

Quality Control Certificate

Product: **Alumina Column**
 Product No.: 15433
 Lot No.: **718516**

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 with the 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:	0,09	pg/column
		(crit: <	0,7 pg/column)
	dl-PCB-TEQ:	0,0432	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	9,6	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	90	to	118	%	(crit: 70	to	120	%)
	PCB	85	to	104	%	(crit: 70	to	120	%)

This is to certify that the Alumina Column, Lot 718516, passed the required test specifications and is released for sale.

date: 28.07.2023 sign.: T. Kehmeier

The company LCTech GmbH is certified according to ISO 9001



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Hazards:	<p>NOT FOR HUMAN OR DRUG USE!</p> <p>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.</p>
Quality Control:	<p>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.</p>
Quality Management:	<p>This product was produced using a Quality Management System registered to the ISO 9001:2015 (DEKRA)</p>
Documentation / Data Attached:	<p>table 1 & 2: blankvalues of PCDD/F and PCB table 3 & 4: 13C-Recoveries of PCDD/F and PCB</p>
Analytics	<p>This is to certify that the Alumina Column, Lot , passed the required test specifications and is released for sale.</p>
Remarks	<p>n/a</p>



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Results:

Lockmass check: No significant disturbances, or indicators for contaminations are detected.

Blanks: n= 7

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	<dl
1,2,3,7,8-PeCDF	<0,045
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	<0,027
1,2,3,6,7,8-HxCDF	<0,018
2,3,4,6,7,8-HxCDF	<0,045
1,2,3,7,8,9-HxCDF	<dl
1,2,3,4,6,7,8-HpCDF	<0,063
1,2,3,4,7,8,9-HpCDF	0,019
1,2,3,4,6,7,8,9-OCDF	0,06
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	<dl
1,2,3,4,7,8-HxCDD	0,158
1,2,3,6,7,8-HxCDD	0,11
1,2,3,7,8,9-HxCDD	0,037
1,2,3,4,6,7,8-HpCDD	0,1
1,2,3,4,6,7,8,9-OCDD	0,96

Table 2: PCB blank

	[pg/column]
PCB-#28	1,96
PCB-#52	1,78
PCB-#101	1,03
PCB-#153	1,9
PCB-#138	1,65
PCB-#180	1,29
PCB-#81	0,54
PCB-#77	0,43
PCB-#126	0,32
PCB-#169	0,361
PCB-#123	0,31
PCB-#118	1,04
PCB-#114	0,312
PCB-#105	0,75
PCB-#167	0,446
PCB-#156	0,8
PCB-#157	0,49
PCB-#189	0,719

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,06
upper bound	0,09

PCB-TEQ	[pg/column]
lower bound	0,0432
upper bound	0,0432
Sum DIN	9,6

Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	98	8
	1,2,3,7,8-PeCDF	99	7
	2,3,4,7,8-PeCDF	101	13
	1,2,3,4,7,8-HxCDF	90	9
	1,2,3,6,7,8-HxCDF	107	9
	2,3,4,6,7,8-HxCDF	114	9
	1,2,3,7,8,9-HxCDF	112	9
	1,2,3,4,6,7,8-HpCDF	112	6
	1,2,3,4,7,8,9-HpCDF	102	7
	1,2,3,4,6,7,8,9-OCDF	105	6
	2,3,7,8-TCDD	92	5
	1,2,3,7,8-PeCDD	103	7
	1,2,3,4,7,8-HxCDD	115	4
	1,2,3,6,7,8-HxCDD	99	7
	1,2,3,7,8,9-HxCDD	118	6
	1,2,3,4,6,7,8-HpCDD	113	7
	1,2,3,4,6,7,8,9-OCDD	101	6

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	96	13
	PCB-#52	85	17
	PCB-#101	102	8
	PCB-#153	103	9
	PCB-#138	96	7
	PCB-#180	93	4
	PCB-#81	98	0
	PCB-#77	104	0
	PCB-#126	103	0
	PCB-#169	98	0
	PCB-#123	102	3
	PCB-#118	100	4
	PCB-#114	98	4
	PCB-#105	91	8
	PCB-#167	99	3
	PCB-#156	95	5
	PCB-#157	96	6
	PCB-#189	87	3