)
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	1000
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	1000
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	1000
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	1000
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	1000
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	1000
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	1000
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	1000
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	1000
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	1000
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	1000
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	1000

EC-4995	WHO Coplanar and Mono-Ortho PCBs with PCB 170/180	1.2 mL in nonane
EC-5045	WHO PCB + PCB-170 + PCB-180 Cleanup Standard	1.2 mL in nonane

Labeled	IUPAC	EC-4995 (ng/mL)	EC-5045 (ng/mL)
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	1000	2000
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	1000	2000
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	1000	2000
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	1000	2000
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	1000	2000
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	1000	2000
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	1000	2000
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	1000	2000
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	1000	2000
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	1000	2000
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	1000	2000
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 99%)	170	1000	2000
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	1000	2000
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	1000	2000

EC-5397	Co-PCB Syringe Spike	1.2 mL in nonane
EC-5181	PCB Syringe Spike	1.2 mL in nonane
EC-5181-10X-1.2	PCB Syringe Spike (10X stock)	1.2 mL in nonane

Labeled	IUPAC	EC-5397 (ng/mL)	EC-5181 (ng/mL)	EC-5181-10X-1.2 (ng/mL)
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	20	100	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	20	100	1000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	20	100	1000
2,2',3,3',5,5',6-HeptaCB ($^{13}\text{C}_{12}$, 99%)	178	20	—	—

EC-5326	Modified JIS PCB Sampling Spike	1.2 mL in nonane
NEW EC-5326-20X	Modified JIS PCB Sampling Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5326 (ng/mL)	EC-5326-20X (ng/mL)
3,3',4,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	79	50	1000

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-4070	Coplanar PCB Mixture	3 mL in nonane

Labeled	IUPAC	(ng/mL)
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	5000
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	5000
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	5000

EC-4187	Coplanar PCB Mixture	3 mL in nonane
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Labeled	IUPAC	(ng/mL)
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	1000
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	1000
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	1000
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	1000

EC-4188	Mono-Ortho PCB Mixture – *High Purity	3 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	1000
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	1000
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	1000
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	1000
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	1000
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	1000
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	1000
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	1000

EC-4938	PCB Mixture-A	3 mL in nonane
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Labeled	IUPAC	(ng/mL)
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	1000
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	1000
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	1000
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	1000
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	1000
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	1000

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-4935	WHO Coplanar and Mono-Ortho PCBs	1.2 mL in isooctane
EC-4935-A	WHO Coplanar and Mono-Ortho PCBs	3 mL in isooctane
EC-4935-B	WHO Coplanar and Mono-Ortho PCBs	1.2 mL in isooctane
NEW EC-5559	DL-PCB Native Plus Mixture	1.2 mL in isooctane

Unlabeled	IUPAC	EC-4935 (ng/mL)	EC-4935-A (ng/mL)	EC-4935-B (ng/mL)	EC-5559 (ng/mL)
3,3',4,4'-TetraCB	77	2000	1000	5000	2000
3,4,4',5-TetraCB	81	2000	1000	5000	1000
2,3,3',4,4'-PentaCB	105	2000	1000	5000	2000
2,3,4,4',5-PentaCB	114	2000	1000	5000	1000
2,3',4,4',5-PentaCB	118	2000	1000	5000	5000
2',3,4,4',5-PentaCB	123	2000	1000	5000	1000
3,3',4,4',5-PentaCB	126	2000	1000	5000	1000
2,3,3',4,4',5-HexaCB	156	2000	1000	5000	2000
2,3,3',4,4',5'-HexaCB	157	2000	1000	5000	1000
2,3',4,4',5,5'-HexaCB	167	2000	1000	5000	1000
3,3',4,4',5,5'-HexaCB	169	2000	1000	5000	1000
2,3,3',4,4',5,5'-HeptaCB	189	2000	1000	5000	1000

EC-5000	WHO Coplanar and Mono-Ortho PCBs and 170/180	1.2 mL in isooctane
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Unlabeled	IUPAC	(ng/mL)
3,3',4,4'-TetraCB	77	2000
3,4,4',5-TetraCB	81	2000
2,3,3',4,4'-PentaCB	105	2000
2,3,4,4',5-PentaCB	114	2000
2,3',4,4',5-PentaCB	118	2000
2',3,4,4',5-PentaCB	123	2000
3,3',4,4',5-PentaCB	126	2000
2,3,3',4,4',5-HexaCB	156	2000
2,3,3',4,4',5'-HexaCB	157	2000
2,3',4,4',5,5'-HexaCB	167	2000
3,3',4,4',5,5'-HexaCB	169	2000
2,2',3,3',4,4',5-HeptaCB	170	2000
2,2',3,4,4',5,5'-HeptaCB	180	2000
2,3,3',4,4',5,5'-HeptaCB	189	2000

EC-4986	Non-Ortho Native PCB Solution	1.2 mL in isooctane
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Unlabeled	IUPAC	(ng/mL)
3,3',4,4'-TetraCB	77	10,000
3,4,4',5-TetraCB	81	10,000
3,3',4,4',5-PentaCB	126	10,000
3,3',4,4',5,5'-HexaCB	169	10,000

EC-4987	Mono-Ortho Native PCB Solution	1.2 mL in isooctane
EC-4987/100	Mono-Ortho Native PCB Solution	100 µL in isooctane

Unlabeled	IUPAC	EC-4987 (ng/mL)	EC-4987/100 (ng/mL)
2,3,3',4,4'-PentaCB	105	10,000	100
2,3,4,4',5-PentaCB	114	10,000	100
2,3',4,4',5-PentaCB	118	10,000	100
2',3,4,4',5-PentaCB	123	10,000	100
2,3,3',4,4',5-HexaCB	156	10,000	100
2,3,3',4,4',5'-HexaCB	157	10,000	100
2,3',4,4',5,5'-HexaCB	167	10,000	100
2,3,3',4,4',5,5'-HeptaCB	189	10,000	100

“Non-Dioxin-Like” (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5414	Mono-Deca Plus Predominant PCB Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane/isooctane
EC-5414-CS1	Mono-Deca Plus Predominant PCB Calibration Solution [CS1]	0.2 mL in nonane/isooctane
EC-5414-CS2	Mono-Deca Plus Predominant PCB Calibration Solution [CS2]	0.2 mL in nonane/isooctane
EC-5414-CS3	Mono-Deca Plus Predominant PCB Calibration Solution [CS3]	0.2 mL in nonane/isooctane
EC-5414-CS4	Mono-Deca Plus Predominant PCB Calibration Solution [CS4]	0.2 mL in nonane/isooctane
EC-5414-CS5	Mono-Deca Plus Predominant PCB Calibration Solution [CS5]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5
4-MonoCB	3	4	20	100	500	2000
2,4'-DiCB	8	4	20	100	500	2000
2,4,4'-TriCB	28	2	10	50	250	1000
2,2',5,5'-TetraCB	52	2	10	50	250	1000
2,2',4,5,5'-PentaCB	101	2	10	50	250	1000
2,3',4,4',5-PentaCB	118	2	10	50	250	1000
2,3,4,4',5-PentaCB	114	2	10	50	250	1000
2,2',3,4,4',5'-HexaCB	138	2	10	50	250	1000
2,2',4,4',5,5'-HexaCB	153	2	10	50	250	1000
2,2',3,4,4',5,5'-HeptaCB	180	2	10	50	250	1000
2,2',3,3',4,4',5,5'-OctaCB	194	4	20	100	500	2000
2,2',3,3',4,4',5,5',6-NonaCB	206	4	20	100	500	2000
DecaCB	209	4	20	100	500	2000
Labeled						
4-MonoCB (¹³ C ₁₂ , 99%)	3	100	100	100	100	100
2,4'-DiCB (¹³ C ₁₂ , 99%)	8	100	100	100	100	100
2,4,4'-TriCB (¹³ C ₁₂ , 99%)	28	100	100	100	100	100
2,2',5,5'-TetraCB (¹³ C ₁₂ , 99%)	52	100	100	100	100	100
2,2',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	101	100	100	100	100	100
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	100	100	100	100	100
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	100	100	100	100	100
2,2',3,4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	138	100	100	100	100	100
2,2',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	153	100	100	100	100	100
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	100	100	100	100	100
2,2',3,3',4,4',5,5'-OctaCB (¹³ C ₁₂ , 99%)	194	100	100	100	100	100
2,2',3,3',4,4',5,5',6-NonaCB (¹³ C ₁₂ , 99%)	206	100	100	100	100	100
DecaCB (¹³ C ₁₂ , 99%)	209	100	100	100	100	100
Syringe						
2,4',6-TriCB (¹³ C ₁₂ , 99%)	32	100	100	100	100	100
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	100	100	100	100	100
3,3',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	127	100	100	100	100	100
2,2',3,3',4,4'-HexaCB (¹³ C ₁₂ , 99%)	128	100	100	100	100	100
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	100	100	100	100	100

