

Quality Control Certificate

Product: Carbon Column

Product No.: 15242

Lot No.: 716996

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

Description: The Carbon Column is part of a 3-column setup for the sample cleanup of environmental-, food- / feed- and similar matrices. It is designed for the analysis of polychlorinated dibenzo-p-dioxins (PCDD), polychlorinated dibenzofurans (PCDF) and polychlorinated biphenyl (PCB) congeners with the DEXTech systems from LCTech GmbH

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 via 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:	0,6	pg/column
	(crit: <	0,7 pg/column)
dl-PCB-TEQ:	0,043	pg/column
	(crit: <	0,05 pg/column)
Sum Indikator PCB:	10,83	pg/column
	(crit: <	100 pg/column)

Results Recoveries:

PCDD/F	79	to	100	%	(crit: 70 to 120)
PCB	87	to	104	%	(crit: 70 to 120)

This is to certify that the 15242, Lot 716996, passed the required test specifications and is released for sale.

date: 30.08.2022 sign.: _____

T. Kehmeier

The company LCTech GmbH is certified according to ISO 9001:2015



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: Blank values of PCDD/F and PCB
Table 3 & 4: 13C-Recoveries of PCDD/F and PCB

Analytcs: All the columns (n>5) have to perform a clean-up of a solvent blank (10 mL n-hexane), spiked with a 13C - labelled quantifier-standard solution with a single column method onto a DEXTech Plus system. The fractions 1 (PCB) and 2 (PCDD/F) are spiked with 13C - labelled recovery- standard solutions and evaporated with the D-EVA vacuum centrifuge. The extracts are measured with a HRMS-DFS from Thermo Fisher Scientific with a resolution of R > 10000. The HRGCs are equipped with 60 m DB5 MS columns. For PCDD/F 5µL are injected via PTV, for PCB 2µL via SSL.

Remarks: n/a

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Results:

Lockmass check:

No significant disturbances, or indicators for contaminations are detected.

Blanks:

Table 1: PCDD/F blank (n=10)

Table 2: PCB blank (n=10)

Congeneres:	[pg/column]:
2,3,7,8-TCDF	0,23
1,2,3,7,8-PeCDF	0,21
2,3,4,7,8-PeCDF	0,21
1,2,3,4,7,8-HxCDF	0,108
1,2,3,6,7,8-HxCDF	0,083
2,3,4,6,7,8-HxCDF	0,11
1,2,3,7,8,9-HxCDF	0,14
1,2,3,4,6,7,8-HpCDF	0,3
1,2,3,4,7,8,9-HpCDF	0,431
OCDF	0,12
2,3,7,8-TCDD	0,16
1,2,3,7,8-PeCDD	0,18
1,2,3,4,7,8-HxCDD	0,42
1,2,3,6,7,8-HxCDD	0,41
1,2,3,7,8,9-HxCDD	0,239
1,2,3,4,6,7,8-HpCDD	0,45
OCDD	0,57

Congeneres:	[pg/column]:
PCB 28	1,47
PCB 52	2,26
PCB 77	0,21
PCB 81	0,058
PCB 101	1,73
PCB 123	0,3202
PCB 118	1,17
PCB 114	0,3158
PCB 105	0,55
PCB 126	0,2709
PCB 153	2,09
PCB 138	1,49
PCB 167	0,461
PCB 156	0,38
PCB 157	0,303
PCB 169	0,529
PCB 180	1,33
PCB 189	1,312

TEQ (WHO 2005)	
lower bound	0,6
upper bound	0,6

TEQ (WHO 2005)	
lower bound	0,0432
upper bound	0,0432

Sum DIN PCB	10,83
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Results:

13C-Recoveries

Table 3: PCDD/F 13C-recoveries (n=10)

Congeneres:	13C rec [%]
2,3,7,8-TCDF	93
1,2,3,7,8-PeCDF	89
2,3,4,7,8-PeCDF	96
1,2,3,4,7,8-HxCDF	88
1,2,3,6,7,8-HxCDF	94
2,3,4,6,7,8-HxCDF	90
1,2,3,7,8,9-HxCDF	88
1,2,3,4,6,7,8-HpCDF	98
1,2,3,4,7,8,9-HpCDF	100
OCDF	99
2,3,7,8-TCDD	89
1,2,3,7,8-PeCDD	96
1,2,3,4,7,8-HxCDD	97
1,2,3,6,7,8-HxCDD	79
1,2,3,7,8,9-HxCDD	93
1,2,3,4,6,7,8-HpCDD	95
OCDD	91

Table 4: PCB 13C-recoveries (n=10)

Congeneres:	13C rec [%]
PCB 28	89
PCB 52	96
PCB 77	95
PCB 81	87
PCB 101	96
PCB 123	88
PCB 118	87
PCB 114	91
PCB 105	90
PCB 126	104
PCB 153	95
PCB 138	95
PCB 167	88
PCB 156	88
PCB 157	87
PCB 169	103
PCB 180	96
PCB 189	92

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