

Quality Control Certificate

Product: **Alumina Column**
 Product No.: 15433
 Lot No.: **718536**

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:	0,24	pg/column
		(crit: <	0,7 pg/column)
	dl-PCB-TEQ:	0,0427	pg/column
	(crit: <	0,05	pg/column)
	Sum Total PCB:	4,2	pg/column
	(crit: <	300	pg/column)

Results Recoveries:	PCDD/F	85	to	119	%	(crit: 70	to	120	%)
	PCB	87	to	120	%	(crit: 70	to	120	%)

This is to certify that the Alumina Column, Lot 718536, passed the required test specifications and is released for sale.

date: 19.06.2023 sign.: T. Kehmeier

The company LCTech GmbH is certified according to ISO 9001



QC-Certificate - 15433 - 718536

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>



QC-Certificate - 15433 - 718536

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	0,09
1,2,3,7,8-PeCDF	0,05
2,3,4,7,8-PeCDF	0,09
1,2,3,4,7,8-HxCDF	0,062
1,2,3,6,7,8-HxCDF	0,026
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	0,038
1,2,3,4,6,7,8,9-OCDF	0,17
2,3,7,8-TCDD	<0,036
1,2,3,7,8-PeCDD	0,14
1,2,3,4,7,8-HxCDD	0,032
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	0,067
1,2,3,4,6,7,8-HpCDD	0,19
1,2,3,4,6,7,8,9-OCDD	0,22

Table 2: PCB blank

	[pg/column]
PCB-#28	0,96
PCB-#52	1,16
PCB-#101	0,65
PCB-#153	0,39
PCB-#138	0,49
PCB-#180	0,584
PCB-#81	0,24
PCB-#77	0,1743
PCB-#126	0,601
PCB-#169	0,251
PCB-#123	0,27
PCB-#118	0,43
PCB-#114	0,143
PCB-#105	0,33
PCB-#167	0,28
PCB-#156	0,193
PCB-#157	0,11
PCB-#189	0,704

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,24
upper bound	0,24

PCB-TEQ	[pg/column]
lower bound	0,0427
upper bound	0,0427
Sum DIN	4,2

Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	102	7
	1,2,3,7,8-PeCDF	86	11
	2,3,4,7,8-PeCDF	91	7
	1,2,3,4,7,8-HxCDF	107	5
	1,2,3,6,7,8-HxCDF	119	3
	2,3,4,6,7,8-HxCDF	117	5
	1,2,3,7,8,9-HxCDF	114	6
	1,2,3,4,6,7,8-HpCDF	114	2
	1,2,3,4,7,8,9-HpCDF	112	4
	1,2,3,4,6,7,8,9-OCDF	116	3
	2,3,7,8-TCDD	91	8
	1,2,3,7,8-PeCDD	85	10
	1,2,3,4,7,8-HxCDD	116	6
	1,2,3,6,7,8-HxCDD	101	3
	1,2,3,7,8,9-HxCDD	116	4
	1,2,3,4,6,7,8-HpCDD	109	4
	1,2,3,4,6,7,8,9-OCDD	103	4

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	88	4
	PCB-#52	95	4
	PCB-#101	96	3
	PCB-#153	87	2
	PCB-#138	91	1
	PCB-#180	97	3
	PCB-#81	108	0
	PCB-#77	113	0
	PCB-#126	120	0
	PCB-#169	110	0
	PCB-#123	95	3
	PCB-#118	90	2
	PCB-#114	93	1
	PCB-#105	96	2
	PCB-#167	95	2
	PCB-#156	98	2
	PCB-#157	100	2
	PCB-#189	109	2