

Quality Control Certificate

Product: **Carbon Column**

Product No.: 20777

Lot No.: **724121**

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:	0,06	pg/column
		(crit: <	0,70 pg/column)
	dl-PCB-TEQ:	0,0012	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	47	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	79	to	102	%	(crit: 70	to	120	%)
	PCB	83	to	114	%	(crit: 70	to	120	%)

This is to certify that the Carbon Column, Lot 724121, passed the required test specifications and is released for sale.

date: 17.07.2026

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]
sample amount [pg/column]	
2,3,7,8-TCDF	<dl
1,2,3,7,8-PeCDF	<dl
2,3,4,7,8-PeCDF	<dl
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	<dl
2,3,7,8-TCDD	<0,036
1,2,3,7,8-PeCDD	<dl
1,2,3,4,7,8-HxCDD	<dl
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	<dl
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]
sample amount [pg/sample]	
PCB-#28	29,31
PCB-#52	14,78
PCB-#101	1,73
PCB-#153	0,58
PCB-#138	0,64
PCB-#180	<0,18
PCB-#81	<0,027
PCB-#77	0,22
PCB-#126	0,0118
PCB-#169	<dl
PCB-#123	0,03
PCB-#118	0,61
PCB-#114	0,008
PCB-#105	0,27
PCB-#167	<0,027
PCB-#156	<0,126
PCB-#157	<dl
PCB-#189	0,015

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,03
upper bound	0,06

PCB-TEQ	[pg/column]
lower bound	0,0012
upper bound	0,0015
Sum DIN	47



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Table 3: PCDD/F recoveries

		RSD [%]	
		[%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	92	2
	1,2,3,7,8-PeCDF	81	3
	2,3,4,7,8-PeCDF	86	4
	1,2,3,4,7,8-HxCDF	96	3
	1,2,3,6,7,8-HxCDF	99	1
	2,3,4,6,7,8-HxCDF	90	3
	1,2,3,7,8,9-HxCDF	98	3
	1,2,3,4,6,7,8-HpCDF	102	1
	1,2,3,4,7,8,9-HpCDF	86	2
	1,2,3,4,6,7,8,9-OCDF	97	2
	2,3,7,8-TCDD	87	2
	1,2,3,7,8-PeCDD	88	5
	1,2,3,4,7,8-HxCDD	87	5
	1,2,3,6,7,8-HxCDD	79	2
	1,2,3,7,8,9-HxCDD	98	3
	1,2,3,4,6,7,8-HpCDD	91	2
	1,2,3,4,6,7,8,9-OCDD	86	4

Table 4: PCB recoveries

		RSD [%]	
		[%]	
PCB 13C Recoveries [%]	PCB-#28	90	2
	PCB-#52	88	2
	PCB-#101	93	1
	PCB-#153	103	2
	PCB-#138	114	6
	PCB-#180	99	3
	PCB-#81	97	4
	PCB-#77	100	5
	PCB-#126	90	6
	PCB-#169	85	8
	PCB-#123	95	2
	PCB-#118	95	2
	PCB-#114	95	2
	PCB-#105	96	6
	PCB-#167	83	2
	PCB-#156	97	2
	PCB-#157	99	1
	PCB-#189	97	2