

Quality Control Certificate

Product: **Carbon Column**

Product No.: 20777

Lot No.: **723835**

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:	0,05	pg/column
		(crit: <	0,70 pg/column)
	dl-PCB-TEQ:	0,0012	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	46,4	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	86	to	104	%	(crit: 70	to	120	%)
	PCB	86	to	106	%	(crit: 70	to	120	%)

This is to certify that the Carbon Column, Lot 723835, passed the required test specifications and is released for sale.

date: 06.07.2026

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	<dl
1,2,3,7,8-PeCDD	<dl
1,2,3,4,7,8-HxCDD	<dl
1,2,3,6,7,8-HxCDD	<dl
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	0,25

Table 2: PCB blank

	[pg/column]
sample amount [pg/sample]	
PCB-#28	28,21
PCB-#52	15
PCB-#101	2
PCB-#153	0,56
PCB-#138	0,65
PCB-#180	<0,18
PCB-#81	0,03
PCB-#77	0,255
PCB-#126	0,0113
PCB-#169	<dl
PCB-#123	0,02
PCB-#118	0,69
PCB-#114	0,033
PCB-#105	0,16
PCB-#167	<0,027
PCB-#156	<0,126
PCB-#157	<0,018
PCB-#189	0,014

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

PCB-TEQ	[pg/column]
lower bound	0,0012
upper bound	0,0015
Sum DIN	46,4



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Table 3: PCDD/F recoveries

		RSD [%]	
		[%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	93	2
	1,2,3,7,8-PeCDF	93	2
	2,3,4,7,8-PeCDF	93	2
	1,2,3,4,7,8-HxCDF	94	8
	1,2,3,6,7,8-HxCDF	93	1
	2,3,4,6,7,8-HxCDF	99	3
	1,2,3,7,8,9-HxCDF	102	5
	1,2,3,4,6,7,8-HpCDF	104	1
	1,2,3,4,7,8,9-HpCDF	96	3
	1,2,3,4,6,7,8,9-OCDF	99	3
	2,3,7,8-TCDD	90	1
	1,2,3,7,8-PeCDD	94	3
	1,2,3,4,7,8-HxCDD	103	2
	1,2,3,6,7,8-HxCDD	87	3
	1,2,3,7,8,9-HxCDD	103	3
	1,2,3,4,6,7,8-HpCDD	96	1
	1,2,3,4,6,7,8,9-OCDD	86	3

Table 4: PCB recoveries

		RSD [%]	
		[%]	
PCB 13C Recoveries [%]	PCB-#28	95	5
	PCB-#52	86	5
	PCB-#101	89	4
	PCB-#153	102	14
	PCB-#138	88	9
	PCB-#180	102	6
	PCB-#81	97	5
	PCB-#77	102	7
	PCB-#126	100	3
	PCB-#169	99	4
	PCB-#123	98	2
	PCB-#118	98	1
	PCB-#114	100	2
	PCB-#105	93	7
	PCB-#167	92	3
	PCB-#156	104	5
	PCB-#157	106	9
	PCB-#189	103	7