

Quality Control Certificate

Product: Alumina Column

Product No.: 15433

Lot No.: 714651

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:	0,15	pg/column
	(crit: <	0,7 pg/column)
dl-PCB-TEQ:	0,005	pg/column
	(crit: <	0,05 pg/column)
Sum Indikator PCB:	2,9	pg/column
	(crit: <	100 pg/column)

Results Recoveries:

PCDD/F	73	to	111	%	(crit: 70	to	120)
PCB	82	to	109	%	(crit: 70	to	120)

This is to certify that alumina column, Lot 714651, passed the required test specifications and is released for sale.

date: 11.05.2021 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

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=9)

Table 2: PCB blank (n=9)

Congeneres: [pg/column]:

2,3,7,8-TCDF	0,05
1,2,3,7,8-PeCDF	0,2
2,3,4,7,8-PeCDF	0,11
1,2,3,4,7,8-HxCDF	0,086
1,2,3,6,7,8-HxCDF	0,091
2,3,4,6,7,8-HxCDF	<dl
1,2,3,7,8,9-HxCDF	<dl
1,2,3,4,6,7,8-HpCDF	<dl
1,2,3,4,7,8,9-HpCDF	0,035
OCDF	0,25
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	0,08
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
OCDD	0,38

TEQ (WHO 2005)	
lower bound	0,15
upper bound	0,16

Congeneres: [pg/column]:

PCB 28	0,64
PCB 52	1,01
PCB 77	0,12
PCB 81	0,067
PCB 101	0,24
PCB 123	0,1232
PCB 118	0,22
PCB 114	0,0619
PCB 105	<0,081
PCB 126	0,0202
PCB 153	0,53
PCB 138	0,3
PCB 167	<0,027
PCB 156	0,22
PCB 157	0,025
PCB 169	0,101
PCB 180	0,2
PCB 189	0,112

TEQ (WHO 2005)	
lower bound	0,0051
upper bound	0,0051

Sum DIN PCB	2,9
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Results:

13C-Recoveries

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

Congeneres:	13C rec [%]
2,3,7,8-TCDF	90
1,2,3,7,8-PeCDF	84
2,3,4,7,8-PeCDF	87
1,2,3,4,7,8-HxCDF	99
1,2,3,6,7,8-HxCDF	111
2,3,4,6,7,8-HxCDF	104
1,2,3,7,8,9-HxCDF	105
1,2,3,4,6,7,8-HpCDF	101
1,2,3,4,7,8,9-HpCDF	92
OCDF	86
2,3,7,8-TCDD	73
1,2,3,7,8-PeCDD	84
1,2,3,4,7,8-HxCDD	96
1,2,3,6,7,8-HxCDD	83
1,2,3,7,8,9-HxCDD	85
1,2,3,4,6,7,8-HpCDD	94
OCDD	83

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

Congeneres:	13C rec [%]
PCB 28	101
PCB 52	89
PCB 77	93
PCB 81	91
PCB 101	94
PCB 123	105
PCB 118	106
PCB 114	99
PCB 105	109
PCB 126	100
PCB 153	95
PCB 138	96
PCB 167	100
PCB 156	99
PCB 157	102
PCB 169	82
PCB 180	101
PCB 189	92

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