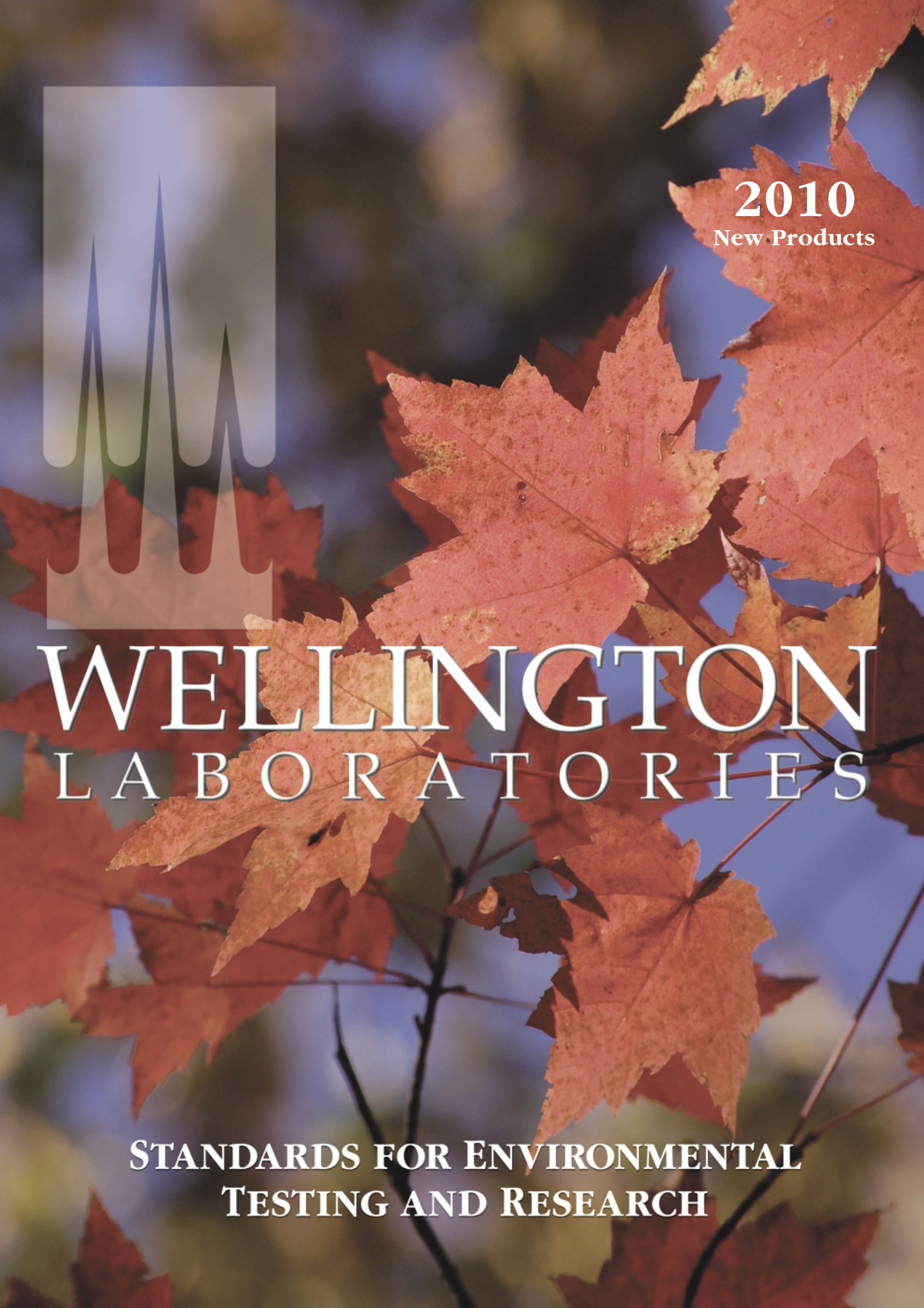


The background of the entire page is a close-up photograph of several autumn leaves, likely maple, in shades of red, orange, and brown. The leaves are slightly out of focus, creating a soft, natural texture.

2010
New Products

The logo is a stylized, semi-transparent graphic on the left side of the page. It consists of a series of vertical, pointed shapes that resemble a mountain range or a stylized 'W'. The colors transition from a light blue at the top to a darker blue, then to a greenish-yellow, and finally to a brownish-orange at the bottom, matching the autumn theme.

WELLINGTON
LABORATORIES

**STANDARDS FOR ENVIRONMENTAL
TESTING AND RESEARCH**

Welcome to the 2010 New Products Catalogue

平素は、Wellington Laboratories社標準品をご愛顧頂き誠に有難うございます。

さて、今般2010年度新製品のカatalogを作成致しましたので、ご案内申し上げます。

近年、ダイオキシン類の分析法も多様化して来ました。今回 Wellington Laboratories社では、多様化した分析法に対し、より精度高く、又簡便にご使用頂ける標準品を目指し、新製品を発売致しました。

今回の新製品は、従来 Syringe SpikeにPCDFsを使用して来ましたが、近年多様な Capillary Columnが使用されるようになり、Syringe Spikeに使用するPCDFsの一部が、Clean up Spikeと分離が不十分で有るとのお客様の声を受け、今回PCDDsを新たに合成し、Syringe SpikeにこれらPCDDsを使用することで、解決を図りました。

又、2010年1月25日に環境省より公表された、「絶縁油中の微量PCBに関する簡易測定マニュアル」に対応したPCB分析用標準品も発売致しました。

Wellington Laboratories社は、環境用標準品のリーディングカンパニーを目指し、今後も努力してまいります。何卒、従来の製品と合わせて、今回発売の新製品に付きましても、宜しくご愛顧頂けますようお願い申し上げます。

2010年1月

株式会社ウェリントン ラボラトリーズ ジャパン

加 坂 達 司

木 田 孝 文

2010 NEW PRODUCTS

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PCB分析用検量線作成用標準液

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CERTIFICATE OF REGISTRATION

This is to certify that

Wellington Laboratories

345 Southgate Drive, Guelph, Ontario N1G 3M5 Canada

operates a

Quality Management System

which complies with the requirements of

ISO 9001:2008

for the following scope of registration

The quality management system as it applies to the design and provision of reference standards and chemicals for use in environmental analysis and toxicological research.

Certificate No: CERT-0035261
File No: 1039334
Issue Date: January 15, 2010

Original Certification Date: December 30, 2004
Current Certification Date: December 29, 2007
Certificate Expiry Date: December 28, 2010

Chris Jouppi
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SAI GLOBAL

INFORM. INSPIRE. IMPROVE.

