

Quality Control Certificate

Product: **Alumina Column**
 Product No.: 15433
 Lot No.: **720187**

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:	0,59	pg/column
		(crit: <	0,7 pg/column)
	dl-PCB-TEQ:	0,0284	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	5,4	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	81	to	101	%	(crit: 70	to	120	%)
	PCB	76	to	95	%	(crit: 70	to	120	%)

This is to certify that the Alumina Column, Lot 720187, passed the required test specifications and is released for sale.

date: 06.05.2024 sign.: T. Kehmeier

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	0,08
1,2,3,7,8-PeCDF	0,08
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	0,11
1,2,3,6,7,8-HxCDF	0,08
2,3,4,6,7,8-HxCDF	0,12
1,2,3,7,8,9-HxCDF	0,07
1,2,3,4,6,7,8-HpCDF	0,09
1,2,3,4,7,8,9-HpCDF	0,1
1,2,3,4,6,7,8,9-OCDF	0,21
2,3,7,8-TCDD	<0,036
1,2,3,7,8-PeCDD	0,46
1,2,3,4,7,8-HxCDD	0,031
1,2,3,6,7,8-HxCDD	0,18
1,2,3,7,8,9-HxCDD	0,07
1,2,3,4,6,7,8-HpCDD	0,15
1,2,3,4,6,7,8,9-OCDD	0,32

Table 2: PCB blank

	[pg/column]
PCB-#28	0,77
PCB-#52	2,05
PCB-#101	0,84
PCB-#153	0,53
PCB-#138	0,74
PCB-#180	0,51
PCB-#81	0,29
PCB-#77	0,2625
PCB-#126	0,2
PCB-#169	0,272
PCB-#123	0,25
PCB-#118	0,35
PCB-#114	0,157
PCB-#105	0,32
PCB-#167	0,309
PCB-#156	0,357
PCB-#157	0,29
PCB-#189	0,321

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,59
upper bound	0,59

PCB-TEQ	[pg/column]
lower bound	0,0284
upper bound	0,0284
Sum DIN	5,4

Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	92	5
	1,2,3,7,8-PeCDF	88	7
	2,3,4,7,8-PeCDF	88	5
	1,2,3,4,7,8-HxCDF	81	3
	1,2,3,6,7,8-HxCDF	88	4
	2,3,4,6,7,8-HxCDF	90	6
	1,2,3,7,8,9-HxCDF	99	3
	1,2,3,4,6,7,8-HpCDF	84	11
	1,2,3,4,7,8,9-HpCDF	95	18
	1,2,3,4,6,7,8,9-OCDF	96	8
	2,3,7,8-TCDD	87	4
	1,2,3,7,8-PeCDD	85	11
	1,2,3,4,7,8-HxCDD	87	7
	1,2,3,6,7,8-HxCDD	82	5
	1,2,3,7,8,9-HxCDD	101	5
	1,2,3,4,6,7,8-HpCDD	90	6
	1,2,3,4,6,7,8,9-OCDD	90	7

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	86	9
	PCB-#52	76	13
	PCB-#101	84	11
	PCB-#153	89	9
	PCB-#138	89	8
	PCB-#180	93	3
	PCB-#81	82	9
	PCB-#77	88	8
	PCB-#126	82	12
	PCB-#169	84	9
	PCB-#123	87	10
	PCB-#118	88	11
	PCB-#114	82	12
	PCB-#105	87	9
	PCB-#167	92	6
	PCB-#156	88	11
	PCB-#157	91	9
	PCB-#189	95	7