

Quality Control Certificate

Product: **Alumina Column**
 Product No.: 15433
 Lot No.: **721303**

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:	0,07	pg/column
		(crit: <	0,70 pg/column)
	dl-PCB-TEQ:	0,038	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	2,3	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	94	to	114	%	(crit: 70	to	120	%)
	PCB	92	to	107	%	(crit: 70	to	120	%)

This is to certify that the Alumina Column, Lot 721303, passed the required test specifications and is released for sale.

date: 29.01.2025 sign.: *M. Brackis*

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= 8

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	<0,036
1,2,3,7,8-PeCDF	<dI
2,3,4,7,8-PeCDF	<dI
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	<0,045
1,2,3,4,6,7,8-HpCDF	<dI
1,2,3,4,7,8,9-HpCDF	0,036
1,2,3,4,6,7,8,9-OCDF	<0,054
2,3,7,8-TCDD	<dI
1,2,3,7,8-PeCDD	<dI
1,2,3,4,7,8-HxCDD	0,053
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	0,067
1,2,3,4,6,7,8-HpCDD	<0,09
1,2,3,4,6,7,8,9-OCDD	0,53

Table 2: PCB blank

	[pg/column]
PCB-#28	0,69
PCB-#52	1,05
PCB-#101	0,19
PCB-#153	0,35
PCB-#138	<dI
PCB-#180	<0,18
PCB-#81	0,6
PCB-#77	0,4543
PCB-#126	0,3009
PCB-#169	0,255
PCB-#123	0,01
PCB-#118	0,4
PCB-#114	<0,0018
PCB-#105	0,23
PCB-#167	<dI
PCB-#156	0,175
PCB-#157	0,08
PCB-#189	0,199

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,03
upper bound	0,07

PCB-TEQ	[pg/column]
lower bound	0,038
upper bound	0,038
Sum DIN	2,3

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Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	102	8
	1,2,3,7,8-PeCDF	109	7
	2,3,4,7,8-PeCDF	107	7
	1,2,3,4,7,8-HxCDF	98	7
	1,2,3,6,7,8-HxCDF	107	8
	2,3,4,6,7,8-HxCDF	110	6
	1,2,3,7,8,9-HxCDF	114	5
	1,2,3,4,6,7,8-HpCDF	105	4
	1,2,3,4,7,8,9-HpCDF	108	3
	1,2,3,4,6,7,8,9-OCDF	110	3
	2,3,7,8-TCDD	101	7
	1,2,3,7,8-PeCDD	112	3
	1,2,3,4,7,8-HxCDD	105	4
	1,2,3,6,7,8-HxCDD	94	5
	1,2,3,7,8,9-HxCDD	114	3
	1,2,3,4,6,7,8-HpCDD	102	5
	1,2,3,4,6,7,8,9-OCDD	107	8

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	94	5
	PCB-#52	94	7
	PCB-#101	98	4
	PCB-#153	94	4
	PCB-#138	100	4
	PCB-#180	94	5
	PCB-#81	96	1
	PCB-#77	100	1
	PCB-#126	107	1
	PCB-#169	106	2
	PCB-#123	100	9
	PCB-#118	103	11
	PCB-#114	97	8
	PCB-#105	101	6
	PCB-#167	92	9
	PCB-#156	99	5
	PCB-#157	98	6
	PCB-#189	104	6