ダイオキシン類検量線作成用標準液

Calibration Solutions

PCDDs/PCDFs/DL-PCBs Mixture

PCDDs/PCDFs Mixture

DL-PCBs Mixture



Calibration Solution: PCDDs/PCDFs/DL-PCBs (Ratio1:2:5)

Catalogue Number	Product	Qty/Conc
DFP-CVS-B10-Set1	CS1/CS2/CS3/CS4/CS5	1Kit (5×200µl ampoules)
DFP-CVS-B10-Set2	CS2/CS3/CS4/CS5/CS6	1Kit (5×200µl ampoules)
DFP-B10-CS1	CS1	200µl
DFP-B10-CS2	CS2	200µl
DFP-B10-CS3	CS3	200µl
DFP-B10-CS4	CS4	200µl
DFP-B10-CS5	CS5	200µl
DFP-B10-CS6	CS6	200µl
DFP-B10-CS7	CS7	200µl

	CS1 (ng/ml)	CS2 (ng/ml)	CS3 (ng/ml)	CS4 (ng/ml)	CS5 (ng/ml)	CS6 (ng/ml)	CS7 (ng/ml)	
Native PCDDs & PCDFs								
1,3,6,8-Tetrachlorodibenzo-p-dioxin	0.1	0.5	2	10	50	200	500	
1,2,8,9-Tetrachlorodibenzo-p-dioxin	0.1	0.5	2	10	50	200	500	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.1	0.5	2	10	50	200	500	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.1	0.5	2	10	50	200	500	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.2	1	4	20	100	400	1000	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.2	1	4	20	100	400	1000	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.2	1	4	20	100	400	1000	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.2	1	4	20	100	400	1000	
Octachlorodibenzo-p-dioxin	0.5	2.5	10	50	250	1000	2500	
1,3,6,8-Tetrachlorodibenzofuran	0.1	0.5	2	10	50	200	500	
1,2,8,9-Tetrachlorodibenzofuran	0.1	0.5	2	10	50	200	500	
2,3,7,8-Tetrachlorodibenzofuran	0.1	0.5	2	10	50	200	500	
1,2,3,7,8-Pentachlorodibenzofuran	0.1	0.5	2	10	50	200	500	
2,3,4,7,8-Pentachlorodibenzofuran	0.1	0.5	2	10	50	200	500	
1,2,3,4,7,8-Hexachlorodibenzofuran	0.2	1	4	20	100	400	1000	
1,2,3,6,7,8-Hexachlorodibenzofuran	0.2	1	4	20	100	400	1000	
1,2,3,7,8,9-Hexachlorodibenzofuran	0.2	1	4	20	100	400	1000	
2,3,4,6,7,8-Hexachlorodibenzofuran	0.2	1	4	20	100	400	1000	
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.2	1	4	20	100	400	1000	
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.2	1	4	20	100	400	1000	
Octachlorodibenzofuran	0.5	2.5	10	50	250	1000	2500	
Native PCB Congeners	IUPAC							
3,3',4,4'-Tetrachlorobiphenyl	77	0.2	1	4	20	100	400	1000
3,4,4',5-Tetrachlorobiphenyl	81	0.2	1	4	20	100	400	1000
2,3,3',4,4'-Pentachlorobiphenyl	105	0.2	1	4	20	100	400	1000
2,3,4,4',5-Pentachlorobiphenyl	114	0.2	1	4	20	100	400	1000
2,3',4,4',5-Pentachlorobiphenyl	118	0.2	1	4	20	100	400	1000
2',3,4,4',5-Pentachlorobiphenyl	123	0.2	1	4	20	100	400	1000
3,3',4,4',5-Pentachlorobiphenyl	126	0.2	1	4	20	100	400	1000
2,3,3',4,4',5-Hexachlorobiphenyl	156	0.2	1	4	20	100	400	1000
2,3,3',4,4',5'-Hexachlorobiphenyl	157	0.2	1	4	20	100	400	1000
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.2	1	4	20	100	400	1000
3,3',4,4',5,5'-Hexachlorobiphenyl	169	0.2	1	4	20	100	400	1000
2,2',3,3',4,4',5-Heptachlorobiphenyl	170	0.2	1	4	20	100	400	1000
2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	0.2	1	4	20	100	400	1000
2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.2	1	4	20	100	400	1000

Continued on next page

Calibration Solution:PCDDs/PCDFs/DL-PCBs (Ratio1:2:5)

Mass-Labelled PCDDs & PCDFs

Surrogate/Extraction Spikes

	CS1 (ng/ml)	CS2 (ng/ml)	CS3 (ng/ml)	CS4 (ng/ml)	CS5 (ng/ml)	CS6 (ng/ml)	CS7 (ng/ml)
1,3,6,8-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
2,3,7,8-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
1,2,3,7,8-Pentachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
1,2,3,4,7,8-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
1,2,3,6,7,8-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
1,2,3,7,8,9-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
1,2,3,4,6,7,8-Heptachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
Octachloro[¹³ C ₁₂]dibenzo-p-dioxin	20	20	20	20	20	20	20

2,3,7,8-Tetrachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,7,8-Pentachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
2,3,4,7,8-Pentachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,4,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,6,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,7,8,9-Hexachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
2,3,4,6,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,4,6,7,8-Heptachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,4,7,8,9-Heptachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
Octachloro[¹³ C ₁₂]dibenzofuran	20	20	20	20	20	20	20

Sampling and Syringe Spikes

* 1,2,3,4-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
** 1,3,7,8-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
** 1,2,4,7,8-Pentachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
** 1,2,3,4,6,8-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
** 1,2,3,4,6,7,9-Heptachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10

Mass-Labelled PCB Congeners

Surrogate/Extraction Spikes

	IUPAC	CS1 (ng/ml)	CS2 (ng/ml)	CS3 (ng/ml)	CS4 (ng/ml)	CS5 (ng/ml)	CS6 (ng/ml)	CS7 (ng/ml)
3,3',4,4'-Tetrachloro[¹³ C ₁₂]biphenyl	77L	10	10	10	10	10	10	10
3,4,4',5-Tetrachloro[¹³ C ₁₂]biphenyl	81L	10	10	10	10	10	10	10
2,3,3',4,4'-Pentachloro[¹³ C ₁₂]biphenyl	105L	10	10	10	10	10	10	10
2,3,4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	114L	10	10	10	10	10	10	10
2,3',4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	118L	10	10	10	10	10	10	10
2',3,4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	123L	10	10	10	10	10	10	10
3,3',4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	126L	10	10	10	10	10	10	10
2,3,3',4,4',5-Hexachloro[¹³ C ₁₂]biphenyl	156L	10	10	10	10	10	10	10
2,3,3',4,4',5'-Hexachloro[¹³ C ₁₂]biphenyl	157L	10	10	10	10	10	10	10
2,3',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	167L	10	10	10	10	10	10	10
3,3',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	169L	10	10	10	10	10	10	10
2,2',3,3',4,4',5-Hexachloro[¹³ C ₁₂]biphenyl	170L	10	10	10	10	10	10	10
2,2',3,4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	180L	10	10	10	10	10	10	10
2,3,3',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	189L	10	10	10	10	10	10	10

Sampling and Syringe Spikes

* 3,3',4,5'-Tetrachloro[¹³ C ₁₂]biphenyl	79L	10	10	10	10	10	10	10
** 2,3',4',5-Tetrachloro[¹³ C ₁₂]biphenyl	70L	10	10	10	10	10	10	10
** 2,3,3',5,5'-Pentachloro[¹³ C ₁₂]biphenyl	111L	10	10	10	10	10	10	10
** 2,2',3,4,4',5'-Hexachloro[¹³ C ₁₂]biphenyl	138L	10	10	10	10	10	10	10
** 2,2',3,3',5,5',6-Heptachloro[¹³ C ₁₂]biphenyl	178L	10	10	10	10	10	10	10

* for sampling spike

** for syringe spike

Calibration Solution: PCDDs/PCDFs (Ratio 1:2:5)

