

## Quality Control Certificate

Product: **Carbon Column Pos.4**  
Product No.: 14090  
Lot No.: **718931**

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

Description: The Carbon Column is part of a 4-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: 0,33 pg/column  
(crit: < 0,7 pg/column)

Results Recoveries: PCDD/F 83 to 107 % (crit: 70 to 120 %)

This is to certify that the Carbon Column Pos.4, Lot 718931, passed the required test specifications and is released for sale.

date: 05.09.2023 sign.: 

The company LCTech GmbH is certified according to ISO 9001



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Hazards:	<p>NOT FOR HUMAN OR DRUG USE!</p> <p>The Carbon Column is designed and prepared for usage with the Alumina/Florisil Column and Universal/standard &amp; 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.</p>
Quality Control:	<p>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.</p>
Quality Management:	<p>This product was produced using a Quality Management System registered to the ISO 9001:2015 (DEKRA)</p>
Documentation / Data Attached:	<p>table 1 &amp; 2: blankvalues of PCDD/F and PCB table 3 &amp; 4: 13C-Recoveries of PCDD/F and PCB</p>
Analytics	<p>This is to certify that the Carbon Column pos. 4, Lot , passed the required test specifications and is released for sale.</p>
Remarks	<p>n/a</p>



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Results:

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

Blanks: n= 9

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	0,07
1,2,3,7,8-PeCDF	0,15
2,3,4,7,8-PeCDF	0,09
1,2,3,4,7,8-HxCDF	0,075
1,2,3,6,7,8-HxCDF	0,03
2,3,4,6,7,8-HxCDF	0,05
1,2,3,7,8,9-HxCDF	0,06
1,2,3,4,6,7,8-HpCDF	<dl
1,2,3,4,7,8,9-HpCDF	0,024
1,2,3,4,6,7,8,9-OCDF	0,08
2,3,7,8-TCDD	0,08
1,2,3,7,8-PeCDD	0,14
1,2,3,4,7,8-HxCDD	0,39
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	0,039
1,2,3,4,6,7,8-HpCDD	0,11
1,2,3,4,6,7,8,9-OCDD	0,42

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,33
upper bound	0,33

Table 3: PCDD/F recoveries

		[%]	RSD [%]
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	88	3
	1,2,3,7,8-PeCDF	83	6
	2,3,4,7,8-PeCDF	83	5
	1,2,3,4,7,8-HxCDF	87	4
	1,2,3,6,7,8-HxCDF	94	6
	2,3,4,6,7,8-HxCDF	92	6
	1,2,3,7,8,9-HxCDF	92	7
	1,2,3,4,6,7,8-HpCDF	107	5
	1,2,3,4,7,8,9-HpCDF	93	4
	1,2,3,4,6,7,8,9-OCDF	92	4
	2,3,7,8-TCDD	83	4
	1,2,3,7,8-PeCDD	86	8
	1,2,3,4,7,8-HxCDD	107	6
	1,2,3,6,7,8-HxCDD	88	6
	1,2,3,7,8,9-HxCDD	98	5
	1,2,3,4,6,7,8-HpCDD	103	5
	1,2,3,4,6,7,8,9-OCDD	95	4