

Quality Control Certificate

Product: **Alumina Column**
 Product No.: 15433
 Lot No.: **719597**

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:	0,13	pg/column
		(crit: <	0,7 pg/column)
	dl-PCB-TEQ:	0,0372	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	16,9	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	74	to	100	%	(crit: 70	to	120	%)
	PCB	73	to	101	%	(crit: 70	to	120	%)

This is to certify that the Alumina Column, Lot 719597, passed the required test specifications and is released for sale.

date: 18.12.2023 sign.: 

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= 6

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	<dl
1,2,3,7,8-PeCDF	<dl
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	0,059
1,2,3,6,7,8-HxCDF	<dl
2,3,4,6,7,8-HxCDF	0,08
1,2,3,7,8,9-HxCDF	0,13
1,2,3,4,6,7,8-HpCDF	0,11
1,2,3,4,7,8,9-HpCDF	0,12
1,2,3,4,6,7,8,9-OCDF	0,18
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	<dl
1,2,3,4,7,8-HxCDD	0,185
1,2,3,6,7,8-HxCDD	0,21
1,2,3,7,8,9-HxCDD	0,088
1,2,3,4,6,7,8-HpCDD	0,15
1,2,3,4,6,7,8,9-OCDD	1,01

Table 2: PCB blank

	[pg/column]
PCB-#28	3,46
PCB-#52	5,14
PCB-#101	3,97
PCB-#153	2,21
PCB-#138	1,52
PCB-#180	0,558
PCB-#81	0,18
PCB-#77	0,465
PCB-#126	0,3351
PCB-#169	0,117
PCB-#123	0,26
PCB-#118	1,38
PCB-#114	0,299
PCB-#105	0,56
PCB-#167	0,202
PCB-#156	0,468
PCB-#157	0,27
PCB-#189	0,333

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,1
upper bound	0,13

PCB-TEQ	[pg/column]
lower bound	0,0372
upper bound	0,0372
Sum DIN	16,9

Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	86	6
	1,2,3,7,8-PeCDF	79	13
	2,3,4,7,8-PeCDF	75	15
	1,2,3,4,7,8-HxCDF	90	13
	1,2,3,6,7,8-HxCDF	97	14
	2,3,4,6,7,8-HxCDF	100	13
	1,2,3,7,8,9-HxCDF	87	10
	1,2,3,4,6,7,8-HpCDF	90	7
	1,2,3,4,7,8,9-HpCDF	83	4
	1,2,3,4,6,7,8,9-OCDF	89	14
	2,3,7,8-TCDD	78	8
	1,2,3,7,8-PeCDD	74	14
	1,2,3,4,7,8-HxCDD	98	15
	1,2,3,6,7,8-HxCDD	81	13
	1,2,3,7,8,9-HxCDD	98	13
	1,2,3,4,6,7,8-HpCDD	86	5
	1,2,3,4,6,7,8,9-OCDD	88	10

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	82	12
	PCB-#52	73	5
	PCB-#101	91	5
	PCB-#153	86	6
	PCB-#138	86	7
	PCB-#180	90	9
	PCB-#81	84	12
	PCB-#77	83	12
	PCB-#126	75	11
	PCB-#169	79	21
	PCB-#123	91	5
	PCB-#118	89	6
	PCB-#114	94	4
	PCB-#105	88	5
	PCB-#167	79	8
	PCB-#156	101	10
	PCB-#157	99	9
	PCB-#189	86	7