Catalogue Number	Product	Qty/Conc
DF-CVS-C10-Set1	CS1/CS2/CS3/CS4/CS5	1Kit (5×200µl ampoules)
DF-CVS-C10-Set2	CS2/CS3/CS4/CS5/CS6	1Kit (5×200µl ampoules)
DF-C10-CS1	CS1	200µl
DF-C10-CS2	CS2	200µl
DF-C10-CS3	CS3	200µl
DF-C10-CS4	CS4	200µl
DF-C10-CS5	CS5	200µl
DF-C10-CS6	CS6	200µl
DF-C10-CS7	CS7	200µl

Native PCDDs & PCDFs	CS1 (ng/ml)	CS2 (ng/ml)	CS3 (ng/ml)	CS4 (ng/ml)	CS5 (ng/ml)	CS6 (ng/ml)	CS7 (ng/ml)
1,3,6,8-Tetrachlorodibenzo-p-dioxin	0.1	0.5	2	10	50	200	500
1,2,8,9-Tetrachlorodibenzo-p-dioxin	0.1	0.5	2	10	50	200	500
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.1	0.5	2	10	50	200	500
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.1	0.5	2	10	50	200	500
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.2	1	4	20	100	400	1000
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.2	1	4	20	100	400	1000
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.2	1	4	20	100	400	1000
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.2	1	4	20	100	400	1000
Octachlorodibenzo-p-dioxin	0.5	2.5	10	50	250	1000	2500
1,3,6,8-Tetrachlorodibenzofuran	0.1	0.5	2	10	50	200	500
1,2,8,9-Tetrachlorodibenzofuran	0.1	0.5	2	10	50	200	500
2,3,7,8-Tetrachlorodibenzofuran	0.1	0.5	2	10	50	200	500
1,2,3,7,8-Pentachlorodibenzofuran	0.1	0.5	2	10	50	200	500
2,3,4,7,8-Pentachlorodibenzofuran	0.1	0.5	2	10	50	200	500
1,2,3,4,7,8-Hexachlorodibenzofuran	0.2	1	4	20	100	400	1000
1,2,3,6,7,8-Hexachlorodibenzofuran	0.2	1	4	20	100	400	1000
1,2,3,7,8,9-Hexachlorodibenzofuran	0.2	1	4	20	100	400	1000
2,3,4,6,7,8-Hexachlorodibenzofuran	0.2	1	4	20	100	400	1000
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.2	1	4	20	100	400	1000
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.2	1	4	20	100	400	1000
Octachlorodibenzofuran	0.5	2.5	10	50	250	1000	2500

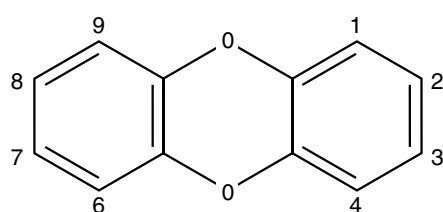
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Calibration Solution: PCDDs/PCDFs (Ratio 1:2:5)

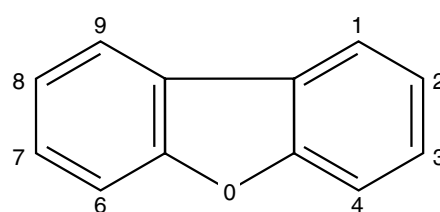
Mass-Labelled PCDDs & PCDFs	CS1 (ng/ml)	CS2 (ng/ml)	CS3 (ng/ml)	CS4 (ng/ml)	CS5 (ng/ml)	CS6 (ng/ml)	CS7 (ng/ml)
Surrogate/Extraction Spikes							
1,3,6,8-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
2,3,7,8-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
1,2,3,7,8-Pentachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
1,2,3,4,7,8-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
1,2,3,6,7,8-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
1,2,3,7,8,9-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
1,2,3,4,6,7,8-Heptachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
Octachloro[¹³ C ₁₂]dibenzo-p-dioxin	20	20	20	20	20	20	20
2,3,7,8-Tetrachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,7,8-Pentachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
2,3,4,7,8-Pentachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,4,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,6,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,7,8,9-Hexachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
2,3,4,6,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,4,6,7,8-Heptachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
1,2,3,4,7,8,9-Heptachloro[¹³ C ₁₂]dibenzofuran	10	10	10	10	10	10	10
Octachloro[¹³ C ₁₂]dibenzofuran	20	20	20	20	20	20	20
Sampling and Syringe Spikes							
* 1,2,3,4-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
** 1,3,7,8-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
** 1,2,4,7,8-Pentachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
** 1,2,3,4,6,8-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10
** 1,2,3,4,6,7,9-Heptachloro[¹³ C ₁₂]dibenzo-p-dioxin	10	10	10	10	10	10	10

* for sampling spike

** for syringe spike



dibenzo-p-dioxin



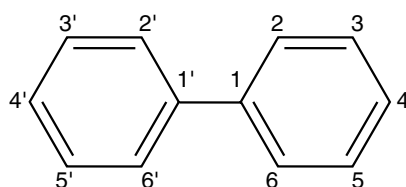
dibenzofuran

Calibration Solution: DL-PCBs

Catalogue Number	Product	Qty/Conc
PCB-CVS-B10-Set1	CS1/CS2/CS3/CS4/CS5	1Kit (5×200µl ampoules)
PCB-CVS-B10-Set2	CS2/CS3/CS4/CS5/CS6	1Kit (5×200µl ampoules)
PCB-B10-CS1	CS1	200µl
PCB-B10-CS2	CS2	200µl
PCB-B10-CS3	CS3	200µl
PCB-B10-CS4	CS4	200µl
PCB-B10-CS5	CS5	200µl
PCB-B10-CS6	CS6	200µl
PCB-B10-CS7	CS7	200µl

Native PCB Congeners	IUPAC	CS1 (ng/ml)	CS2 (ng/ml)	CS3 (ng/ml)	CS4 (ng/ml)	CS5 (ng/ml)	CS6 (ng/ml)	CS7 (ng/ml)
3,3',4,4'-Tetrachlorobiphenyl	77	0.2	1	4	20	100	400	1000
3,4,4',5-Tetrachlorobiphenyl	81	0.2	1	4	20	100	400	1000
2,3,3',4,4'-Pentachlorobiphenyl	105	0.2	1	4	20	100	400	1000
2,3,4,4',5-Pentachlorobiphenyl	114	0.2	1	4	20	100	400	1000
2,3',4,4',5-Pentachlorobiphenyl	118	0.2	1	4	20	100	400	1000
2',3,4,4',5-Pentachlorobiphenyl	123	0.2	1	4	20	100	400	1000
3,3',4,4',5-Pentachlorobiphenyl	126	0.2	1	4	20	100	400	1000
2,3,3',4,4',5-Hexachlorobiphenyl	156	0.2	1	4	20	100	400	1000
2,3,3',4,4',5'-Hexachlorobiphenyl	157	0.2	1	4	20	100	400	1000
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.2	1	4	20	100	400	1000
3,3',4,4',5,5'-Hexachlorobiphenyl	169	0.2	1	4	20	100	400	1000
2,2',3,3',4,4',5-Heptachlorobiphenyl	170	0.2	1	4	20	100	400	1000
2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	0.2	1	4	20	100	400	1000
2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.2	1	4	20	100	400	1000

