

Quality Control Certificate

Product: Alumina Column

Product No.: 15433

Lot No.: 714591

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 on a DEXTech Plus system, spiked with recovery standard, evaporated via DEva 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:	0,4	pg/column
	(crit: <	0,7 pg/column)
dl-PCB-TEQ:	0,003	pg/column
	(crit: <	0,05 pg/column)
Sum Indikator PCB:	1,8	pg/column
	(crit: <	100 pg/column)

Results Recoveries:

PCDD/F	86	to	111	%	(crit: 70 to 120)
PCB	83	to	106	%	(crit: 70 to 120)

This is to certify that alumina column, Lot 714591, passed the required test specifications and is released for sale.

date: 06.04.2021

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

Analytics: 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=9)

Table 2: PCB blank (n=9)

Congeneres:	[pg/column]:
2,3,7,8-TCDF	0,12
1,2,3,7,8-PeCDF	0,15
2,3,4,7,8-PeCDF	0,16
1,2,3,4,7,8-HxCDF	0,084
1,2,3,6,7,8-HxCDF	0,045
2,3,4,6,7,8-HxCDF	0,06
1,2,3,7,8,9-HxCDF	0,15
1,2,3,4,6,7,8-HpCDF	<0,063
1,2,3,4,7,8,9-HpCDF	0,102
OCDF	<0,054
2,3,7,8-TCDD	<0,036
1,2,3,7,8-PeCDD	0,25
1,2,3,4,7,8-HxCDD	0,057
1,2,3,6,7,8-HxCDD	0,14
1,2,3,7,8,9-HxCDD	<0,027
1,2,3,4,6,7,8-HpCDD	0,13
OCDD	1,51

Congeneres:	[pg/column]:
PCB 28	0,39
PCB 52	0,6
PCB 77	<0,045
PCB 81	0,027
PCB 101	0,3
PCB 123	0,0454
PCB 118	0,15
PCB 114	0,041
PCB 105	<0,081
PCB 126	0,0264
PCB 153	0,28
PCB 138	<0,261
PCB 167	<0,027
PCB 156	<0,126
PCB 157	0,018
PCB 169	<0,027
PCB 180	<0,18
PCB 189	0,055

TEQ (WHO 2005)	
lower bound	0,4
upper bound	0,4

TEQ (WHO 2005)	
lower bound	0,0034
upper bound	0,0034

Sum DIN PCB	1,8
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Results:

13C-Recoveries

Table 3: PCDD/F 13C-recoveries (n=9)

Congeneres:	13C rec [%]
2,3,7,8-TCDF	99
1,2,3,7,8-PeCDF	103
2,3,4,7,8-PeCDF	106
1,2,3,4,7,8-HxCDF	106
1,2,3,6,7,8-HxCDF	109
2,3,4,6,7,8-HxCDF	97
1,2,3,7,8,9-HxCDF	86
1,2,3,4,6,7,8-HpCDF	111
1,2,3,4,7,8,9-HpCDF	96
OCDF	91
2,3,7,8-TCDD	95
1,2,3,7,8-PeCDD	108
1,2,3,4,7,8-HxCDD	98
1,2,3,6,7,8-HxCDD	100
1,2,3,7,8,9-HxCDD	90
1,2,3,4,6,7,8-HpCDD	111
OCDD	89

Table 4: PCB 13C-recoveries (n=9)

Congeneres:	13C rec [%]
PCB 28	106
PCB 52	95
PCB 77	103
PCB 81	94
PCB 101	91
PCB 123	103
PCB 118	100
PCB 114	99
PCB 105	98
PCB 126	91
PCB 153	93
PCB 138	92
PCB 167	95
PCB 156	92
PCB 157	95
PCB 169	83
PCB 180	91
PCB 189	85

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