

Quality Control Certificate

Product: **Alumina Column**
Product No.: 15433
Lot No.: **721983**

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:	0,67	pg/column						
		(crit: <	0,70	pg/column)					
	dl-PCB-TEQ:	0,0455	pg/column						
		(crit: <	0,05	pg/column)					
	Sum Total PCB:	5	pg/column						
		(crit: <	300	pg/column)					
Results Recoveries:	PCDD/F	86	to	119	%	(crit: 70	to	120	%)
	PCB	95	to	120	%	(crit: 70	to	120	%)

This is to certify that the Alumina Column, Lot 721983, passed the required test specifications and is released for sale.

date: 28.05.2025 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= 12

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	0,14
1,2,3,7,8-PeCDF	0,25
2,3,4,7,8-PeCDF	0,35
1,2,3,4,7,8-HxCDF	0,154
1,2,3,6,7,8-HxCDF	0,129
2,3,4,6,7,8-HxCDF	0,13
1,2,3,7,8,9-HxCDF	0,19
1,2,3,4,6,7,8-HpCDF	0,29
1,2,3,4,7,8,9-HpCDF	0,176
1,2,3,4,6,7,8,9-OCDF	0,19
2,3,7,8-TCDD	0,11
1,2,3,7,8-PeCDD	0,29
1,2,3,4,7,8-HxCDD	0,196
1,2,3,6,7,8-HxCDD	0,32
1,2,3,7,8,9-HxCDD	0,238
1,2,3,4,6,7,8-HpCDD	0,44
1,2,3,4,6,7,8,9-OCDD	2,16

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,67
upper bound	0,67

Table 2: PCB blank

	[pg/column]
PCB-#28	1,86
PCB-#52	0,9
PCB-#101	0,79
PCB-#153	0,93
PCB-#138	<0,261
PCB-#180	0,537
PCB-#81	0,37
PCB-#77	0,1983
PCB-#126	0,31
PCB-#169	0,475
PCB-#123	0,25
PCB-#118	<0,108
PCB-#114	0,034
PCB-#105	<0,081
PCB-#167	0,283
PCB-#156	0,487
PCB-#157	0,2
PCB-#189	0,025

PCB-TEQ	[pg/column]
lower bound	0,0455
upper bound	0,0455
Sum DIN	5

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Table 3: PCDD/F recoveries

		[%]	RSD [%]
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	95	5
	1,2,3,7,8-PeCDF	104	5
	2,3,4,7,8-PeCDF	101	5
	1,2,3,4,7,8-HxCDF	116	7
	1,2,3,6,7,8-HxCDF	113	4
	2,3,4,6,7,8-HxCDF	112	5
	1,2,3,7,8,9-HxCDF	114	4
	1,2,3,4,6,7,8-HpCDF	114	7
	1,2,3,4,7,8,9-HpCDF	99	6
	1,2,3,4,6,7,8,9-OCDF	96	7
	2,3,7,8-TCDD	86	6
	1,2,3,7,8-PeCDD	108	6
	1,2,3,4,7,8-HxCDD	117	8
	1,2,3,6,7,8-HxCDD	104	9
	1,2,3,7,8,9-HxCDD	119	8
	1,2,3,4,6,7,8-HpCDD	107	7
	1,2,3,4,6,7,8,9-OCDD	103	8

Table 4: PCB recoveries

		[%]	RSD [%]
PCB 13C Recoveries [%]	PCB-#28	103	3
	PCB-#52	95	4
	PCB-#101	104	4
	PCB-#153	100	5
	PCB-#138	103	4
	PCB-#180	116	3
	PCB-#81	101	2
	PCB-#77	102	2
	PCB-#126	118	4
	PCB-#169	120	2
	PCB-#123	110	4
	PCB-#118	107	6
	PCB-#114	104	3
	PCB-#105	108	4
	PCB-#167	103	4
	PCB-#156	118	2
	PCB-#157	110	7
	PCB-#189	113	4