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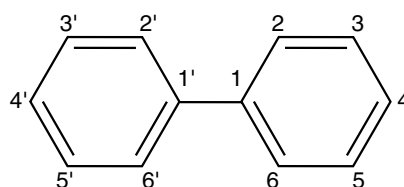


biphenyl

Mass-Labelled PCB Congeners Surrogate/Extraction Spikes	IUPAC	CS1 (ng/ml)	CS2 (ng/ml)	CS3 (ng/ml)	CS4 (ng/ml)	CS5 (ng/ml)	CS6 (ng/ml)	CS7 (ng/ml)
3,3',4,4'-Tetrachloro[¹³ C ₁₂]biphenyl	77L	10	10	10	10	10	10	10
3,4,4',5-Tetrachloro[¹³ C ₁₂]biphenyl	81L	10	10	10	10	10	10	10
2,3,3',4,4'-Pentachloro[¹³ C ₁₂]biphenyl	105L	10	10	10	10	10	10	10
2,3,4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	114L	10	10	10	10	10	10	10
2,3',4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	118L	10	10	10	10	10	10	10
2',3,4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	123L	10	10	10	10	10	10	10
3,3',4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	126L	10	10	10	10	10	10	10
2,3,3',4,4',5-Hexachloro[¹³ C ₁₂]biphenyl	156L	10	10	10	10	10	10	10
2,3,3',4,4',5'-Hexachloro[¹³ C ₁₂]biphenyl	157L	10	10	10	10	10	10	10
2,3',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	167L	10	10	10	10	10	10	10
3,3',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	169L	10	10	10	10	10	10	10
2,2',3,3',4,4',5-Heptachloro[¹³ C ₁₂]biphenyl	170L	10	10	10	10	10	10	10
2,2',3,4,4',5,5'-Heptachloro[¹³ C ₁₂]biphenyl	180L	10	10	10	10	10	10	10
2,3,3',4,4',5,5'-Heptachloro[¹³ C ₁₂]biphenyl	189L	10	10	10	10	10	10	10
Sampling and Syringe Spikes								
* 3,3',4,5'-Tetrachloro[¹³ C ₁₂]biphenyl	79L	10	10	10	10	10	10	10
** 2,3',4',5-Tetrachloro[¹³ C ₁₂]biphenyl	70L	10	10	10	10	10	10	10
** 2,3,3',5,5'-Pentachloro[¹³ C ₁₂]biphenyl	111L	10	10	10	10	10	10	10
** 2,2',3,4,4',5'-Hexachloro[¹³ C ₁₂]biphenyl	138L	10	10	10	10	10	10	10
** 2,2',3,3',5,5',6-Heptachloro[¹³ C ₁₂]biphenyl	178L	10	10	10	10	10	10	10

* for sampling spike

** for syringe spike



biphenyl



ダイオキシン類検量線作成用標準液
SUPPORT SOLUTIONS

Mass-Labelled
PCDDs/PCDFs/DL-PCBs Solution/Mixtures
PCDDs/PCDFs Solution/Mixtures
DL-PCBs Solution/Mixtures

NATIVE SOLUTION/MIXTURES

Native
PCDDs/PCDFs/DL-PCBs Solution/Mixtures
PCDDs/PCDFs Solution/Mixtures
DL-PCBs Solution/Mixtures



Mass-Labelled PCDDs/PCDFs/DL-PCBs: Solution/Mixtures

Support Solutions for **DFP-CVS-B10**, **DF-CVS-C10** and **PCB-CVS-B10**

Catalogue Number	Product	Qty/Conc
DFP-LCS-B	Mass-Labelled PCDDs/PCDFs/DL-PCBs Solution/Mixture	1.2ml
DFP-LCS-B100	Mass-Labelled PCDDs/PCDFs/DL-PCBs Solution/Mixture	1.2ml
DFP-LCS-B20	Mass-Labelled PCDDs/PCDFs/DL-PCBs Solution/Mixture	1.2ml

Mass-Labelled PCDDs & PCDFs	DFP-LCS-B (ng/ml)	DFP-LCS-B100 (ng/ml)	DFP-LCS-B20 (ng/ml)
1,3,6,8-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
2,3,7,8-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,7,8-Pentachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,4,7,8-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,6,7,8-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,7,8,9-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,4,6,7,8-Heptachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
Octachloro[¹³ C ₁₂]dibenzo-p-dioxin	2000	200	40

2,3,7,8-Tetrachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,7,8-Pentachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
2,3,4,7,8-Pentachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,4,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,6,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,7,8,9-Hexachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
2,3,4,6,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,4,6,7,8-Heptachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,4,7,8,9-Heptachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
Octachloro[¹³ C ₁₂]dibenzofuran	2000	200	40

Mass-Labelled PCB Congeners	IUPAC	DFP-LCS-B (ng/ml)	DFP-LCS-B100 (ng/ml)	DFP-LCS-B20 (ng/ml)
3,3',4,4'-Tetrachloro[¹³ C ₁₂]biphenyl	77L	1000	100	20
3,4,4',5-Tetrachloro[¹³ C ₁₂]biphenyl	81L	1000	100	20
2,3,3',4,4'-Pentachloro[¹³ C ₁₂]biphenyl	105L	1000	100	20
2,3,4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	114L	1000	100	20
2,3',4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	118L	1000	100	20
2',3,4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	123L	1000	100	20
3,3',4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	126L	1000	100	20
2,3,3',4,4',5-Hexachloro[¹³ C ₁₂]biphenyl	156L	1000	100	20
2,3,3',4,4',5'-Hexachloro[¹³ C ₁₂]biphenyl	157L	1000	100	20
2,3',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	167L	1000	100	20
3,3',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	169L	1000	100	20
2,2',3,3',4,4',5-Heptachloro[¹³ C ₁₂]biphenyl	170L	1000	100	20
2,2',3,4,4',5,5'-Heptachloro[¹³ C ₁₂]biphenyl	180L	1000	100	20
2,3,3',4,4',5,5'-Heptachloro[¹³ C ₁₂]biphenyl	189L	1000	100	20

Mass-Labelled PCDDs/PCDFs: Solution/Mixtures

Support Solutions for **DFP-CVS-B10,DF-CVS-C10**

Catalogue Number	Product	Qty/Conc
DF-LCS-B	Mass-Labelled PCDDs/PCDFs Solution/Mixture	1.2ml
DF-LCS-B100	Mass-Labelled PCDDs/PCDFs Solution/Mixture	1.2ml
DF-LCS-B20	Mass-Labelled PCDDs/PCDFs Solution/Mixture	1.2ml

	DF-LCS-B (ng/ml)	DF-LCS-B100 (ng/ml)	DF-LCS-B20 (ng/ml)
Mass-Labelled PCDDs & PCDFs			
1,3,6,8-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
2,3,7,8-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,7,8-Pentachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,4,7,8-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,6,7,8-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,7,8,9-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,4,6,7,8-Heptachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
Octachloro[¹³ C ₁₂]dibenzo-p-dioxin	2000	200	40
2,3,7,8-Tetrachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,7,8-Pentachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
2,3,4,7,8-Pentachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,4,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,6,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,7,8,9-Hexachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
2,3,4,6,7,8-Hexachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,4,6,7,8-Heptachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
1,2,3,4,7,8,9-Heptachloro[¹³ C ₁₂]dibenzofuran	1000	100	20
Octachloro[¹³ C ₁₂]dibenzofuran	2000	200	40

Catalogue Number	Product	Qty/Conc
DF-IS-J	Mass-Labelled PCDDs Syringe Spike Solution	1.2ml
DF-IS-J100	Mass-Labelled PCDDs Syringe Spike Solution	1.2ml
DF-IS-J20	Mass-Labelled PCDDs Syringe Spike Solution	1.2ml