“Non-Dioxin-Like” (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5411	Predominant Mono-Deca PCB Spike	1.2 mL in nonane
NEW EC-5411-A	Modified Predominant Mono-Deca PCB Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5411 (ng/mL)	EC-5411-A (ng/mL)
4-MonoCB ($^{13}\text{C}_{12}$, 99%)	3	2000	2000
2,4'-DiCB ($^{13}\text{C}_{12}$, 99%)	8	2000	2000
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	2000	1000
2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	52	2000	1000
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	2000	1000
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	2000	1000
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	2000	1000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	2000	1000
2,2',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	153	2000	1000
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	2000	1000
2,2',3,3',4,4',5,5'-OctaCB ($^{13}\text{C}_{12}$, 99%)	194	2000	2000
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}\text{C}_{12}$, 99%)	206	2000	2000
DecaCB ($^{13}\text{C}_{12}$, 99%)	209	2000	2000

EC-5415	Mono-Deca Plus Predominant PCB Syringe Spike	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,4',6-TriCB ($^{13}\text{C}_{12}$, 99%)	32	2000
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	2000
3,3',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	127	2000
2,2',3,3',4,4'-HexaCB ($^{13}\text{C}_{12}$, 99%)	128	2000
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 99%)	170	2000

EC-5412	Native Mono-Deca Plus Predominant Spike PCBs	1.2 mL in iso-octane
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Unlabeled	IUPAC	(ng/mL)
4-MonoCB	3	2000
2,4'-DiCB	8	2000
2,4,4'-TriCB	28	2000
2,2',5,5'-TetraCB	52	2000
2,2',4,5,5'-PentaCB	101	2000
2,3',4,4',5-PentaCB	118	2000
2,3,4,4',5-PentaCB	114	2000
2,2',3,4,4',5'-HexaCB	138	2000
2,2',4,4',5,5'-HexaCB	153	2000
2,2',3,4,4',5,5'-HeptaCB	180	2000
2,2',3,3',4,4',5,5'-OctaCB	194	2000
2,2',3,3',4,4',5,5',6-NonaCB	206	2000
DecaCB	209	2000

“Non-Dioxin-Like” (Marker/Indicator) PCB Mixtures

	Catalog No.	Compound	Amount
NEW	EC-5448-HR	Rapid PCB Screening Calibration Solutions [CS0.02, 0.05, 0.1, 0.5]	Set of 4 × 0.2 mL in nonane/isooctane
NEW	EC-5448-CS0.02	HRMS Rapid PCB Screening Calibration Solution [CS0.02]	0.2 mL in nonane/isooctane
NEW	EC-5448-CS0.05	HRMS Rapid PCB Screening Calibration Solution [CS0.05]	0.2 mL in nonane/isooctane
NEW	EC-5448-CS0.1	HRMS Rapid PCB Screening Calibration Solution [CS0.1]	0.2 mL in nonane/isooctane
NEW	EC-5448-CS0.5	HRMS Rapid PCB Screening Calibration Solution [CS0.5]	0.2 mL in nonane/isooctane
	EC-5448	Rapid PCB Screening Calibration Solutions [CS1-CS4]	Set of 4 × 0.2 mL in nonane/isooctane
	EC-5448-CS1	Rapid PCB Screening Calibration Solution [CS1]	0.2 mL in nonane/isooctane
	EC-5448-CS2	Rapid PCB Screening Calibration Solution [CS2]	0.2 mL in nonane/isooctane
	EC-5448-CS3	Rapid PCB Screening Calibration Solution [CS3]	0.2 mL in nonane/isooctane
	EC-5448-CS4	Rapid PCB Screening Calibration Solution [CS4]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS0.02	CS0.05	CS0.1	CS0.5	CS1	CS2	CS3	CS4
2,4,4'-TriCB	28	0.02	0.05	0.1	0.5	1	5	10	50
2,2',5'-TriCB	18	0.02	0.05	0.1	0.5	1	5	10	50
2,2',3,5'-TetraCB	44	0.02	0.05	0.1	0.5	1	5	10	50
2,3',4',5'-TetraCB	70	0.02	0.05	0.1	0.5	1	5	10	50
2,2',5,5'-TetraCB	52	0.02	0.05	0.1	0.5	1	5	10	50
2,2',4,5,5'-PentaCB	101	0.02	0.05	0.1	0.5	1	5	10	50
2,3,3',4',6-PentaCB	110	0.02	0.05	0.1	0.5	1	5	10	50
2,3',4,4',5-PentaCB	118	0.02	0.05	0.1	0.5	1	5	10	50
2,2',3,4',5',6-HexaCB	149	0.02	0.05	0.1	0.5	1	5	10	50
2,2',3,4,4',5'-HexaCB	138	0.02	0.05	0.1	0.5	1	5	10	50
2,2',4,4',5,5'-HexaCB	153	0.02	0.05	0.1	0.5	1	5	10	50
2,2',3,4,4',5,5'-HeptaCB	180	0.02	0.05	0.1	0.5	1	5	10	50
2,2',3,4',5,5',6-HeptaCB	187	0.02	0.05	0.1	0.5	1	5	10	50
Extraction									
2,4,4'-TriCB (¹³ C ₁₂ , 99%)	28	10	10	10	10	10	10	10	10
2,2',5,5'-TetraCB (¹³ C ₁₂ , 99%)	52	10	10	10	10	10	10	10	10
2,2',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	101	10	10	10	10	10	10	10	10
2,2',3,4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	138	10	10	10	10	10	10	10	10
2,2',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	153	10	10	10	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	10	10	10	10	10	10	10	10
Syringe									
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	10	10	10	10	10	10	10	10
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	10	10	10	10	10	10	10	10
2,2',3,4,5,5'-HexaCB (¹³ C ₁₂ , 99%)	141	10	10	10	10	10	10	10	10

“Non-Dioxin-Like” (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5379	EN-1948-4 Marker PCB Extraction Standard	1.2 mL in nonane
EC-5379-5X1.2	EN-1948-4 Marker PCB Extraction Standard	5 × 1.2 mL in nonane
EC-5379-1/10X-10	EN-1948-4 Marker PCB Extraction Standard (1/10 concentration)	10 mL in nonane

Labeled	IUPAC	EC-5379 (ng/mL)	EC-5379-1/10X-10 (ng/mL)
2,4,4'-TriCB (¹³ C ₁₂ , 99%)	28	1000	100
2,2',5,5'-TetraCB (¹³ C ₁₂ , 99%)	52	1000	100
2,2',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	101	1000	100
2,2',3,4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	138	1000	100
2,2',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	153	1000	100
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	1000	100

EC-5450	Rapid PCB Screening Syringe Spike	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,3',4',5'-TetraCB (¹³ C ₁₂ , 99%)	70	2000
2,3',4,4',5'-PentaCB (¹³ C ₁₂ , 99%)	118	2000
2,2',3,4,5,5'-HexaCB (¹³ C ₁₂ , 99%)	141	2000

EC-5453	Rapid PCB Screening Native PAR Solution	0.5 mL in isooctane
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Unlabeled	IUPAC	(ng/mL)
2,4,4'-TriCB	28	1000
2,2',5-TriCB	18	1000
2,2',3,5'-TetraCB	44	1000
2,3',4',5-TetraCB	70	1000
2,2',5,5'-TetraCB	52	1000
2,2',4,5,5'-PentaCB	101	1000
2,3,3',4',6-PentaCB	110	1000
2,3',4,4',5-PentaCB	118	1000
2,2',3,4',5',6-HexaCB	149	1000
2,2',3,4,4',5'-HexaCB	138	1000
2,2',4,4',5,5'-HexaCB	153	1000
2,2',3,4,4',5,5'-HeptaCB	180	1000
2,2',3,4',5,5',6-HeptaCB	187	1000

