

Quality Control Certificate

Product: **Carbon Column**

Product No.: 20777

Lot No.: **724554**

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:	0,1	pg/column						
		(crit: <	0,70	pg/column)					
	dl-PCB-TEQ:	0,0024	pg/column						
		(crit: <	0,05	pg/column)					
	Sum Total PCB:	19,4	pg/column						
		(crit: <	300	pg/column)					
Results Recoveries:	PCDD/F	78	to	103	%	(crit: 70	to	120	%)
	PCB	72	to	101	%	(crit: 70	to	120	%)

This is to certify that the Carbon Column, Lot 724554, passed the required test specifications and is released for sale.

date: 26.10.2026 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	<dl
1,2,3,4,7,8,9-HpCDF	0,021
1,2,3,4,6,7,8,9-OCDF	<0,054
2,3,7,8-TCDD	0,04
1,2,3,7,8-PeCDD	0,07
1,2,3,4,7,8-HxCDD	<0,027
1,2,3,6,7,8-HxCDD	<dl
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	0,22

Table 2: PCB blank

	[pg/column]
PCB-#28	10,57
PCB-#52	7,2
PCB-#101	0,87
PCB-#153	0,42
PCB-#138	0,37
PCB-#180	<0,18
PCB-#81	<0,027
PCB-#77	0,122
PCB-#126	0,0383
PCB-#169	<dl
PCB-#123	0,03
PCB-#118	0,27
PCB-#114	0,131
PCB-#105	0,21
PCB-#167	0,053
PCB-#156	<0,126
PCB-#157	0,06
PCB-#189	0,097

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,09
upper bound	0,1

PCB-TEQ	[pg/column]
lower bound	0,0024
upper bound	0,0024
Sum DIN	19,4

Table 3: PCDD/F recoveries

	[%]	RSD [%]
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	83
	1,2,3,7,8-PeCDF	78
	2,3,4,7,8-PeCDF	82
	1,2,3,4,7,8-HxCDF	81
	1,2,3,6,7,8-HxCDF	89
	2,3,4,6,7,8-HxCDF	87
	1,2,3,7,8,9-HxCDF	91
	1,2,3,4,6,7,8-HpCDF	103
	1,2,3,4,7,8,9-HpCDF	90
	1,2,3,4,6,7,8,9-OCDF	98
	2,3,7,8-TCDD	85
	1,2,3,7,8-PeCDD	83
	1,2,3,4,7,8-HxCDD	97
	1,2,3,6,7,8-HxCDD	84
	1,2,3,7,8,9-HxCDD	98
	1,2,3,4,6,7,8-HpCDD	97
	1,2,3,4,6,7,8,9-OCDD	92

Table 4: PCB recoveries

	[%]	RSD [%]
PCB 13C Recoveries [%]	PCB-#28	89
	PCB-#52	87
	PCB-#101	92
	PCB-#153	101
	PCB-#138	98
	PCB-#180	96
	PCB-#81	84
	PCB-#77	72
	PCB-#126	76
	PCB-#169	73
	PCB-#123	89
	PCB-#118	85
	PCB-#114	99
	PCB-#105	90
	PCB-#167	91
	PCB-#156	89
	PCB-#157	91
	PCB-#189	91