	DF-IS-J (ng/ml)	DF-IS-J100 (ng/ml)	DF-IS-J20 (ng/ml)
Mass-Labelled PCDDs			
1,3,7,8-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,4,7,8-Pentachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,4,6,8-Hexachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20
1,2,3,4,6,7,9-Heptachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20

Catalogue Number	Product	Qty/Conc
DF-SS-A	Mass-Labelled PCDD Sampling Spike Solution	1.2ml
DF-SS-A100	Mass-Labelled PCDD Sampling Spike Solution	1.2ml
DF-SS-A20	Mass-Labelled PCDD Sampling Spike Solution	1.2ml

	DF-SS-A (ng/ml)	DF-SS-A100 (ng/ml)	DF-SS-A20 (ng/ml)
Mass-Labelled PCDD			
1,2,3,4-Tetrachloro[¹³ C ₁₂]dibenzo-p-dioxin	1000	100	20

Mass-Labelled DL-PCBs: Solution/Mixtures

Support Solutions for **DFP-CVS-B10,PCB-CVS-B10**

Catalogue Number	Product	Qty/Conc
PCB-LCS-A1	Mass-Labelled DL-PCBs Solution/Mixture	1.2ml
PCB-LCS-A100	Mass-Labelled DL-PCBs Solution/Mixture	1.2ml
PCB-LCS-A20	Mass-Labelled D-LPCBs Solution/Mixture	1.2ml

Mass-Labelled PCB Congeners	IUPAC	PCB-LCS-A1 (ng/ml)	PCB-LCS-A100 (ng/ml)	PCB-LCS-A20 (ng/ml)
3,3',4,4'-Tetrachloro[¹³ C ₁₂]biphenyl	77L	1000	100	20
3,4,4',5-Tetrachloro[¹³ C ₁₂]biphenyl	81L	1000	100	20
2,3,3',4,4'-Pentachloro[¹³ C ₁₂]biphenyl	105L	1000	100	20
2,3,4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	114L	1000	100	20
2,3',4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	118L	1000	100	20
2',3,4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	123L	1000	100	20
3,3',4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	126L	1000	100	20
2,3,3',4,4',5-Hexachloro[¹³ C ₁₂]biphenyl	156L	1000	100	20
2,3,3',4,4',5'-Hexachloro[¹³ C ₁₂]biphenyl	157L	1000	100	20
2,3',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	167L	1000	100	20
3,3',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	169L	1000	100	20
2,2',3,3',4,4',5-Heptachloro[¹³ C ₁₂]biphenyl	170L	1000	100	20
2,2',3,4,4',5,5'-Heptachloro[¹³ C ₁₂]biphenyl	180L	1000	100	20
2,3,3',4,4',5,5'-Heptachloro[¹³ C ₁₂]biphenyl	189L	1000	100	20

Catalogue Number	Product	Qty/Conc
PCB-IS-C	Mass-Labelled PCBs Syringe Spike Solution	1.2ml
PCB-IS-C100	Mass-Labelled PCBs Syringe Spike Solution	1.2ml
PCB-IS-C20	Mass-Labelled PCBs Syringe Spike Solution	1.2ml

Mass-Labelled PCB Congeners	IUPAC	PCB-IS-C (ng/ml)	PCB-IS-C100 (ng/ml)	PCB-IS-C20 (ng/ml)
2,3',4',5-Tetrachloro[¹³ C ₁₂]biphenyl	70L	1000	100	20
2,3,3',5,5'-Pentachloro[¹³ C ₁₂]biphenyl	111L	1000	100	20
2,2',3,4,4',5'-Hexachloro[¹³ C ₁₂]biphenyl	138L	1000	100	20
2,2',3,3',5,5',6-Heptachloro[¹³ C ₁₂]biphenyl	178L	1000	100	20

Catalogue Number	Product	Qty/Conc
PCB-SS-A	Mass-Labelled PCB Sampling Spike Solution	1.2ml
PCB-SS-A100	Mass-Labelled PCB Sampling Spike Solution	1.2ml
PCB-SS-A20	Mass-Labelled PCB Sampling Spike Solution	1.2ml

Mass-Labelled PCB Congener	IUPAC	PCB-SS-A (ng/ml)	PCB-SS-A100 (ng/ml)	PCB-SS-A20 (ng/ml)
3,3',4,5'-Tetrachloro[¹³ C ₁₂]biphenyl	79L	1000	100	20

Native PCDDs/PCDFs/DL-PCBs: Solution/Mixtures

Catalogue Number	Product	Qty/Conc
DFP-ST-C10	Native PCDDs/PCDFs/DL-PCBs Solution/Mixture	1.2ml
DF-ST-C10	Native PCDDs/PCDFs Solution/Mixture	1.2ml
PCB-ST-C20	Native DL-PCBs Solution/Mixture	1.2ml

		DFP-ST-C10 (ng/ml)	DF-ST-C10 (ng/ml)	PCB-ST-C20 (ng/ml)
Native PCDDs & PCDFs				
1,3,6,8-Tetrachlorodibenzo-p-dioxin		10	10	
1,2,8,9-Tetrachlorodibenzo-p-dioxin		10	10	
2,3,7,8-Tetrachlorodibenzo-p-dioxin		10	10	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin		10	10	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin		20	20	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin		20	20	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin		20	20	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin		20	20	
Octachlorodibenzo-p-dioxin		50	50	
1,3,6,8-Tetrachlorodibenzofuran		10	10	
1,2,8,9-Tetrachlorodibenzofuran		10	10	
2,3,7,8-Tetrachlorodibenzofuran		10	10	
1,2,3,7,8-Pentachlorodibenzofuran		10	10	
2,3,4,7,8-Pentachlorodibenzofuran		10	10	
1,2,3,4,7,8-Hexachlorodibenzofuran		20	20	
1,2,3,6,7,8-Hexachlorodibenzofuran		20	20	
1,2,3,7,8,9-Hexachlorodibenzofuran		20	20	
2,3,4,6,7,8-Hexachlorodibenzofuran		20	20	
1,2,3,4,6,7,8-Heptachlorodibenzofuran		20	20	
1,2,3,4,7,8,9-Heptachlorodibenzofuran		20	20	
Octachlorodibenzofuran		50	50	
Native PCB Congeners				
	IUPAC			
3,3',4,4'-Tetrachlorobiphenyl	77	20		20
3,4,4',5-Tetrachlorobiphenyl	81	20		20
2,3,3',4,4'-Pentachlorobiphenyl	105	20		20
2,3,4,4',5-Pentachlorobiphenyl	114	20		20
2,3',4,4',5-Pentachlorobiphenyl	118	20		20
2',3,4,4',5-Pentachlorobiphenyl	123	20		20
3,3',4,4',5-Pentachlorobiphenyl	126	20		20
2,3,3',4,4',5-Hexachlorobiphenyl	156	20		20
2,3,3',4,4',5'-Hexachlorobiphenyl	157	20		20
2,3',4,4',5,5'-Hexachlorobiphenyl	167	20		20
3,3',4,4',5,5'-Hexachlorobiphenyl	169	20		20
2,2',3,3',4,4',5-Heptachlorobiphenyl	170	20		20
2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	20		20
2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	20		20



PCB分析用検量線作成用標準液

Calibration Solutions: PCBs
Mass-Labelled PCBs: Solution/Mixture
Native PCBs: Solution/Mixtures



