

## Quality Control Certificate

Product: **Alumina Column**  
 Product No.: 15433  
 Lot No.: **720968**

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:	0,11	pg/column
		(crit: <	0,70 pg/column)
	dl-PCB-TEQ:	0,0034	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	4,8	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	84	to	101	%	(crit: 70	to	120	%)
	PCB	85	to	103	%	(crit: 70	to	120	%)

This is to certify that the Alumina Column, Lot 720968, passed the required test specifications and is released for sale.

date: 25.10.2024 sign.: *M. Brack's*

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 &amp; 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 &amp; 2: blankvalues of PCDD/F and PCB table 3 &amp; 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	<dl
1,2,3,4,7,8-HxCDF	0,032
1,2,3,6,7,8-HxCDF	0,026
2,3,4,6,7,8-HxCDF	<dl
1,2,3,7,8,9-HxCDF	<0,045
1,2,3,4,6,7,8-HpCDF	0,1
1,2,3,4,7,8,9-HpCDF	<dl
1,2,3,4,6,7,8,9-OCDF	<0,054
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	0,06
1,2,3,4,7,8-HxCDD	<0,027
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	0,03
1,2,3,4,6,7,8-HpCDD	0,1
1,2,3,4,6,7,8,9-OCDD	0,75

Table 2: PCB blank

	[pg/column]
PCB-#28	1,67
PCB-#52	2,07
PCB-#101	0,58
PCB-#153	0,46
PCB-#138	<dl
PCB-#180	<0,18
PCB-#81	0,08
PCB-#77	0,297
PCB-#126	0,0245
PCB-#169	0,03
PCB-#123	0,03
PCB-#118	0,35
PCB-#114	0,084
PCB-#105	0,11
PCB-#167	0,043
PCB-#156	<dl
PCB-#157	<dl
PCB-#189	0,085

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,09
upper bound	0,11

PCB-TEQ	[pg/column]
lower bound	0,0034
upper bound	0,0034
Sum DIN	4,8

Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	89	6
	1,2,3,7,8-PeCDF	88	8
	2,3,4,7,8-PeCDF	90	7
	1,2,3,4,7,8-HxCDF	94	5
	1,2,3,6,7,8-HxCDF	101	6
	2,3,4,6,7,8-HxCDF	99	4
	1,2,3,7,8,9-HxCDF	100	4
	1,2,3,4,6,7,8-HpCDF	100	3
	1,2,3,4,7,8,9-HpCDF	92	7
	1,2,3,4,6,7,8,9-OCDF	99	8
	2,3,7,8-TCDD	87	8
	1,2,3,7,8-PeCDD	93	7
	1,2,3,4,7,8-HxCDD	99	3
	1,2,3,6,7,8-HxCDD	84	5
	1,2,3,7,8,9-HxCDD	101	5
	1,2,3,4,6,7,8-HpCDD	99	6
	1,2,3,4,6,7,8,9-OCDD	87	7

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	93	8
	PCB-#52	90	13
	PCB-#101	94	5
	PCB-#153	96	4
	PCB-#138	99	2
	PCB-#180	103	2
	PCB-#81	96	7
	PCB-#77	96	7
	PCB-#126	95	14
	PCB-#169	90	11
	PCB-#123	93	10
	PCB-#118	93	9
	PCB-#114	97	11
	PCB-#105	90	15
	PCB-#167	85	9
	PCB-#156	98	6
	PCB-#157	97	5
	PCB-#189	94	5