“Non-Dioxin-Like” (Marker/Indicator) PCB Mixtures

	Catalog No.	Compound	Amount
NEW	EC-5375	Marker-7 PCB Mixture (with PCB-118)	1.2 mL in nonane
NEW	EC-5375-1/10X-10	Marker-7 PCB Mixture (with PCB-118)	10 mL in nonane

Labeled	IUPAC	EC-5375 (ng/mL)	EC-5375-1/10X-10 (ng/mL)
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	1000	100
2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	52	1000	100
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	1000	100
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	1000	100
2,2',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	153	1000	100
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	1000	100
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	1000	100

EC-4058	PCB Mixture	3 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	5000
2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	52	5000
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	5000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	5000
2,2',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	153	5000
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	5000
DecaCB ($^{13}\text{C}_{12}$, 99%)	209	5000

EC-4189-A	Mono-Deca PCB Mixture	3 mL in nonane
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Labeled	IUPAC	(ng/mL)
4-MonoCB ($^{13}\text{C}_{12}$, 99%)	3	1000
4,4'-DiCB ($^{13}\text{C}_{12}$, 99%)	15	1000
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	1000
2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	52	1000
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	1000
2,2',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	153	1000
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	1000
2,2',3,3',4,4',5,5'-OctaCB ($^{13}\text{C}_{12}$, 99%)	194	1000
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}\text{C}_{12}$, 99%)	208	1000
DecaCB ($^{13}\text{C}_{12}$, 99%)	209	1000

“Non-Dioxin-Like” (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
NEW EC-5495	Marker-7 PCB Mixture (with PCB-118)	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2,4,4'-TriCB	28	1000
2,2',5,5'-TetraCB	52	1000
2,2',4,5,5'-PentaCB	101	1000
2,3',4,4',5-PentaCB	118	1000
2,2',4,4',5,5'-HexaCB	153	1000
2,2',3,4,4',5'-HexaCB	138	1000
2,2',3,4,4',5,5'-HeptaCB	180	1000

EC-5179	PCB Mixture	3 mL in isooctane
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Unlabeled	IUPAC	(ng/mL)
2,4,4'-TriCB	28	5000
2,2',5,5'-TetraCB	52	5000
2,2',4,5,5'-PentaCB	101	5000
2,2',3,4,4',5'-HexaCB	138	5000
2,2',4,4',5,5'-HexaCB	153	5000
2,2',3,4,4',5,5'-HeptaCB	180	5000
DecaCB	209	5000

NEW EC-5502	UNEP PCB Working Solution 1	3 mL in isooctane
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Unlabeled	IUPAC	(ng/mL)
2,4,4'-TriCB	28	2.0
2,2',5,5'-TetraCB	52	2.5
2,2',4,5,5'-PentaCB	101	4.0
2,2',3,4,4',5'-HexaCB	138	4.0
2,2',4,4',5,5'-HexaCB	153	5.0
2,2',3,4,4',5,5'-HeptaCB	180	6.0

See also **EN-1948-4 PCB Standard Mixtures**, pp. 86-88.

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

	Catalog No.	Compound	Amount
NEW	EC-5518	Comprehensive PCB Calibration Solutions [CS1-CS5]	5 × 0.2 mL in nonane/isooctane
NEW	EC-5518-CS1	Comprehensive PCB Calibration Solution [CS1]	0.2 mL in nonane/isooctane
NEW	EC-5518-CS2	Comprehensive PCB Calibration Solution [CS2]	0.2 mL in nonane/isooctane
NEW	EC-5518-CS3	Comprehensive PCB Calibration Solution [CS3]	0.2 mL in nonane/isooctane
NEW	EC-5518-CS4	Comprehensive PCB Calibration Solution [CS4]	0.2 mL in nonane/isooctane
NEW	EC-5518-CS5	Comprehensive PCB Calibration Solution [CS5]	0.2 mL in nonane/isooctane
NEW	EC-5518-CS6	Comprehensive PCB Calibration Solution [CS6]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6
2-MonoCB	1	0.2	1	4	20	100	500
4-MonoCB	3	0.2	1	4	20	100	500
2,2'-DiCB	4	0.2	1	4	20	100	500
2,4'-DiCB	8	0.2	1	4	20	100	500
2,5-DiCB	9	0.2	1	4	20	100	500
2,6-DiCB	10	0.2	1	4	20	100	500
3,3'-DiCB	11	0.2	1	4	20	100	500
3,4-DiCB	12	0.2	1	4	20	100	500
4,4'-DiCB	15	0.2	1	4	20	100	500
2,2',5-TriCB	18	0.1	0.5	2	10	50	250
2,2',6-TriCB	19	0.1	0.5	2	10	50	250
2,4,4'-TriCB	28	0.1	0.5	2	10	50	250
2,4',5-TriCB	31	0.1	0.5	2	10	50	250
2',3,4-TriCB	33	0.1	0.5	2	10	50	250
3,3',4-TriCB	35	0.1	0.5	2	10	50	250
3,4,4'-TriCB	37	0.1	0.5	2	10	50	250
3,4,5-TriCB	38	0.1	0.5	2	10	50	250
2,2',3,5'-TetraCB	44	0.1	0.5	2	10	50	250
2,2',4,5'-TetraCB	49	0.1	0.5	2	10	50	250
2,2',5,5'-TetraCB	52	0.1	0.5	2	10	50	250
2,2',6,6'-TetraCB	54	0.1	0.5	2	10	50	250
2,3,3',5-TetraCB	57	0.1	0.5	2	10	50	250
2,3',4,4'-TetraCB	66	0.1	0.5	2	10	50	250
2,3',4',5-TetraCB	70	0.1	0.5	2	10	50	250
2,4,4',5-TetraCB	74	0.1	0.5	2	10	50	250
3,3',4,4'-TetraCB	77	0.1	0.5	2	10	50	250
3,3',4,5-TetraCB	78	0.1	0.5	2	10	50	250
3,3',4,5'-TetraCB	79	0.1	0.5	2	10	50	250
3,4,4',5-TetraCB	81	0.1	0.5	2	10	50	250
2,2',3,4,5'-PentaCB	87	0.1	0.5	2	10	50	250
2,2',3,5',6-PentaCB	95	0.1	0.5	2	10	50	250
2,2',4,4',5-PentaCB	99	0.1	0.5	2	10	50	250
2,2',4,5,5'-PentaCB	101	0.1	0.5	2	10	50	250
2,2',4,6,6'-PentaCB	104	0.1	0.5	2	10	50	250
2,3,3',4,4'-PentaCB	105	0.1	0.5	2	10	50	250
2,3,3',4',6-PentaCB	110	0.1	0.5	2	10	50	250
2,3,3',5,5'-PentaCB	111	0.1	0.5	2	10	50	250
2,3,4,4',5-PentaCB	114	0.1	0.5	2	10	50	250
2,3',4,4',5-PentaCB	118	0.1	0.5	2	10	50	250
2,3',4,4',5'-PentaCB	123	0.1	0.5	2	10	50	250
3,3',4,4',5-PentaCB	126	0.1	0.5	2	10	50	250
2,2',3,4,4',5'-HexaCB	138	0.1	0.5	2	10	50	250
2,2',3,4',5',6-HexaCB	149	0.1	0.5	2	10	50	250
2,2',4,4',5,5'-HexaCB	153	0.1	0.5	2	10	50	250
2,2',4,4',6,6'-HexaCB	155	0.1	0.5	2	10	50	250
2,3,3',4,4',5-HexaCB	156	0.1	0.5	2	10	50	250
2,3,3',4,4',5'-HexaCB	157	0.1	0.5	2	10	50	250

(continued on next page)