Calibration Solutions: Total PCBs

Catalogue Number	Product	Qty/Conc
OIL-CVS-B	CS1-B/CS2-B/CS3-B/CS4-B/CS5-B/CS6-B	1Kit (6×200µl ampoules)
OIL-CS1-B	CS1	200µl
OIL-CS2-B	CS2	200µl
OIL-CS3-B	CS3	200µl
OIL-CS4-B	CS4	200µl
OIL-CS5-B	CS5	200µl
OIL-CS6-B	CS6	200µl

Native PCB Congeners	IUPAC	CS1-B (ng/ml)	CS2-B (ng/ml)	CS3-B (ng/ml)	CS4-B (ng/ml)	CS5-B (ng/ml)	CS6-B (ng/ml)
4-Chlorobiphenyl	3	0.5	2	10	40	200	1000
2,4'-Dichlorobiphenyl	8	0.5	2	10	40	200	1000
2,4,4'-Trichlorobiphenyl	28	0.5	2	10	40	200	1000
2,2',5,5'-Tetrachlorobiphenyl	52	0.5	2	10	40	200	1000
2,2',4,5,5'-Pentachlorobiphenyl	101	0.5	2	10	40	200	1000
2,3',4,4',5-Pentachlorobiphenyl	118	0.5	2	10	40	200	1000
2,2',3,4,4',5'-Hexachlorobiphenyl	138	0.5	2	10	40	200	1000
2,2',4,4',5,5'-Hexachlorobiphenyl	153	0.5	2	10	40	200	1000
2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	0.5	2	10	40	200	1000
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	194	0.5	2	10	40	200	1000
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	0.5	2	10	40	200	1000
Decachlorobiphenyl	209	0.5	2	10	40	200	1000
Mass-Labelled PCB Congeners	IUPAC						
4-Chloro[¹³ C ₁₂]biphenyl	3L	40	40	40	40	40	40
2,4'-Dichloro[¹³ C ₁₂]biphenyl	8L	40	40	40	40	40	40
2,4,4'-Trichloro[¹³ C ₁₂]biphenyl	28L	40	40	40	40	40	40
2,2',5,5'-Tetrachloro[¹³ C ₁₂]biphenyl	52L	40	40	40	40	40	40
2,2',4,5,5'-Pentachloro[¹³ C ₁₂]biphenyl	101L	40	40	40	40	40	40
2,3',4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	118L	40	40	40	40	40	40
2,2',3,4,4',5'-Hexachloro[¹³ C ₁₂]biphenyl	138L	40	40	40	40	40	40
2,2',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	153L	40	40	40	40	40	40
2,2',3,4,4',5,5'-Heptachloro[¹³ C ₁₂]biphenyl	180L	40	40	40	40	40	40
2,2',3,3',4,4',5,5'-Octachloro[¹³ C ₁₂]biphenyl	194L	40	40	40	40	40	40
2,2',3,3',4,4',5,5',6-Nonachloro[¹³ C ₁₂]biphenyl	206L	40	40	40	40	40	40
Decachloro[¹³ C ₁₂]biphenyl	209L	40	40	40	40	40	40

Mass-Labelled PCBs: Solution/Mixture

Support Solution for **OIL-CVS-B**

Catalogue Number	Product	Qty/Conc																																							
MBP-MXP	Mass-Labelled PCBs Internal Standard Solution	1.2ml																																							
<table> <tr> <th>Mass-Labelled PCB Congeners</th><th>IUPAC</th><th>MBP-MXP (ng/ml)</th></tr> <tr><td>4-Chloro[¹³C₁₂]biphenyl</td><td>3L</td><td>500</td></tr> <tr><td>2,4'-Dichloro[¹³C₁₂]biphenyl</td><td>8L</td><td>500</td></tr> <tr><td>2,4,4'-Trichloro[¹³C₁₂]biphenyl</td><td>28L</td><td>500</td></tr> <tr><td>2,2',5,5'-Tetrachloro[¹³C₁₂]biphenyl</td><td>52L</td><td>500</td></tr> <tr><td>2,2',4,5,5'-Pentachloro[¹³C₁₂]biphenyl</td><td>101L</td><td>500</td></tr> <tr><td>2,3',4,4',5-Pentachloro[¹³C₁₂]biphenyl</td><td>118L</td><td>500</td></tr> <tr><td>2,2',3,4,4',5'-Hexachloro[¹³C₁₂]biphenyl</td><td>138L</td><td>500</td></tr> <tr><td>2,2',4,4',5,5'-Hexachloro[¹³C₁₂]biphenyl</td><td>153L</td><td>500</td></tr> <tr><td>2,2',3,4,4',5,5'-Heptachloro[¹³C₁₂]biphenyl</td><td>180L</td><td>500</td></tr> <tr><td>2,2',3,3',4,4',5,5'-Octachloro[¹³C₁₂]biphenyl</td><td>194L</td><td>500</td></tr> <tr><td>2,2',3,3',4,4',5,5',6-Nonachloro[¹³C₁₂]biphenyl</td><td>206L</td><td>500</td></tr> <tr><td>Decachloro[¹³C₁₂]biphenyl</td><td>209L</td><td>500</td></tr> </table>			Mass-Labelled PCB Congeners	IUPAC	MBP-MXP (ng/ml)	4-Chloro[¹³ C ₁₂]biphenyl	3L	500	2,4'-Dichloro[¹³ C ₁₂]biphenyl	8L	500	2,4,4'-Trichloro[¹³ C ₁₂]biphenyl	28L	500	2,2',5,5'-Tetrachloro[¹³ C ₁₂]biphenyl	52L	500	2,2',4,5,5'-Pentachloro[¹³ C ₁₂]biphenyl	101L	500	2,3',4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	118L	500	2,2',3,4,4',5'-Hexachloro[¹³ C ₁₂]biphenyl	138L	500	2,2',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	153L	500	2,2',3,4,4',5,5'-Heptachloro[¹³ C ₁₂]biphenyl	180L	500	2,2',3,3',4,4',5,5'-Octachloro[¹³ C ₁₂]biphenyl	194L	500	2,2',3,3',4,4',5,5',6-Nonachloro[¹³ C ₁₂]biphenyl	206L	500	Decachloro[¹³ C ₁₂]biphenyl	209L	500
Mass-Labelled PCB Congeners	IUPAC	MBP-MXP (ng/ml)																																							
4-Chloro[¹³ C ₁₂]biphenyl	3L	500																																							
2,4'-Dichloro[¹³ C ₁₂]biphenyl	8L	500																																							
2,4,4'-Trichloro[¹³ C ₁₂]biphenyl	28L	500																																							
2,2',5,5'-Tetrachloro[¹³ C ₁₂]biphenyl	52L	500																																							
2,2',4,5,5'-Pentachloro[¹³ C ₁₂]biphenyl	101L	500																																							
2,3',4,4',5-Pentachloro[¹³ C ₁₂]biphenyl	118L	500																																							
2,2',3,4,4',5'-Hexachloro[¹³ C ₁₂]biphenyl	138L	500																																							
2,2',4,4',5,5'-Hexachloro[¹³ C ₁₂]biphenyl	153L	500																																							
2,2',3,4,4',5,5'-Heptachloro[¹³ C ₁₂]biphenyl	180L	500																																							
2,2',3,3',4,4',5,5'-Octachloro[¹³ C ₁₂]biphenyl	194L	500																																							
2,2',3,3',4,4',5,5',6-Nonachloro[¹³ C ₁₂]biphenyl	206L	500																																							
Decachloro[¹³ C ₁₂]biphenyl	209L	500																																							

