

Quality Control Certificate

Product: **Alumina Column**
Product No.: 15433
Lot No.: **721631**

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:	0,15	pg/column						
		(crit: <	0,70	pg/column)					
	dl-PCB-TEQ:	0,0045	pg/column						
		(crit: <	0,05	pg/column)					
	Sum Total PCB:	3,1	pg/column						
		(crit: <	300	pg/column)					
Results Recoveries:	PCDD/F	87	to	109	%	(crit: 70	to	120	%)
	PCB	88	to	117	%	(crit: 70	to	120	%)

This is to certify that the Alumina Column, Lot 721631, passed the required test specifications and is released for sale.

date: 08.04.2025 sign.: 

The company LCTech GmbH is certified according to ISO 9001



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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: blankvalues of PCDD/F and PCB table 3 & 4: 13C-Recoveries of PCDD/F and PCB
Analytics	This is to certify that the Alumina Column, Lot , passed the required test specifications and is released for sale.
Remarks	n/a

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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	<0,045
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	0,033
1,2,3,6,7,8-HxCDF	0,022
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	<0,063
1,2,3,4,7,8,9-HpCDF	0,029
1,2,3,4,6,7,8,9-OCDF	0,06
2,3,7,8-TCDD	<0,036
1,2,3,7,8-PeCDD	0,06
1,2,3,4,7,8-HxCDD	0,064
1,2,3,6,7,8-HxCDD	0,11
1,2,3,7,8,9-HxCDD	0,057
1,2,3,4,6,7,8-HpCDD	0,16
1,2,3,4,6,7,8,9-OCDD	0,56

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,15
upper bound	0,15

Table 2: PCB blank

	[pg/column]
PCB-#28	0,59
PCB-#52	0,79
PCB-#101	0,22
PCB-#153	0,58
PCB-#138	0,71
PCB-#180	0,183
PCB-#81	0,14
PCB-#77	0,2483
PCB-#126	0,01
PCB-#169	0,113
PCB-#123	0,03
PCB-#118	0,18
PCB-#114	0,06
PCB-#105	0,11
PCB-#167	0,187
PCB-#156	0,377
PCB-#157	0,24
PCB-#189	0,106

PCB-TEQ	[pg/column]
lower bound	0,0045
upper bound	0,0045
Sum DIN	3,1

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Table 3: PCDD/F recoveries

		[%]	RSD [%]
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	99	2
	1,2,3,7,8-PeCDF	100	3
	2,3,4,7,8-PeCDF	92	3
	1,2,3,4,7,8-HxCDF	96	6
	1,2,3,6,7,8-HxCDF	103	5
	2,3,4,6,7,8-HxCDF	104	5
	1,2,3,7,8,9-HxCDF	103	4
	1,2,3,4,6,7,8-HpCDF	103	1
	1,2,3,4,7,8,9-HpCDF	95	3
	1,2,3,4,6,7,8,9-OCDF	101	4
	2,3,7,8-TCDD	91	2
	1,2,3,7,8-PeCDD	102	4
	1,2,3,4,7,8-HxCDD	105	5
	1,2,3,6,7,8-HxCDD	87	4
	1,2,3,7,8,9-HxCDD	109	5
	1,2,3,4,6,7,8-HpCDD	102	3
	1,2,3,4,6,7,8,9-OCDD	99	1

Table 4: PCB recoveries

		[%]	RSD [%]
PCB 13C Recoveries [%]	PCB-#28	105	2
	PCB-#52	99	2
	PCB-#101	99	2
	PCB-#153	100	4
	PCB-#138	102	2
	PCB-#180	105	1
	PCB-#81	88	1
	PCB-#77	91	2
	PCB-#126	100	3
	PCB-#169	102	3
	PCB-#123	101	2
	PCB-#118	101	3
	PCB-#114	96	1
	PCB-#105	103	2
	PCB-#167	100	1
	PCB-#156	100	1
	PCB-#157	101	1
	PCB-#189	117	2