

Quality Control Certificate

Product: **Alumina Column**
 Product No.: 15433
 Lot No.: **721627**

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:	0,22	pg/column
		(crit: <	0,70 pg/column)
	dl-PCB-TEQ:	0,0328	pg/column
	(crit: <	0,05	pg/column)
	Sum Total PCB:	9	pg/column
	(crit: <	300	pg/column)

Results Recoveries:	PCDD/F	94	to	118	%	(crit: 70	to	120	%)
	PCB	70	to	117	%	(crit: 70	to	120	%)

This is to certify that the Alumina Column, Lot 721627, passed the required test specifications and is released for sale.

date: 11.03.2025 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= 7

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	<0,036
1,2,3,7,8-PeCDF	0,07
2,3,4,7,8-PeCDF	0,09
1,2,3,4,7,8-HxCDF	0,028
1,2,3,6,7,8-HxCDF	0,045
2,3,4,6,7,8-HxCDF	<0,045
1,2,3,7,8,9-HxCDF	0,25
1,2,3,4,6,7,8-HpCDF	<dl
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	<0,054
1,2,3,4,7,8-HxCDD	0,292
1,2,3,6,7,8-HxCDD	0,45
1,2,3,7,8,9-HxCDD	0,175
1,2,3,4,6,7,8-HpCDD	<dl
1,2,3,4,6,7,8,9-OCDD	0,15

Table 2: PCB blank

	[pg/column]
PCB-#28	2,27
PCB-#52	2,66
PCB-#101	1,16
PCB-#153	1,15
PCB-#138	1,04
PCB-#180	0,715
PCB-#81	0,81
PCB-#77	1,095
PCB-#126	0,19
PCB-#169	0,444
PCB-#123	0,13
PCB-#118	0,53
PCB-#114	0,207
PCB-#105	0,33
PCB-#167	1,504
PCB-#156	1,113
PCB-#157	0,72
PCB-#189	0,693

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,21
upper bound	0,22

PCB-TEQ	[pg/column]
lower bound	0,0328
upper bound	0,0328
Sum DIN	9

Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	102	16
	1,2,3,7,8-PeCDF	100	12
	2,3,4,7,8-PeCDF	102	12
	1,2,3,4,7,8-HxCDF	104	10
	1,2,3,6,7,8-HxCDF	116	12
	2,3,4,6,7,8-HxCDF	111	5
	1,2,3,7,8,9-HxCDF	101	6
	1,2,3,4,6,7,8-HpCDF	110	9
	1,2,3,4,7,8,9-HpCDF	105	7
	1,2,3,4,6,7,8,9-OCDF	109	16
	2,3,7,8-TCDD	95	13
	1,2,3,7,8-PeCDD	94	12
	1,2,3,4,7,8-HxCDD	117	10
	1,2,3,6,7,8-HxCDD	98	10
	1,2,3,7,8,9-HxCDD	118	14
	1,2,3,4,6,7,8-HpCDD	107	9
	1,2,3,4,6,7,8,9-OCDD	101	9

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	89	5
	PCB-#52	70	3
	PCB-#101	90	5
	PCB-#153	83	5
	PCB-#138	104	7
	PCB-#180	102	7
	PCB-#81	109	10
	PCB-#77	117	10
	PCB-#126	116	8
	PCB-#169	100	8
	PCB-#123	107	4
	PCB-#118	106	5
	PCB-#114	106	6
	PCB-#105	114	8
	PCB-#167	97	6
	PCB-#156	99	7
	PCB-#157	104	10
	PCB-#189	105	8