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

(continued from previous page)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6
2,3,3',4',5,5'-HexaCB	162	0.1	0.5	2	10	50	250
2,3',4,4',5,5'-HexaCB	167	0.1	0.5	2	10	50	250
3,3',4,4',5,5'-HexaCB	169	0.1	0.5	2	10	50	250
2,2',3,3',4,4',5-HeptaCB	170	0.1	0.5	2	10	50	250
2,2',3,3',4,5,6'-HeptaCB	174	0.1	0.5	2	10	50	250
2,2',3,3',5,5',6-HeptaCB	178	0.1	0.5	2	10	50	250
2,2',3,4,4',5,5'-HeptaCB	180	0.1	0.5	2	10	50	250
2,2',3,4',5,5',6-HeptaCB	187	0.1	0.5	2	10	50	250
2,2',3,4',5,6,6'-HeptaCB	188	0.1	0.5	2	10	50	250
2,3,3',4,4',5,5'-HeptaCB	189	0.1	0.5	2	10	50	250
2,2',3,3',4,4',5,5'-OctaCB	194	0.1	0.5	2	10	50	250
2,2',3,3',4,4',5,6-OctaCB	195	0.1	0.5	2	10	50	250
2,2',3,3',4,5,6,6'-OctaCB	200	0.1	0.5	2	10	50	250
2,2',3,3',5,5',6,6'-OctaCB	202	0.1	0.5	2	10	50	250
2,2',3,4,4',5,5',6-OctaCB	203	0.1	0.5	2	10	50	250
2,3,3',4,4',5,5',6-OctaCB	205	0.1	0.5	2	10	50	250
2,2',3,3',4,4',5,5',6-NonaCB	206	0.1	0.5	2	10	50	250
2,2',3,3',4,5,5',6,6'-NonaCB	208	0.1	0.5	2	10	50	250
DecaCB	209	0.1	0.5	2	10	50	250
Toxics/LOC/Window Defining							
2-MonoCB (¹³ C ₁₂ , 99%)	1	10	10	10	10	10	10
4-MonoCB (¹³ C ₁₂ , 99%)	3	10	10	10	10	10	10
2,2'-DiCB (¹³ C ₁₂ , 99%)	4	10	10	10	10	10	10
4,4'-DiCB (¹³ C ₁₂ , 99%)	15	10	10	10	10	10	10
2,2',6-TriCB (¹³ C ₁₂ , 99%)	19	10	10	10	10	10	10
3,4,4'-TriCB (¹³ C ₁₂ , 99%)	37	10	10	10	10	10	10
2,2',6,6'-TetraCB (¹³ C ₁₂ , 99%)	54	10	10	10	10	10	10
3,3',4,4'-TetraCB (¹³ C ₁₂ , 99%)	77	10	10	10	10	10	10
3,4,4',5-TetraCB (¹³ C ₁₂ , 99%)	81	10	10	10	10	10	10
2,2',4,6,6'-PentaCB (¹³ C ₁₂ , 99%)	104	10	10	10	10	10	10
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	10	10	10	10	10	10
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	10	10	10	10	10	10
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	10	10	10	10	10	10
2,3',4,4',5'-PentaCB (¹³ C ₁₂ , 99%)	123	10	10	10	10	10	10
3,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	126	10	10	10	10	10	10
2,2',4,4',6,6'-HexaCB (¹³ C ₁₂ , 99%)	155	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	10	10	10	10	10	10
2,3,3',4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	157	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	167	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	169	10	10	10	10	10	10
2,2',3,4',5,6,6'-HeptaCB (¹³ C ₁₂ , 99%)	188	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	189	10	10	10	10	10	10
2,2',3,3',5,5',6,6'-OctaCB (¹³ C ₁₂ , 99%)	202	10	10	10	10	10	10
2,3,3',4,4',5,5',6-OctaCB (¹³ C ₁₂ , 99%)	205	10	10	10	10	10	10
2,2',3,3',4,4',5,5',6-NonaCB (¹³ C ₁₂ , 99%)	206	10	10	10	10	10	10
2,2',3,3',4,5,5',6,6'-NonaCB (¹³ C ₁₂ , 99%)	208	10	10	10	10	10	10
DecaCB (¹³ C ₁₂ , 99%)	209	10	10	10	10	10	10
Cleanup							
2,4,4'-TriCB (¹³ C ₁₂ , 99%)	28	10	10	10	10	10	10
2,3,3',5,5'-PentaCB (¹³ C ₁₂ , 99%)	111	10	10	10	10	10	10
2,2',3,3',5,5',6-HeptaCB (¹³ C ₁₂ , 99%)	178	10	10	10	10	10	10
Injection Internal							
2,5-DiCB (¹³ C ₁₂ , 99%)	9	10	10	10	10	10	10
2,2',5,5'-TetraCB (¹³ C ₁₂ , 99%)	52	10	10	10	10	10	10
2,2',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	101	10	10	10	10	10	10
2,2',3,4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	138	10	10	10	10	10	10
2,2',3,3',4,4',5,5'-OctaCB (¹³ C ₁₂ , 99%)	194	10	10	10	10	10	10

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-4977	Method 1668A/B/C Labeled Toxics/LOC/Window Defining Solution	1.2 mL in nonane
EC-4977-5	Method 1668A/B/C Labeled Toxics/LOC/Window Defining Solution	5 mL in nonane

Labeled	IUPAC	(ng/mL)
2-MonoCB ($^{13}\text{C}_{12}$, 99%)	1	1000
4-MonoCB ($^{13}\text{C}_{12}$, 99%)	3	1000
2,2'-DiCB ($^{13}\text{C}_{12}$, 99%)	4	1000
4,4'-DiCB ($^{13}\text{C}_{12}$, 99%)	15	1000
2,2',6-TriCB ($^{13}\text{C}_{12}$, 99%)	19	1000
3,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	37	1000
2,2',6,6'-TetraCB ($^{13}\text{C}_{12}$, 99%)	54	1000
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	1000
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	1000
2,2',4,6,6'-PentaCB ($^{13}\text{C}_{12}$, 99%)	104	1000
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	1000
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	1000
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	1000
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	1000
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	1000
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	155	1000
2,2',4,4',6,6'-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	1000
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	1000
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	1000
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	1000
2,2',3,4',5,6,6'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	188	1000
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	1000
2,2',3,3',5,5',6,6'-OctaCB ($^{13}\text{C}_{12}$, 99%)	202	1000
2,3,3',4,4',5,5',6-OctaCB ($^{13}\text{C}_{12}$, 99%)	205	1000
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}\text{C}_{12}$, 99%)	206	1000
2,2',3,3',4,4',5,5',6,6'-NonaCB ($^{13}\text{C}_{12}$, 99%)	208	1000
DecaCB ($^{13}\text{C}_{12}$, 99%)	209	1000

EC-4978	Method 1668A/B/C Labeled Cleanup Standard Solution	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	1000
2,2',3,3',5,5',6-HeptaCB ($^{13}\text{C}_{12}$, 99%)	178	1000

EC-4979	Method 1668A/B/C Labeled Injection Internal Standard Solution	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,5-DiCB ($^{13}\text{C}_{12}$, 99%)	9	5000
2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	52	5000
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	5000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	5000
2,2',3,3',4,4',5,5'-OctaCB ($^{13}\text{C}_{12}$, 99%)	194	5000

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5433	Comprehensive Native PCB Mixture	1.2 mL in isoctane

Unlabeled	IUPAC	(ng/mL)
2-MonoCB	1	2000
4-MonoCB	3	2000
2,2'-DiCB	4	2000
2,4'-DiCB	8	2000
2,5-DiCB	9	2000
2,6-DiCB	10	2000
3,3'-DiCB	11	2000
3,4-DiCB	12	2000
4,4'-DiCB	15	2000
2,2',5-TriCB	18	1000
2,2',6-TriCB	19	1000
2,4,4'-TriCB	28	1000
2,4',5-TriCB	31	1000
2',3,4-TriCB	33	1000
3,3',4-TriCB	35	1000
3,4,4'-TriCB	37	1000
3,4,5-TriCB	38	1000
2,2',3,5'-TetraCB	44	1000
2,2',4,5'-TetraCB	49	1000
2,2',5,5'-TetraCB	52	1000
2,2',6,6'-TetraCB	54	1000
2,3,3',5-TetraCB	57	1000
2,3',4,4'-TetraCB	66	1000
2,3',4',5-TetraCB	70	1000
2,4,4',5-TetraCB	74	1000
3,3',4,4'-TetraCB	77	1000
3,3',4,5-TetraCB	78	1000
3,3',4,5'-TetraCB	79	1000
3,4,4',5-TetraCB	81	1000
2,2',3,4,5'-PentaCB	87	1000
2,2',3,5',6-PentaCB	95	1000
2,2',4,4',5-PentaCB	99	1000
2,2',4,5,5'-PentaCB	101	1000