Native PCBs: Solution/Mixtures

Catalogue Number	Product	Qty/Conc	
BP-WD	Native PCBs Window Defining Mixture Solution	1.2ml	
BP-MXP	Native PCBs Mixture Solution	1.2ml	
NATIVE PCB CONGENERS	IUPAC	BP-WD (ng/ml)	BP-MXP (ng/ml)
Biphenyl	-	2500	
2-Chlorobiphenyl	1	2500	
4-Chlorobiphenyl	3	2500	2000
2,4'-Dichlorobiphenyl	8		2000
2,6-Dichlorobiphenyl	10	2500	
4,4'-Dichlorobiphenyl	15	2500	
2,2',6-Trichlorobiphenyl	19	2500	
2,4,4'-Trichlorobiphenyl	28		2000
3,4,4'-Trichlorobiphenyl	37	2500	
2,2',5,5'-Tetrachlorobiphenyl	52		2000
2,2',6,6'-Tetrachlorobiphenyl	54	2500	
3,3',4,4'-Tetrachlorobiphenyl	77	2500	
2,2',4,5,5'-Pentachlorobiphenyl	101		2000
2,2',4,6,6'-Pentachlorobiphenyl	104	2500	
2,3',4,4',5-Pentachlorobiphenyl	118		2000
3,3',4,4',5-Pentachlorobiphenyl	126	2500	
2,2',3,4,4',5'-Hexachlorobiphenyl	138		2000
2,2',4,4',5,5'-Hexachlorobiphenyl	153		2000
2,2',4,4',6,6'-Hexachlorobiphenyl	155	2500	
3,3',4,4',5,5'-Hexachlorobiphenyl	169	2500	
2,2',3,4,4',5,5'-Heptachlorobiphenyl	180		2000
2,2',3,4',5,6,6'-Heptachlorobiphenyl	188	2500	
2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	2500	
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	194		2000
2,2',3,3',5,5',6,6'-Octachlorobiphenyl	202	2500	
2,3,3',4,4',5,5',6-Octachlorobiphenyl	205	2500	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	2500	2000
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	208	2500	
Decachlorobiphenyl	209	2500	2000

APPENDIX EXACT MASS & RELATIVE ION ABUNDANCE OF SELECTED CHLORINATED AROMATIC HYDROCARBONS

# of Cl	PCTs			PCBs			PCHBs			PCDDs		
	¹² C ₁₈	C ₁₈ H _{14-n} Cl _n	¹³ C ₁₈	¹² C ₁₂	C ₁₂ H _{10-n} Cl _n	¹³ C ₁₂	¹² C ₁₂	C ₁₂ H _{9-n} Cl _n OH	¹³ C ₁₂	¹² C ₁₂	C ₁₂ H _{8-n} Cl _n O ₂	¹³ C ₁₂
	Exact Mass	Relative Abundance	Exact Mass	Exact Mass	Relative Abundance	Exact Mass	Exact Mass	Relative Abundance	Exact Mass	Exact Mass	Relative Abundance	Exact Mass
0	230.1096	100	248.1699	154.0783	100	166.1185	170.0732	100	182.1134	184.0524	100	196.0927
1	264.0706	100	282.1310	188.0393	100	200.0795	204.0342	100	216.0745	218.0135	100	230.0537
	266.0676	34.4	284.1280	190.0363	33.2	202.0766	206.0312	33.5	218.0715	220.0105	33.7	232.0508
2	298.0316	100	316.0920	222.0003	100	234.0406	237.9952	100	250.0355	251.9745	100	264.0147
	300.0287	66.8	318.0890	223.9974	65.6	236.0376	239.9923	65.9	252.0325	253.9715	66.1	266.0118
	302.0257	11.8	320.0861	225.9944	11.0	238.0347	241.9893	11.2	254.0296	255.9686	11.3	268.0088
3	331.9926	100	350.0530	255.9613	100	268.0016	271.9562	100	283.9965	285.9355	100	297.9758
	333.9897	99.2	352.0501	257.9584	98.0	269.9986	273.9533	98.2	285.9936	287.9326	98.5	299.9728
	335.9867	33.4	354.0471	259.9554	32.3	271.9957	275.9503	32.5	287.9906	289.9296	32.7	301.9699
	337.9838	4.0	356.0442	261.9525	3.7	273.9927	277.9474	3.7	289.9877	291.9267	3.8	303.9669
4	365.9537	76.0	384.0141	289.9224	76.7	301.9626	305.9173	76.5	317.9575	319.8965	76.4	331.9368
	367.9507	100	386.0111	291.9194	100	303.9597	307.9143	100	319.9546	321.8936	100	333.9339
	369.9478	49.8	388.0082	293.9165	49.1	305.9567	309.9114	49.3	321.9516	323.8906	49.4	335.9309
	371.9448	11.3	390.0052	295.9135	10.8	307.9538	311.9084	10.9	323.9487	325.8877	11.0	337.9280
5	399.9147	61.0	417.9751	323.8834	61.4	335.9237	339.8783	61.3	351.9186	353.8576	61.3	365.8978
	401.9117	100	419.9721	325.8804	100	337.9207	341.8754	100	353.9156	355.8546	100	367.8949
	403.9088	66.0	421.9692	327.8775	65.3	339.9178	343.8724	65.4	355.9127	357.8517	65.5	369.8919
	405.9058	22.0	423.9662	329.8745	21.4	341.9148	345.8695	21.5	357.9097	359.8487	21.6	371.8890
6	433.8757	50.9	451.9361	357.8444	51.2	369.8847	373.8393	51.2	385.8796	387.8186	51.1	399.8589
	435.8728	100	453.9332	359.8415	100	371.8817	375.8364	100	387.8766	389.8156	100	401.8559
	437.8698	82.1	455.9302	361.8385	81.5	373.8788	377.8334	81.6	389.8737	391.8127	81.7	403.8530
	439.8669	36.2	457.9273	363.8356	35.5	375.8758	379.8305	35.6	391.8707	393.8097	35.8	405.8500
7	467.8367	43.7	485.8971	391.8054	43.9	403.8457	407.8004	43.9	419.8406	421.7796	43.9	433.8199
	469.8338	100	487.8942	393.8025	100	405.8428	409.7974	100	421.8377	423.7767	100	435.8169
	471.8308	98.3	489.8912	395.7995	97.7	407.8398	411.7945	97.8	423.8347	425.7737	97.9	437.8140
	473.8279	53.9	491.8883	397.7966	53.1	409.8369	413.7915	53.3	425.8318	427.7708	53.4	439.8110
	475.8249	17.9	493.8853	399.7936	17.4	411.8339	415.7886	17.5	427.8288	429.7678	17.6	441.8081
8	501.7978	33.5	519.8582	425.7665	33.8	437.8067	441.7614	33.7	453.8016	455.7407	33.7	467.7809
	503.7948	87.4	521.8552	427.7635	87.8	439.8038	443.7584	87.7	455.7987	457.7377	87.6	469.7780
	505.7919	100	523.8523	429.7606	100	441.8008	445.7555	100	457.7957	459.7348	100	471.7750
	507.7889	65.6	525.8493	431.7576	65.2	443.7979	447.7525	65.2	459.7928	461.7318	65.3	473.7721
	509.7860	27.0	527.8464	433.7547	26.6	445.7949	449.7496	26.7	461.7898	463.7289	26.8	475.7691
9	535.7588	26.1	553.8192	459.7275	26.3	471.7678	475.7224	26.3	487.7627			
	537.7559	76.5	555.8162	461.7246	76.9	473.7648	477.7195	76.8	489.7597			
	539.7529	100	557.8133	463.7216	100	475.7619	479.7165	100	491.7568			
	541.7500	76.4	559.8103	465.7187	75.9	477.7589	481.7136	76.0	493.7538			
	543.7470	37.6	561.8074	467.7157	37.1	479.7560	483.7106	37.2	495.7509			
10	569.7198	20.9	587.7802	493.6885	21.1	505.7288						
	571.7169	68.1	589.7773	495.6856	68.4	507.7258						
	573.7139	100	591.7743	497.6826	100	509.7229						
	575.7110	87.2	593.7714	499.6797	86.7	511.7199						
	577.7080	50.0	595.7684	501.6767	49.4	513.7170						
11	603.6809	17.1	621.7412									
	605.6779	61.3	623.7383									
	607.6750	100	625.7353									
	609.6720	98.0	627.7324									
	611.6691	64.1	629.7294									
	613.6661	29.4	631.7265									
12	637.6419	13.1	655.7023									
	639.6389	51.3	657.6993									
	641.6360	92.0	659.6964									
	643.6330	100	661.6934									
	645.6301	73.5	663.6905									
	647.6271	38.5	665.6875									
13	671.6029	10.1	689.6633									
	673.6000	42.8	691.6604									
	675.5970	83.7	693.6574									
	677.5941	100	695.6545									
	679.5911	81.6	697.6515									
	681.5882	48.0	699.6486									
14	705.5639	8.0	723.6243									
	707.5610	36.3	725.6214									
	709.5580	76.7	727.6184									
	711.5551	100	729.6155									
	713.5521	89.7	731.6125									
	715.5492	58.6	733.6096									

