

Quality Control Certificate

Product: **Carbon Column**
Product No.: 20777
Lot No.: **721862**

Storage Recommendations: Store the column at room temperature below 25°C

Description: The Carbon Column is part of a 3-column setup used for the sample preparation of environmental-, food- / feed- and similar matrices with DEXTech systems from LCTech for the analysis of polychlorinated dibenzo-p-dioxins (PCDD), polychlorinated dibenzofurans (PCDF) and polychlorinated biphenyl (PCB) congeners.

Quality Control Release Inspection and Test Specification

Test Procedure: A solvent blank, spiked with quantification standard has been cleaned on a DEXTech Plus system, spiked with recovery standard, evaporated with the D-EVA and has been quantified with a HRGC/HRMS DFS from Thermo Fisher Scientific at a resolution of R > 10000.

Results Blank Value:

PCDD/F-TEQ:	0,07	pg/column
	(crit: <	0,70 pg/column)
dl-PCB-TEQ:	0,0048	pg/column
	(crit: <	0,05 pg/column)
Sum Total PCB:	4,5	pg/column
	(crit: <	300 pg/column)

Results Recoveries:

PCDD/F	81	to	103	%	(crit: 70	to	120	%)
PCB	76	to	109	%	(crit: 70	to	120	%)

This is to certify that the Carbon Column, Lot 721862, passed the required test specifications and is released for sale.

date: 13.05.2025

sign.: 

The company LCTech GmbH is certified according to ISO 9001



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Hazards: NOT FOR HUMAN OR DRUG USE!

The Carbon Column is designed and prepared for usage with the Alumina/Florisil Column and Universal/standard & Smart Column from LCTech and for laboratory use only. This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion, all procedures should be carried out with suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed according to national and regional regulations.

Quality Control: All ingredients are traceable to certified lots of our supplier. In addition, any ingredient with a new lot will be checked on contamination and efficiency before releasing for production. Monitoring the ongoing production, several columns are chosen at random day for analysis to check on contamination and efficiency.

Quality Management: This product was produced using a Quality Management System registered to the ISO 9001:2015 (DEKRA)

Documentation /
Data Attached: table 1 & 2: blankvalues of PCDD/F and PCB
table 3 & 4: 13C-Recoveries of PCDD/F and PCB

Analytics: This is to certify that the Carbon Column, Lot , passed the required test specifications and is released for sale.

Remarks: n/a

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Results:

Lockmass check: No significant disturbances, or indicators for contaminations are detected.

Blanks: n= 6

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	<dl
1,2,3,7,8-PeCDF	<0,045
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	<dl
1,2,3,6,7,8-HxCDF	<dl
2,3,4,6,7,8-HxCDF	<dl
1,2,3,7,8,9-HxCDF	<dl
1,2,3,4,6,7,8-HpCDF	<dl
1,2,3,4,7,8,9-HpCDF	<dl
1,2,3,4,6,7,8,9-OCDF	<0,054
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	<0,054
1,2,3,4,7,8-HxCDD	<0,027
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	<0,027
1,2,3,4,6,7,8-HpCDD	<0,09
1,2,3,4,6,7,8,9-OCDD	0,29

Table 2: PCB blank

	[pg/column]
PCB-#28	1,22
PCB-#52	1,69
PCB-#101	0,79
PCB-#153	0,39
PCB-#138	<0,261
PCB-#180	0,367
PCB-#81	<0,027
PCB-#77	0,052
PCB-#126	0,0405
PCB-#169	<0,027
PCB-#123	0,04
PCB-#118	0,23
PCB-#114	0,05
PCB-#105	<0,081
PCB-#167	0,314
PCB-#156	0,37
PCB-#157	0,63
PCB-#189	0,584

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,05
upper bound	0,07

PCB-TEQ	[pg/column]
lower bound	0,0048
upper bound	0,0048
Sum DIN	4,5

Table 3: PCDD/F recoveries

		[%]	RSD [%]
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	83	4
	1,2,3,7,8-PeCDF	88	4
	2,3,4,7,8-PeCDF	81	4
	1,2,3,4,7,8-HxCDF	96	4
	1,2,3,6,7,8-HxCDF	102	3
	2,3,4,6,7,8-HxCDF	99	3
	1,2,3,7,8,9-HxCDF	100	2
	1,2,3,4,6,7,8-HpCDF	103	2
	1,2,3,4,7,8,9-HpCDF	81	3
	1,2,3,4,6,7,8,9-OCDF	88	4
	2,3,7,8-TCDD	85	5
	1,2,3,7,8-PeCDD	86	5
	1,2,3,4,7,8-HxCDD	101	5
	1,2,3,6,7,8-HxCDD	89	3
	1,2,3,7,8,9-HxCDD	101	3
	1,2,3,4,6,7,8-HpCDD	94	2
	1,2,3,4,6,7,8,9-OCDD	82	3

Table 4: PCB recoveries

		[%]	RSD [%]
PCB 13C Recoveries [%]	PCB-#28	99	2
	PCB-#52	109	5
	PCB-#101	100	2
	PCB-#153	97	2
	PCB-#138	100	0
	PCB-#180	95	4
	PCB-#81	88	3
	PCB-#77	91	3
	PCB-#126	88	4
	PCB-#169	88	4
	PCB-#123	86	3
	PCB-#118	82	3
	PCB-#114	87	3
	PCB-#105	84	4
	PCB-#167	89	5
	PCB-#156	76	4
	PCB-#157	79	5
	PCB-#189	87	4