Unlabeled	IUPAC	(ng/mL)
2,2',4,6,6'-PentaCB	104	1000
2,3,3',4,4'-PentaCB	105	1000
2,3,3',4',6-PentaCB	110	1000
2,3,3',5,5'-PentaCB	111	1000
2,3,4,4',5-PentaCB	114	1000
2,3',4,4',5-PentaCB	118	1000
2',3,4,4',5-PentaCB	123	1000
3,3',4,4',5-PentaCB	126	1000
2,2',3,4,4',5'-HexaCB	138	1000
2,2',3,4',5',6-HexaCB	149	1000
2,2',4,4',5,5'-HexaCB	153	1000
2,2',4,4',6,6'-HexaCB	155	1000
2,3,3',4,4',5-HexaCB	156	1000
2,3,3',4,4',5'-HexaCB	157	1000
2,3,3',4',5,5'-HexaCB	162	1000
2,3',4,4',5,5'-HexaCB	167	1000
3,3',4,4',5,5'-HexaCB	169	1000
2,2',3,3',4,4',5-HeptaCB	170	1000
2,2',3,3',4,5,6'-HeptaCB	174	1000
2,2',3,3',5,5',6-HeptaCB	178	1000
2,2',3,4,4',5,5'-HeptaCB	180	1000
2,2',3,4',5,5',6-HeptaCB	187	1000
2,2',3,4',5,6,6'-HeptaCB	188	1000
2,3,3',4,4',5,5'-HeptaCB	189	1000
2,2',3,3',4,4',5,5'-OctaCB	194	1000
2,2',3,3',4,4',5,6-OctaCB	195	1000
2,2',3,3',4,5,6,6'-OctaCB	200	1000
2,2',3,3',5,5',6,6'-OctaCB	202	1000
2,2',3,4,4',5,5',6-OctaCB	203	1000
2,3,3',4,4',5,5',6-OctaCB	205	1000
2,2',3,3',4,4',5,5',6-NonaCB	206	1000
2,2',3,3',4,5,5',6,6'-NonaCB	208	1000
DecaCB	209	1000

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5366	CDC PCB Calibration Solutions [CS1-CS10] (NOTE: Individual calibration standards are available upon request)	Set of 10 × 0.5 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
2,2',5-TriCB	18	0.2	0.5	1	2.5	10	75	100	500		
2,4,4'-TriCB	28	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,5'-TetraCB	44	0.2	0.5	1	2.5	10	75	100	500		
2,2',4,5'-TetraCB	49	0.2	0.5	1	2.5	10	75	100	500		
2,2',5,5'-TetraCB	52	0.2	0.5	1	2.5	10	75	100	500		
2,3',4,4'-TetraCB	66	0.2	0.5	1	2.5	10	75	100	500		
2,4,4',5-TetraCB	74	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,4,5'-PentaCB	87	0.2	0.5	1	2.5	10	75	100	500		
2,2',4,4',5-PentaCB	99	0.2	0.5	1	2.5	10	75	100	500		
2,2',4,5,5'-PentaCB	101	0.2	0.5	1	2.5	10	75	100	500		
2,3,3',4,4'-PentaCB	105	0.2	0.5	1	2.5	10	75	100	500		
2,3,3',4',6-PentaCB	110	0.2	0.5	1	2.5	10	75	100	500		
2,3,4,4',5-PentaCB	114	0.2	0.5	1	2.5	10	75	100	500		
2,3',4,4',5-PentaCB	118	0.2	0.5	1	2.5	10	75	100	500	3000	7500
2',3,4,4',5-PentaCB	123	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,3',4,4'-HexaCB	128	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,4,4',5'-HexaCB	138	0.1	0.25	0.5	1.25	5	37.5	50	250	1500	3750
2,2',3,4',5,5'-HexaCB	146	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,4',5',6-HexaCB	149	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,5,5',6-HexaCB	151	0.2	0.5	1	2.5	10	75	100	500		
2,2',4,4',5,5'-HexaCB	153	0.2	0.5	1	2.5	10	75	100	500	3000	7500
2,3,3',4,4',5-HexaCB	156	0.2	0.5	1	2.5	10	75	100	500		
2,3,3',4,4',5'-HexaCB	157	0.2	0.5	1	2.5	10	75	100	500		
2,3,3',4,4',6-HexaCB	158	0.1	0.25	0.5	1.25	5	37.5	50	250	1500	3750
2,3',4,4',5,5'-HexaCB	167	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,3',4,4',5-HeptaCB	170	0.2	0.5	1	2.5	10	75	100	500	3000	7500
2,2',3,3',4,5,5'-HeptaCB	172	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,3',4',5,6-HeptaCB	177	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,3',5,5',6-HeptaCB	178	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,4,4',5,5'-HeptaCB	180	0.2	0.5	1	2.5	10	75	100	500	3000	7500
2,2',3,4,4',5',6-HeptaCB	183	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,4',5,5',6-HeptaCB	187	0.2	0.5	1	2.5	10	75	100	500	3000	7500
2,3,3',4,4',5,5'-HeptaCB	189	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,3',4,4',5,5'-OctaCB	194	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,3',4,4',5,6-OctaCB	195	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,3',4,4',5',6-OctaCB	196	0.1	0.25	0.5	1.25	5	37.5	50	250		
2,2',3,3',4,5,5',6'-OctaCB	201	0.2	0.5	1	2.5	10	75	100	500		
2,2',3,4,4',5,5',6-OctaCB	203	0.1	0.25	0.5	1.25	5	37.5	50	250		
2,2',3,3',4,4',5,5',6-NonaCB	206	0.2	0.5	1	2.5	10	75	100	500		
DecaCB	209	0.2	0.5	1	2.5	10	75	100	500		
Labeled											
2,4,4'-TriCB (¹³ C ₁₂ , 99%)	28	75	75	75	75	75	75	75	75	75	75
2,2',5,5'-TetraCB (¹³ C ₁₂ , 99%)	52	75	75	75	75	75	75	75	75	75	75
2,2',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	101	75	75	75	75	75	75	75	75	75	75
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	75	75	75	75	75	75	75	75	75	75
2,3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	114	75	75	75	75	75	75	75	75	75	75
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	75	75	75	75	75	75	75	75	75	75
2',3,4,4',5-PentaCB (¹³ C ₁₂ , 99%)	123	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,4'-HexaCB (¹³ C ₁₂ , 99%)	128	75	75	75	75	75	75	75	75	75	75
2,2',3,4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	138	75	75	75	75	75	75	75	75	75	75
2,2',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	153	75	75	75	75	75	75	75	75	75	75

(continued on next page)

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

(continued from previous page)

All concentrations are in ng/mL (ppb)

Labeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	75	75	75	75	75	75	75	75	75	75
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	75	75	75	75	75	75	75	75	75	75
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 99%)	170	75	75	75	75	75	75	75	75	75	75
2,2',3,3',5,5',6-HeptaCB ($^{13}\text{C}_{12}$, 99%)	178	75	75	75	75	75	75	75	75	75	75
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	75	75	75	75	75	75	75	75	75	75
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,4',5,5'-OctaCB ($^{13}\text{C}_{12}$, 99%)	194	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}\text{C}_{12}$, 99%)	206	75	75	75	75	75	75	75	75	75	75
DecaCB ($^{13}\text{C}_{12}$, 99%)	209	75	75	75	75	75	75	75	75	75	75
Recovery											
1,2,3,4-TCDD ($^{13}\text{C}_6$, 99%)		25	25	25	25	25	25	25	25	25	25
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}\text{C}_{12}$, 99%)	208	100	100	100	100	100	100	100	100	100	100
3,3',4,4'-TetraBDE ($^{13}\text{C}_{12}$, 99%)	77	75	75	75	75	75	75	75	75	75	75
2,2',3,4,4',6-HexaBDE ($^{13}\text{C}_{12}$, 99%)	139	75	75	75	75	75	75	75	75	75	75

EC-5367	CDC PCB Spiking Standard	10 mL in methanol
NEW EC-5367-5X10	CDC PCB Spiking Standard	5 × 10 mL in methanol

Labeled	IUPAC	(ng/mL)
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	7.5
2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	52	7.5
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	7.5
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	7.5
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	7.5
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	7.5
2,2',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	153	7.5
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	7.5
2,2',3,3',5,5',6-HeptaCB ($^{13}\text{C}_{12}$, 99%)	178	7.5
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	7.5
2,2',3,3',4,4'-HexaCB ($^{13}\text{C}_{12}$, 99%)	128	7.5
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	7.5
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	7.5
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	7.5
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 99%)	170	7.5
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	7.5
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	7.5
2,2',3,3',4,4',5,5'-OctaCB ($^{13}\text{C}_{12}$, 99%)	194	7.5
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}\text{C}_{12}$, 99%)	206	7.5
DecaCB ($^{13}\text{C}_{12}$, 99%)	209	7.5

