

Quality Control Certificate

Product: Alumina Column

Product No.: 15433

Lot No.: 714078

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:	0,24	pg/column
	(crit: <	0,7 pg/column
dl-PCB-TEQ:	0,009	pg/column
	(crit: <	0,05 pg/column
Sum Indikator PCB:	9,4	pg/column
	(crit: <	100 pg/column

Results Recoveries:

PCDD/F	75	to	102	%	(crit: 70 to 120)
PCB	77	to	98	%	(crit: 70 to 120)

This is to certify that alumina column, Lot 714078, passed the required test specifications and is released for sale.

date: 05.11.2020 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=9)

Table 2: PCB blank (n=9)

Congeneres:	[pg/column]:
2,3,7,8-TCDF	0,08
1,2,3,7,8-PeCDF	0,05
2,3,4,7,8-PeCDF	0,14
1,2,3,4,7,8-HxCDF	0,045
1,2,3,6,7,8-HxCDF	0,027
2,3,4,6,7,8-HxCDF	<0,045
1,2,3,7,8,9-HxCDF	0,11
1,2,3,4,6,7,8-HpCDF	<0,063
1,2,3,4,7,8,9-HpCDF	0,061
OCDF	1,11
2,3,7,8-TCDD	0,05
1,2,3,7,8-PeCDD	0,11
1,2,3,4,7,8-HxCDD	0,051
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	0,25

Congeneres:	[pg/column]:
PCB 28	1,22
PCB 52	1,5
PCB 77	0,21
PCB 81	0,072
PCB 101	2,92
PCB 123	0,0284
PCB 118	0,54
PCB 114	0,013
PCB 105	0,17
PCB 126	0,0737
PCB 153	1,32
PCB 138	1,76
PCB 167	0,314
PCB 156	<0,126
PCB 157	0,082
PCB 169	0,047
PCB 180	0,33
PCB 189	0,038

TEQ (WHO 2005)	
lower bound	0,24
upper bound	0,25

TEQ (WHO 2005)	
lower bound	0,0088
upper bound	0,0088

Sum DIN PCB	9,4
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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	89
2,3,4,7,8-PeCDF	91
1,2,3,4,7,8-HxCDF	96
1,2,3,6,7,8-HxCDF	102
2,3,4,6,7,8-HxCDF	88
1,2,3,7,8,9-HxCDF	86
1,2,3,4,6,7,8-HpCDF	93
1,2,3,4,7,8,9-HpCDF	79
OCDF	84
2,3,7,8-TCDD	84
1,2,3,7,8-PeCDD	92
1,2,3,4,7,8-HxCDD	90
1,2,3,6,7,8-HxCDD	90
1,2,3,7,8,9-HxCDD	92
1,2,3,4,6,7,8-HpCDD	94
OCDD	75

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

Congeneres:	13C rec [%]
PCB 28	96
PCB 52	77
PCB 77	91
PCB 81	87
PCB 101	93
PCB 123	91
PCB 118	90
PCB 114	86
PCB 105	88
PCB 126	81
PCB 153	91
PCB 138	92
PCB 167	94
PCB 156	97
PCB 157	98
PCB 169	82
PCB 180	90
PCB 189	85

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