

## Quality Control Certificate

Product: **Alumina Column**  
Product No.: 15433  
Lot No.: **722133**

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:	0,08	pg/column						
		(crit: <	0,70	pg/column)					
	dI-PCB-TEQ:	0,001	pg/column						
		(crit: <	0,05	pg/column)					
	Sum Total PCB:	0,6	pg/column						
		(crit: <	300	pg/column)					
Results Recoveries:	PCDD/F	83	to	109	%	(crit: 70	to	120	%)
	PCB	80	to	113	%	(crit: 70	to	120	%)

This is to certify that the Alumina Column, Lot 722133, passed the required test specifications and is released for sale.

date: 21.07.2025 sign.: 

The company LCTech GmbH is certified according to ISO 9001



## QC-Certificate - 15433 - 722133

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>

## QC-Certificate - 15433 - 722133

### 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	<dl
1,2,3,6,7,8-HxCDF	0,018
2,3,4,6,7,8-HxCDF	<dl
1,2,3,7,8,9-HxCDF	<dl
1,2,3,4,6,7,8-HpCDF	<0,063
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	<0,036
1,2,3,7,8-PeCDD	<dl
1,2,3,4,7,8-HxCDD	<dl
1,2,3,6,7,8-HxCDD	<dl
1,2,3,7,8,9-HxCDD	<dl
1,2,3,4,6,7,8-HpCDD	0,57
1,2,3,4,6,7,8,9-OCDD	1,05

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,04
upper bound	0,08

**Table 2: PCB blank**

	[pg/column]
PCB-#28	0,41
PCB-#52	0,2
PCB-#101	<dl
PCB-#153	<dl
PCB-#138	<dl
PCB-#180	<dl
PCB-#81	<0,027
PCB-#77	<dl
PCB-#126	0,01
PCB-#169	<dl
PCB-#123	0,03
PCB-#118	<dl
PCB-#114	0,004
PCB-#105	<dl
PCB-#167	<dl
PCB-#156	<dl
PCB-#157	<0,018
PCB-#189	<0,0072

PCB-TEQ	[pg/column]
lower bound	0,001
upper bound	0,0013
Sum DIN	0,6

Table 3: PCDD/F recoveries

		[%]	RSD [%]
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	102	7
	1,2,3,7,8-PeCDF	90	10
	2,3,4,7,8-PeCDF	84	11
	1,2,3,4,7,8-HxCDF	92	13
	1,2,3,6,7,8-HxCDF	83	16
	2,3,4,6,7,8-HxCDF	101	9
	1,2,3,7,8,9-HxCDF	103	7
	1,2,3,4,6,7,8-HpCDF	109	7
	1,2,3,4,7,8,9-HpCDF	98	9
	1,2,3,4,6,7,8,9-OCDF	108	11
	2,3,7,8-TCDD	89	7
	1,2,3,7,8-PeCDD	98	12
	1,2,3,4,7,8-HxCDD	109	11
	1,2,3,6,7,8-HxCDD	91	14
	1,2,3,7,8,9-HxCDD	100	13
	1,2,3,4,6,7,8-HpCDD	98	15
	1,2,3,4,6,7,8,9-OCDD	99	15

Table 4: PCB recoveries

		[%]	RSD [%]
PCB 13C Recoveries [%]	PCB-#28	89	5
	PCB-#52	80	6
	PCB-#101	87	5
	PCB-#153	89	8
	PCB-#138	95	11
	PCB-#180	99	8
	PCB-#81	99	3
	PCB-#77	100	3
	PCB-#126	108	5
	PCB-#169	103	9
	PCB-#123	102	3
	PCB-#118	92	3
	PCB-#114	113	4
	PCB-#105	103	5
	PCB-#167	99	7
	PCB-#156	102	8
	PCB-#157	103	8
	PCB-#189	104	9