ES-5321	Multi-Analyte Recovery Spiking Standard	10 mL in 88% hexane/ 2% dodecane/10% nonane
NEW ES-5321-200X-1.2	Multi-Analyte Recovery Spiking Standard	1.2 mL in nonane

Labeled	IUPAC	ES-5321 (ng/mL)	ES-5321-200X-1.2 (ng/mL)
1,2,3,4-TetraCDD ($^{13}\text{C}_6$, 99%)		2.5	500
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}\text{C}_{12}$, 99%)	208	10.0	2000
3,3',4,4'-TetraBDE ($^{13}\text{C}_{12}$, 99%)	77	7.5	1500
2,2',3,4,4',6-HexaBDE ($^{13}\text{C}_{12}$, 99%)	139	7.5	1500

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5085	Toxic and Predominant PCB PAR Solution (does not include PCB-114 or PCB-123)	1.2 mL in nonane

Unlabeled	IUPAC	(ng/mL)
2,2',5'-TriCB	18	250
2,4,4'-TriCB	28	250
2,2',3,5'-TetraCB	44	250
2,2',4,5'-TetraCB	49	250
2,2',5,5'-TetraCB	52	250
2,3',4,4'-TetraCB	66	250
2,4,4',5-TetraCB	74	250
2,2',3,4,5'-PentaCB	87	250
2,2',4,4',5-PentaCB	99	250
2,2',4,5,5'-PentaCB	101	250
2,3,3',4,4'-PentaCB	105	250
2,3,3',4',6-PentaCB	110	250
2,3',4,4',5-PentaCB	118	250
2,2',3,3',4,4'-HexaCB	128	250
2,2',3,4,4',5'-HexaCB	138	250
2,2',3,4',5,5'-HexaCB	146	250
2,2',3,4',5',6-HexaCB	149	250
2,2',3,5,5',6-HexaCB	151	250
2,2',4,4',5,5'-HexaCB	153	250
2,3,3',4,4',5-HexaCB	156	250
2,3,3',4,4',5'-HexaCB	157	250
2,3,3',4,4',6-HexaCB	158	250
2,3',4,4',5,5'-HexaCB	167	250
2,2',3,3',4,4',5-HeptaCB	170	250
2,2',3,3',4,5,5'-HeptaCB	172	250
2,2',3,3',4',5,6-HeptaCB	177	250
2,2',3,3',5,5',6-HeptaCB	178	250
2,2',3,4,4',5,5'-HeptaCB	180	250
2,2',3,4,4',5',6-HeptaCB	183	250
2,2',3,4',5,5',6-HeptaCB	187	250
2,3,3',4,4',5,5'-HeptaCB	189	250
2,2',3,3',4,4',5,5'-OctaCB	194	250
2,2',3,3',4,4',5,6-OctaCB	195	250
2,2',3,3',4,4',5',6-OctaCB	196	250
2,2',3,3',4,5,5',6'-OctaCB	201	250
2,2',3,4,4',5,5',6-OctaCB	203	250
2,2',3,3',4,4',5,5',6-NonaCB	206	250
DecaCB	209	250

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount						
NEW EC-5531	PCB Exhibit Calibration Solutions [CS0.2-CS5]	6 × 0.2 mL in nonane/isooctane						
All concentrations are in ng/mL (ppb)								
Unlabeled	IUPAC	CS0.2	CS1	CS2	CS3	CS4	CS5	
2,2',5,5'-TetraCB	52	0.2	1	5	50	400	2000	
2,3',4,4'-TetraCB	66	0.2	1	5	50	400	2000	
2,4,4',5-TetraCB	74	0.2	1	5	50	400	2000	
2,2',3,4,5'-PentaCB	87	0.2	1	5	50	400	2000	
2,2',4,4',5-PentaCB	99	0.2	1	5	50	400	2000	
2,2',4,5,5'-PentaCB	101	0.2	1	5	50	400	2000	
2,3,3',4,4'-PentaCB	105	0.2	1	5	50	400	2000	
2,3,3',4',6-PentaCB	110	0.2	1	5	50	400	2000	
2,3',4,4',5-PentaCB	118	0.2	1	5	50	400	2000	
2,2',3,4,4',5'-HexaCB	138	0.2	1	5	50	400	2000	
2,2',3,4',5,5'-HexaCB	146	0.2	1	5	50	400	2000	
2,2',4,4',5,5'-HexaCB	153	0.2	1	5	50	400	2000	
2,3,3',4,4',5-HexaCB	156	0.2	1	5	50	400	2000	
2,2',3,3',4,4',5-HeptaCB	170	0.2	1	5	50	400	2000	
2,2',3,4,4',5,5'-HeptaCB	180	0.2	1	5	50	400	2000	
2,2',3,4',5,5',6-HeptaCB	187	0.2	1	5	50	400	2000	
DecaCB	209	0.2	1	5	50	400	2000	
Internal								
2,2',5,5'-TetraCB (¹³ C ₁₂ , 99%)	52	25	25	25	25	25	25	
2,2',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	101	25	25	25	25	25	25	
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	25	25	25	25	25	25	
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	25	25	25	25	25	25	
2,2',3,4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	138	25	25	25	25	25	25	
2,2',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	153	25	25	25	25	25	25	
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	25	25	25	25	25	25	
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	25	25	25	25	25	25	
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	25	25	25	25	25	25	
Recovery								
2,3',4',5-TetraCB	70	25	25	25	25	25	25	
2,3,3',5,5'-PentaCB	111	25	25	25	25	25	25	
2,2',4,4',6,6'-HexaCB	155	25	25	25	25	25	25	
2,3',4,4',5,5'-HexaCB	167	25	25	25	25	25	25	
2,3,3',4,4',5,5'-HeptaCB	189	25	25	25	25	25	25	

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
NEW EC-5532	PCB Exhibit Internal Standard	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,2',5,5'-TetraCB (¹³ C ₁₂ , 99%)	52	100
2,2',4,5,5'-PentaCB (¹³ C ₁₂ , 99%)	101	100
2,3,3',4,4'-PentaCB (¹³ C ₁₂ , 99%)	105	100
2,3',4,4',5-PentaCB (¹³ C ₁₂ , 99%)	118	100
2,2',3,4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	138	100
2,2',3,3',4,4'-HexaCB (¹³ C ₁₂ , 99%)	153	100
2,3,3',4,4',5-HexaCB (¹³ C ₁₂ , 99%)	156	100
2,3,3',4,4',5'-HexaCB (¹³ C ₁₂ , 99%)	157	100
2,2',3,3',4,4',5-HeptaCB (¹³ C ₁₂ , 99%)	170	100
2,2',3,4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	180	100
DecaCB (¹³ C ₁₂ , 99%)	209	100

NEW EC-5533	PCB Exhibit Recovery Solution	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,3',4',5-TetraCB (¹³ C ₁₂ , 99%)	70	5000
2,3,3',5,5'-PentaCB (¹³ C ₁₂ , 99%)	111	5000
2,2',4,4',6'-HexaCB (¹³ C ₁₂ , 99%)	155	5000
2,3',4,4',5,5'-HexaCB (¹³ C ₁₂ , 99%)	167	5000
2,3,3',4,4',5,5'-HeptaCB (¹³ C ₁₂ , 99%)	189	5000

NEW EC-5534	PCB Exhibit Native PAR Solution	1.2 mL in isooctane
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Unlabeled	IUPAC	(ng/mL)
2,2',5,5'-TetraCB	52	200
2,3',4,4'-TetraCB	66	200
2,4,4',5-TetraCB	74	200
2,2',3,4,5'-PentaCB	87	200
2,2',4,4',5-PentaCB	99	200
2,2',4,5,5'-PentaCB	101	200
2,3,3',4,4'-PentaCB	105	200
2,3,3',4',6-PentaCB	110	200
2,3',4,4',5-PentaCB	118	200
2,2',3,4,4',5'-HexaCB	138	200
2,2',3,4',5,5'-HexaCB	146	200
2,2',4,4',5,5'-HexaCB	153	200
2,3,3',4,4',5-HexaCB	156	200
2,2',3,3',4,4',5-HeptaCB	170	200
2,2',3,4,4',5,5'-HeptaCB	180	200
2,2',3,4',5,5',6-HeptaCB	187	200
DecaCB	209	200