# of Cl	PCDFs			PCNs			CBs			CPs		
	¹² C ₁₂	C ₁₂ H _{8-n} Cl _n O	¹³ C ₁₂	¹² C ₁₀	C ₁₀ H _{8-n} Cl _n	¹³ C ₁₀	¹² C ₆	C ₆ H _{6-n} Cl _n	¹³ C ₆	¹² C ₆	C ₆ H _{5-n} Cl _n OH	¹³ C ₆
	Exact Mass	Relative Abundance	Exact Mass	Exact Mass	Relative Abundance	Exact Mass	Exact Mass	Relative Abundance	Exact Mass	Exact Mass	Relative Abundance	Exact Mass
0	168.0575	100	180.0978	128.0626	100	138.0962	78.0470	100	84.0671	94.0419	100	100.0620
1	202.0185	100	214.0588	162.0236	100	172.0572	112.0080	100	118.0281	128.0029	100	134.0230
	204.0156	33.5	216.0559	164.0207	33.0	174.0542	114.0050	32.6	120.0252	129.9999	32.8	136.0201
2	235.9796	100	248.0198	195.9847	100	206.0182	145.9690	100	151.9891	161.9639	100	167.9841
	237.9766	65.8	250.0169	197.9817	65.4	208.0153	147.9661	65.0	153.9862	163.9610	65.2	169.9811
	239.9737	11.2	252.0139	199.9788	10.9	210.0123	149.9631	10.6	155.9832	165.9580	10.8	171.9782
3	269.9406	100	281.9809	229.9457	100	239.9792	179.9300	100	185.9502	195.9249	100	201.9451
	271.9376	98.2	283.9779	231.9427	97.8	241.9763	181.9271	97.4	187.9472	197.9220	97.6	203.9421
	273.9347	32.5	285.9750	233.9398	32.0	243.9733	183.9241	31.7	189.9443	199.9190	31.9	205.9392
	275.9317	3.7	287.9720	235.9368	3.6	245.9704	185.9212	3.5	191.9413	201.9161	3.5	207.9362
4	303.9016	76.5	315.9419	263.9067	76.8	273.9403	213.8911	77.1	219.9112	229.8860	76.9	235.9061
	305.8987	100	317.9389	265.9038	100	275.9373	215.8881	100	221.9082	231.8830	100	237.9032
	307.8957	49.2	319.9360	267.9008	49.0	277.9344	217.8852	48.7	223.9053	233.8801	48.8	239.9002
	309.8928	10.9	321.9330	269.8979	10.7	279.9314	219.8822	10.6	225.9023	235.8771	10.7	241.8973
5	337.8627	61.3	349.9029	297.8677	61.5	307.9013	247.8521	61.7	253.8722	263.8470	61.6	269.8671
	339.8597	100	351.9000	299.8648	100	309.8983	249.8491	100	255.8693	265.8441	100	271.8642
	341.8568	65.4	353.8970	301.8618	65.1	311.8954	251.8462	64.9	257.8663	267.8411	65.0	273.8612
	343.8538	21.5	355.8941	303.8589	21.3	313.8924	253.8432	21.1	259.8634	269.8382	21.2	275.8583
6	371.8237	51.2	383.8639	331.8288	51.3	341.8623	281.8131	51.4	287.8332			
	373.8207	100	385.8610	333.8258	100	343.8594	283.8102	100	289.8303			
	375.8178	81.6	387.8580	335.8229	81.3	345.8564	285.8072	81.1	291.8273			
	377.8148	35.6	389.8551	337.8199	35.3	347.8535	287.8043	35.1	293.8244			
7	405.7847	43.9	417.8250	365.7898	44.0	375.8233						
	407.7818	100	419.8220	367.7868	100	377.8204						
	409.7788	97.8	421.8191	369.7839	97.5	379.8174						
	411.7759	53.3	423.8161	371.7809	52.9	381.8145						
	413.7729	17.5	425.8132	373.7780	17.3	383.8115						
8	439.7457	33.7	451.7860	399.7508	33.9	409.7844						
	441.7428	87.7	453.7830	401.7479	87.9	411.7814						
	443.7398	100	455.7801	403.7449	100	413.7785						
	445.7369	65.2	457.7771	405.7420	65.0	415.7755						
	447.7339	26.7	459.7742	407.7390	26.5	417.7726						

PCTs = polychlorinated terphenyls
PCBs = polychlorinated biphenyls
PCHBs = polychlorinated hydroxybiphenyls
PCDDs = polychlorinated dibenzo- p-dioxins
PCDFs = polychlorinated dibenzofurans
PCNs = polychlorinated naphthalenes
CBs = chlorobenzenes
CPs = chlorophenols

Accurate masses: ¹²C=12.000000, ¹³C=13.003355, ¹H=1.007825, ³⁵Cl= 34.968853, ³⁷Cl=36.965903, ¹⁶O=15.994915

Relative abundances of isotopes were determined using the method described in: Pretsch, Clerc, Seibl, Simon, Tables of Spectral Data for Structure Determination of Organic Compounds, Springer-Verlag, 1983.
 The following natural isotopic abundances were used in all calculations: ¹²C=98.89%, ¹³C=1.11%, ¹H=99.985%, ²H=0.015%, ³⁵Cl=75.53%, ³⁷Cl=24.47%, ¹⁶O=99.759%, ¹⁷O=0.037%, ¹⁸O=0.204%.



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