

Quality Control Certificate

Product: Alumina Column

Product No.: 15433

Lot No.: 713814

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

Description: The alumina 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-up on a DEXTech Plus system, spiked with recovery standard, evaporated via DEva and has been quantified with a HRGC/HRMS with a resolution of R > 10000.

Results Blank Value:

PCDD/F-TEQ:	0,17	pg/column
	(crit: <	0,7 pg/column
dl-PCB-TEQ:	0,034	pg/column
	(crit: <	0,05 pg/column
Sum Indikator PCB:	19,39	pg/column
	(crit: <	100 pg/column

Results Recoveries:

PCDD/F	89	to	118	%	(crit: 70 to 120)
PCB	73	to	100	%	(crit: 70 to 120)

This is to certify that alumina column, Lot 713814, passed the required test specifications and is released for sale.

date: 17.07.2020 sign.: _____

T. Kehmeier

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



Hazards: NOT FOR HUMAN OR DRUG USE!

The alumina column is designed and prepared for usage with the universal/standard & smart column and carbon 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=8)

Congeneres:	[pg/column]:
2,3,7,8-TCDF	<0,036
1,2,3,7,8-PeCDF	0,18
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	0,049
1,2,3,6,7,8-HxCDF	0,079
2,3,4,6,7,8-HxCDF	0,07
1,2,3,7,8,9-HxCDF	0,05
1,2,3,4,6,7,8-HpCDF	<0,063
1,2,3,4,7,8,9-HpCDF	<0,018
OCDF	0,09
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	0,08
1,2,3,4,7,8-HxCDD	0,089
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	0,103
1,2,3,4,6,7,8-HpCDD	<dl
OCDD	0,8

TEQ (WHO 2005)	
lower bound	0,17
upper bound	0,18

Table 2: PCB blank (n=8)

Congeneres:	[pg/column]:
PCB 28	2,29
PCB 52	2,79
PCB 77	0,8
PCB 81	0,179
PCB 101	4
PCB 123	0,1628
PCB 118	0,93
PCB 114	0,2341
PCB 105	0,31
PCB 126	0,2426
PCB 153	5,08
PCB 138	3,64
PCB 167	0,428
PCB 156	0,35
PCB 157	0,207
PCB 169	0,314
PCB 180	1,16
PCB 189	0,16

TEQ (WHO 2005)	
lower bound	0,0339
upper bound	0,0339

Sum DIN PCB	19,39
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Results:

13C-Recoveries

Table 3: PCDD/F 13C-recoveries (n=8)

Congeneres:	13C rec [%]
2,3,7,8-TCDF	89
1,2,3,7,8-PeCDF	90
2,3,4,7,8-PeCDF	95
1,2,3,4,7,8-HxCDF	103
1,2,3,6,7,8-HxCDF	101
2,3,4,6,7,8-HxCDF	101
1,2,3,7,8,9-HxCDF	93
1,2,3,4,6,7,8-HpCDF	106
1,2,3,4,7,8,9-HpCDF	101
OCDF	118
2,3,7,8-TCDD	100
1,2,3,7,8-PeCDD	104
1,2,3,4,7,8-HxCDD	95
1,2,3,6,7,8-HxCDD	94
1,2,3,7,8,9-HxCDD	94
1,2,3,4,6,7,8-HpCDD	105
OCDD	100

Table 4: PCB 13C-recoveries (n=8)

Congeneres:	13C rec [%]
PCB 28	93
PCB 52	73
PCB 77	100
PCB 81	89
PCB 101	88
PCB 123	88
PCB 118	90
PCB 114	84
PCB 105	90
PCB 126	92
PCB 153	89
PCB 138	91
PCB 167	90
PCB 156	93
PCB 157	96
PCB 169	96
PCB 180	83
PCB 189	87

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