Isotope-Labeled PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5181	PCB Syringe Spike	1.2 mL in nonane
EC-5181-10X-1.2	PCB Syringe Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5181 (ng/mL)	EC-5181-10X-1.2 (ng/mL)
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	100	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	100	1000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	100	1000

EC-5163	PCB Mixture (PCB-70/111/138/1 70)	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	1000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	1000
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 99%)	170	1000

EC-5350	POPs Pesticides HRMS (PCB) Syringe Spike	1.2 mL in nonane
EC-5350-L	POPs Pesticides HRMS (PCB) Syringe Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5350 (ng/mL)	EC-5350-L (ng/mL)
4,4'-DiCB ($^{13}\text{C}_{12}$, 99%)	15	100	1000
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	100	1000

NEW EC-5523	PCB Recovery Standard (PCB-9, 118, 188)	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,5-DiCB ($^{13}\text{C}_{12}$, 99%)	9	12,500
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	12,500
2,2',3,4',5,6,6'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	188	12,500

NEW ES-5474	CDC PCB Recovery Standard for OH-PAHs	1 mL in toluene
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Labeled	IUPAC	(ng/mL)
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	200
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	200
2,2',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	153	200
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	200

EC-4060	PCB Mixture	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	10,000
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	10,000
2,2',3,4,5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	141	10,000
2,2',3,3',5,5',6-HeptaCB ($^{13}\text{C}_{12}$, 99%)	178	10,000

Unlabeled PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5434	Fully Resolved Native Mono-Deca PCB Mixture	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2-MonoCB	1	2000
4-MonoCB	3	2000
2,4'-DiCB	8	2000
2,5-DiCB	9	2000
2,6-DiCB	10	2000
3,4-DiCB	12	2000
4,4'-DiCB	15	2000
2,2',5-TriCB	18	1000
2,2',6-TriCB	19	1000
2',3,4-TriCB	33	1000
3,3',4-TriCB	35	1000
3,4,4'-TriCB	37	1000
3,4,5-TriCB	38	1000
2,2',3,5'-TetraCB	44	1000
2,2',5,5'-TetraCB	52	1000
2,2',6,6'-TetraCB	54	1000
2,3,3',5-TetraCB	57	1000
2,4,4',5-TetraCB	74	1000
3,3',4,4'-TetraCB	77	1000
3,3',4,5-TetraCB	78	1000
3,3',4,5'-TetraCB	79	1000
3,4,4',5-TetraCB	81	1000

Unlabeled	IUPAC	(ng/mL)
2,2',4,4',5-PentaCB	99	1000
2,2',4,6,6'-PentaCB	104	1000
2,3,4,4',5-PentaCB	114	1000
2,3',4,4',5-PentaCB	118	1000
2',3,4,4',5-PentaCB	123	1000
3,3',4,4',5-PentaCB	126	1000
2,2',4,4',5,5'-HexaCB	153	1000
2,2',4,4',6,6'-HexaCB	155	1000
2,3,3',4,4',5-HexaCB	156	1000
2,3,3',4,4',5'-HexaCB	157	1000
2,3,3',4',5,5'-HexaCB	162	1000
2,3',4,4',5,5'-HexaCB	167	1000
3,3',4,4',5,5'-HexaCB	169	1000
2,2',3,4',5,6,6'-HeptaCB	188	1000
2,3,3',4,4',5,5'-HeptaCB	189	1000
2,2',3,3',4,4',5,5'-OctaCB	194	1000
2,2',3,3',4,4',5,6-OctaCB	195	1000
2,2',3,3',5,5',6,6'-OctaCB	202	1000
2,3,3',4,4',5,5',6-OctaCB	205	1000
2,2',3,3',4,4',5,5',6-NonaCB	206	1000
2,2',3,3',4,5,5',6,6'-NonaCB	208	1000
DecaCB	209	1000

EC-4133	DSJ PCB Mixture	1 mL in isooctane
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Unlabeled	IUPAC	(ng/mL)
2,2',4-TriCB	17	500
2,2',5-TriCB	18	2000
2,4,4'-TriCB	28	2000
2,4',5-TriCB	31	1500
2',3,4-TriCB	33	2000
2,2',3,5'-TetraCB	44	2000
2,2',4,5'-TetraCB	49	2000
2,2',5,5'-TetraCB	52	2000
2,3',4',5-TetraCB	70	2000
2,4,4',5-TetraCB	74	2000
2,2',3,3',4-PentaCB	82	500
2,2',3,4,5'-PentaCB	87	2000
2,2',3,5',6-PentaCB	95	1000
2,2',4,4',5-PentaCB	99	2000
2,2',4,5,5'-PentaCB	101	2000
2,3,3',4,4'-PentaCB	105	500
2,3,3',4',6-PentaCB	110	2000
2,3',4,4',5-PentaCB	118	2000
2,2',3,3',4,4'-HexaCB	128	2000
2,2',3,3',4,6'-HexaCB	132	1000
2,2',3,4,4',5'-HexaCB	138	2000

Unlabeled	IUPAC	(ng/mL)
2,2',3,4',5',6-HexaCB	149	2000
2,2',3,5,5',6-HexaCB	151	2000
2,2',4,4',5,5'-HexaCB	153	2000
2,3,3',4,4',5-HexaCB	156	2000
2,3,3',4,4',6-HexaCB	158	500
3,3',4,4',5,5'-HexaCB	169	2000
2,2',3,3',4,4',5-HeptaCB	170	2000
2,2',3,3',4,4',6-HeptaCB	171	2000
2,2',3,3',4',5,6-HeptaCB	177	2000
2,2',3,4,4',5,5'-HeptaCB	180	2000
2,2',3,4,4',5',6-HeptaCB	183	2000
2,2',3,4',5,5',6-HeptaCB	187	2000
2,3,3',4,4',5',6-HeptaCB	191	2000
2,2',3,3',4,4',5,5'-OctaCB	194	2000
2,2',3,3',4,4',5,6-OctaCB	195	2000
2,2',3,3',4,5,5',6'-OctaCB	201	1500
2,3,3',4,4',5,5',6-OctaCB	205	2000
2,2',3,3',4,4',5,5',6-NonaCB	206	2000
2,2',3,3',4,5,5',6,6'-NonaCB	208	2000
DecaCB	209	2000

Unlabeled PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5492	PCB Recovery Standard	1 mL in toluene

Unlabeled	IUPAC	(ng/mL)
2,4,4'-TriCB	28	200
2,3,3',4,4'-PentaCB	105	200
2,2',4,4',5,5'-HexaCB	153	200
2,3',4,4',5,5'-HexaCB	167	200

NEW	EC-5504	PCB Recovery Standard	1.2 mL in isooctane
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Unlabeled	IUPAC	(ng/mL)
2,3',4',5-TetraCB	70	100
2,3,3',5,5'-PentaCB	111	100
2,2',3,3',4,4',5-HeptaCB	170	100

EC-7438	PCB Mixture	1.2 mL in isooctane
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Unlabeled	IUPAC	(ng/mL)
3,3',4,4'-TetraCB	77	10,000
2,2',4,5,5'-PentaCB	101	10,000
2,2',3,4,5,5'-HexaCB	141	10,000
2,2',3,3',5,5',6-HeptaCB	178	10,000

NEW	ULM-5370	EN-1948-4 PCB Sampling Standard	Inquire
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Unlabeled	IUPAC	(ng/mL)
2,3,4,4'-TetraCB	60	100
3,3',4,5,5'-PentaCB	127	100
2,3,3',4,5,5'-HexaCB	159	100

NEW	EC-5460	UNEP OC Pesticide ECD Internal Standard Mixture	1.2 mL in isooctane
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Unlabeled	IUPAC	(ng/mL)
2,3,3',5,6-PentaCB	112	5000
2,2',4,4',6,6'-HexaCB	155	5000
2,2',3,3',4,5,5',6-OctaCB	198	5000

