

Quality Control Certificate

Product: **Carbon Column**
Product No.: 20777
Lot No.: **722556**

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:	0,11	pg/column						
		(crit: <	0,70	pg/column)					
	dl-PCB-TEQ:	0,0118	pg/column						
		(crit: <	0,05	pg/column)					
	Sum Total PCB:	0	pg/column						
		(crit: <	300	pg/column)					
Results Recoveries:	PCDD/F	77	to	116	%	(crit: 70	to	120	%)
	PCB	73	to	114	%	(crit: 70	to	120	%)

This is to certify that the Carbon Column, Lot 722556, passed the required test specifications and is released for sale.

date: 29.09.2025 sign.: T. Kehmair

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	<0,036
1,2,3,7,8-PeCDF	<0,045
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	<0,027
1,2,3,6,7,8-HxCDF	<0,018
2,3,4,6,7,8-HxCDF	<0,045
1,2,3,7,8,9-HxCDF	<0,045
1,2,3,4,6,7,8-HpCDF	<0,063
1,2,3,4,7,8,9-HpCDF	<0,018
1,2,3,4,6,7,8,9-OCDF	<0,054
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	0,07
1,2,3,4,7,8-HxCDD	0,028
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	<0,153
PCB-#52	<0,144
PCB-#101	<dl
PCB-#153	<dl
PCB-#138	<dl
PCB-#180	<dl
PCB-#81	0,08
PCB-#77	0,32
PCB-#126	0,1002
PCB-#169	0,057
PCB-#123	0,01
PCB-#118	<dl
PCB-#114	0,005
PCB-#105	<dl
PCB-#167	<dl
PCB-#156	<dl
PCB-#157	<dl
PCB-#189	<0,0072

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,1
upper bound	0,11

PCB-TEQ	[pg/column]
lower bound	0,0118
upper bound	0,0118
Sum DIN	0

Table 3: PCDD/F recoveries

		[%]	RSD [%]
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	90	3
	1,2,3,7,8-PeCDF	103	2
	2,3,4,7,8-PeCDF	113	2
	1,2,3,4,7,8-HxCDF	110	3
	1,2,3,6,7,8-HxCDF	116	3
	2,3,4,6,7,8-HxCDF	104	1
	1,2,3,7,8,9-HxCDF	104	3
	1,2,3,4,6,7,8-HpCDF	101	2
	1,2,3,4,7,8,9-HpCDF	90	2
	1,2,3,4,6,7,8,9-OCDF	85	1
	2,3,7,8-TCDD	87	3
	1,2,3,7,8-PeCDD	110	3
	1,2,3,4,7,8-HxCDD	110	4
	1,2,3,6,7,8-HxCDD	91	3
	1,2,3,7,8,9-HxCDD	102	3
	1,2,3,4,6,7,8-HpCDD	97	1
	1,2,3,4,6,7,8,9-OCDD	77	3

Table 4: PCB recoveries

		[%]	RSD [%]
PCB 13C Recoveries [%]	PCB-#28	91	7
	PCB-#52	73	17
	PCB-#101	96	7
	PCB-#153	88	8
	PCB-#138	103	3
	PCB-#180	99	5
	PCB-#81	82	2
	PCB-#77	92	2
	PCB-#126	77	2
	PCB-#169	84	7
	PCB-#123	102	5
	PCB-#118	95	7
	PCB-#114	102	6
	PCB-#105	114	14
	PCB-#167	95	3
	PCB-#156	94	6
	PCB-#157	98	6
	PCB-#189	98	10