PCB Window Defining Mixture

Catalog No.	Compound	Amount
EC-1430	PCB Window Defining Mixture (for use with DB-5 type GC-MS columns)	5 mL in isooctane
	Unlabeled	
	IUPAC	(ng/mL)
	Biphenyl	0
	2-MonoCB	1
	4-MonoCB	3
	2,6-DiCB	10
	4,4'-DiCB	15
	<i>Note: #30 is second tri eluter</i>	
	2,4,6-TriCB	30
	3,4,4'-TriCB	37
	2,2',6,6'-TetraCB	54
	3,3',4,4'-TetraCB	77
	2,2',4,6,6'-PentaCB	104
	3,3',4,4',5-PentaCB	126
	2,2',4,4',6,6'-HexaCB	155
	3,3',4,4',5,5'-HexaCB	169
	2,2',3,4',5,6,6'-HeptaCB	188
	2,3,3',4,4',5,5'-HeptaCB	189
	2,2',3,3',5,5',6,6'-OctaCB	202
	<i>Note: #194 is second-to-last octa eluter</i>	
	2,2',3,3',4,4',5,5'-OctaCB	194
	2,2',3,3',4,4',5,5',6-NonaCB	206
	2,2',3,3',4,5,5',6,6'-NonaCB	208
	DecaCB	209

Isotope-Labeled Mixed Bromo/Chlorobiphenyl Standards

Catalog No.	Compound	Concentration	Amount
ECB-5269	3,4-Dichloro-3',4',5'-triBB ($^{13}\text{C}_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5270	3,4-Dibromo-3',4'-diCB ($^{13}\text{C}_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5271	3,4-Dibromo-3',4',5'-triCB ($^{13}\text{C}_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5291	4'-Bromo-3,3',4,5-tetraCB ($^{13}\text{C}_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5292	4'-Bromo-2,3',4,5-tetraCB ($^{13}\text{C}_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5293	4'-Bromo-2,3,3',4-tetraCB ($^{13}\text{C}_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5294	4'-Bromo-2,3,3',4,5-pentaCB ($^{13}\text{C}_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5339	4'-Bromo-3,3',4,5,5'-pentaCB ($^{13}\text{C}_{12}$, 99%)	40 µg/mL in nonane	3 mL

Unlabeled Mixed Bromo/Chlorobiphenyl Standards

Catalog No.	Compound	Concentration	Amount
PCBB-5272-CS	3,4-Dichloro-3',4',5'-triBB (Certified Standard)	100 µg/mL in isooctane	1.2 mL
PCBB-5273	3,4-Dibromo-3',4'-diCB	100 µg/mL in isooctane	1.2 mL
PCBB-5274	3,4-Dibromo-3',4',5'-triCB	100 µg/mL in isooctane	1.2 mL
PCBB-5295	4'-Bromo-3,3',4,5-tetraCB	100 µg/mL in isooctane	1.2 mL
PCBB-5296	4'-Bromo-2,3',4,5-tetraCB	100 µg/mL in isooctane	1.2 mL
PCBB-5297	4'-Bromo-2,3,3',4-tetraCB	100 µg/mL in isooctane	1.2 mL
PCBB-5298	4'-Bromo-2,3,3',4,5-pentaCB	100 µg/mL in isooctane	1.2 mL
PCBB-5340-CS	4'-Bromo-3,3',4,5,5'-pentaCB (Certified Standard)	100 µg/mL in isooctane	1.2 mL

Mixed Bromo/Chlorobiphenyl Standard Mixtures

Catalog No.	Compound	Amount
ECB-5390	PXB Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane
ECB-5390-CS1	PXB Calibration Solution [CS1]	0.2 mL in nonane
ECB-5390-CS2	PXB Calibration Solution [CS2]	0.2 mL in nonane
ECB-5390-CS3	PXB Calibration Solution [CS3]	0.2 mL in nonane
ECB-5390-CS4	PXB Calibration Solution [CS4]	0.2 mL in nonane
ECB-5390-CS5	PXB Calibration Solution [CS5]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	CS1	CS2	CS3	CS4	CS5
4'-Bromo-3,3',4,5-tetraCB	2	10	50	200	200
4'-Bromo-2,3',4,5-tetraCB	2	10	50	200	200
4'-Bromo-2,3,3',4-tetraCB	2	10	50	200	200
4'-Bromo-2,3,3',4,5-pentaCB	2	10	50	200	200
4'-Bromo-3,3',4,5,5'-pentaCB	2	10	50	200	1000
3,4-Dichloro-3',4',5'-triBB	4	20	100	400	2000
Labeled					
4'-Bromo-3,3',4,5-tetraCB (¹³ C ₁₂ , 99%)	100	100	100	100	100
4'-Bromo-2,3',4,5-tetraCB (¹³ C ₁₂ , 99%)	100	100	100	100	100
4'-Bromo-2,3,3',4-tetraCB (¹³ C ₁₂ , 99%)	100	100	100	100	100
4'-Bromo-2,3,3',4,5-pentaCB (¹³ C ₁₂ , 99%)	100	100	100	100	100
4'-Bromo-3,3',4,5,5'-pentaCB (¹³ C ₁₂ , 99%)	100	100	100	100	100
3,4-Dichloro-3',4',5'-triBB (¹³ C ₁₂ , 99%)	200	200	200	200	200
2,2',3,4,5,5'-HexaCDE (¹³ C ₁₂ , 99%)	100	100	100	100	100

ECB-5389	PXB Cleanup Spike	1.2 mL in nonane
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Labeled	(ng/mL)
4'-Bromo-3,3',4,5-tetraCB (¹³ C ₁₂ , 99%)	1000
4'-Bromo-2,3',4,5-tetraCB (¹³ C ₁₂ , 99%)	1000
4'-Bromo-2,3,3',4-tetraCB (¹³ C ₁₂ , 99%)	1000
4'-Bromo-2,3,3',4,5-pentaCB (¹³ C ₁₂ , 99%)	1000
4'-Bromo-3,3',4,5,5'-pentaCB (¹³ C ₁₂ , 99%)	1000
3,4-Dichloro-3',4',5'-triBB (¹³ C ₁₂ , 99%)	2000

EO-5388	PXB Syringe Standard	1.2 mL in nonane
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Labeled	(ng/mL)
2,2',3,4,5,5'-HexaCDE (¹³ C ₁₂ , 99%)	1000

ECB-5387	PXB Native PAR Solution	0.5 mL in nonane
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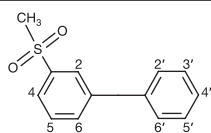
Unlabeled	(ng/mL)
4'-Bromo-3,3',4,5-tetraCB	1000
4'-Bromo-2,3',4,5-tetraCB	1000
4'-Bromo-2,3,3',4-tetraCB	1000
4'-Bromo-2,3,3',4,5-pentaCB	1000
4'-Bromo-3,3',4,5,5'-pentaCB	1000
3,4-Dichloro-3',4',5'-triBB	2000

PCB Metabolite Standards

Catalog No.	Compound	Concentration	Amount
OH-PCB			
OHCB-5114-1.2	4'-OH-3,3',4,5'-tetraCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5115-1.2	4-OH-2,3,3',4',5-pentaCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5117-1.2	4-OH-2,2',3,4',5,5'-hexaCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5118-1.2	3'-OH-2,2',3,4,4',5'-hexaCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5124-1.2	4'-OH-2,2',3,3',4,5,5'-heptaCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
MeO-PCB			
NEW MEOCB-5485-1.2	4-Methoxy-2,3,3',4',5-pentaCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
NEW MEOCB-5486-1.2	4-Methoxy-2,2',3,4',5,5'-hexaCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
MEOCB-5109-1.2	4-Methoxy-2,3,3',4',5-pentaCB (unlabeled)	50 µg/mL in nonane	1.2 mL
MEOCB-5111-1.2	4-Methoxy-2,2',3,4',5,5'-hexaCB (unlabeled)	50 µg/mL in nonane	1.2 mL
MEOCB-5135-1.2	4-Methoxy-2,2',3,4',5,5',6-heptaCB (unlabeled)	50 µg/mL in nonane	1.2 mL

Unlabeled Methyl Sulfone PCB Standards

Catalog No.	Compound	Concentration	Amount
MSCB-4027	3-MeSO ₂ -4-Me-2',3',4',5,5'-pentaCB (Internal Standard)	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4007	3-MeSO ₂ -2,2',4',5-tetraCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4008	4-MeSO ₂ -2,2',4',5-tetraCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4009	3-MeSO ₂ -2,2',4',5,5'-pentaCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4010	4-MeSO ₂ -2,2',4',5,5'-pentaCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4012	4-MeSO ₂ -2,3,3',4',6-pentaCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4013	3-MeSO ₂ -2,2',4',5,5',6-hexaCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4015	3-MeSO ₂ -DDE	40 ± 4 µg/mL in nonane	1.2 mL

3-MeSO₂-PCB4-MeSO₂-PCB