

Quality Control Certificate

Product: **EVOLUTION AloX Column**
Product No.: 20087
Lot No.: **720906**

Storage Recommendations: Store the column at room temperature below 25°C

Description: The EVOLUTION 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)
dl-PCB-TEQ:	0,0126	pg/column
	(crit: <	0,05 pg/column)
Sum Total PCB:	5,9	pg/column
	(crit: <	300 pg/column)

Results Recoveries:

PCDD/F	90	to	115	%	(crit: 70	to	120	%)
PCB	87	to	104	%	(crit: 70	to	120	%)

This is to certify that the EVOLUTION AloX Column, Lot 720906, passed the required test specifications and is released for sale.

date: 06.11.2024 sign.: 

The company LCTech GmbH is certified according to ISO 9001



QC-Certificate - 20087 - 720906

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 EVOLUTION Alumina Column, Lot , passed the required test specifications and is released for sale.</p>
Remarks	<p>n/a</p>



QC-Certificate - 20087 - 720906

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	<dl
1,2,3,7,8-PeCDF	<dl
2,3,4,7,8-PeCDF	<dl
1,2,3,4,7,8-HxCDF	0,039
1,2,3,6,7,8-HxCDF	0,02
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	0,12
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	<dl
1,2,3,4,7,8-HxCDD	0,05
1,2,3,6,7,8-HxCDD	0,18
1,2,3,7,8,9-HxCDD	0,068
1,2,3,4,6,7,8-HpCDD	0,22
1,2,3,4,6,7,8,9-OCDD	2,03

Table 2: PCB blank

	[pg/column]
PCB-#28	2,14
PCB-#52	2,53
PCB-#101	0,38
PCB-#153	0,28
PCB-#138	0,35
PCB-#180	0,203
PCB-#81	1,37
PCB-#77	0,4843
PCB-#126	0,03
PCB-#169	0,304
PCB-#123	0,31
PCB-#118	0,34
PCB-#114	0,124
PCB-#105	0,44
PCB-#167	0,24
PCB-#156	0,174
PCB-#157	0,64
PCB-#189	0,45

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

PCB-TEQ	[pg/column]
lower bound	0,0126
upper bound	0,0126
Sum DIN	5,9



Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	106	12
	1,2,3,7,8-PeCDF	101	12
	2,3,4,7,8-PeCDF	90	20
	1,2,3,4,7,8-HxCDF	96	23
	1,2,3,6,7,8-HxCDF	109	21
	2,3,4,6,7,8-HxCDF	109	13
	1,2,3,7,8,9-HxCDF	110	8
	1,2,3,4,6,7,8-HpCDF	105	20
	1,2,3,4,7,8,9-HpCDF	115	17
	1,2,3,4,6,7,8,9-OCDF	115	13
	2,3,7,8-TCDD	95	8
	1,2,3,7,8-PeCDD	96	14
	1,2,3,4,7,8-HxCDD	102	22
	1,2,3,6,7,8-HxCDD	90	22
	1,2,3,7,8,9-HxCDD	115	11
	1,2,3,4,6,7,8-HpCDD	104	16
	1,2,3,4,6,7,8,9-OCDD	101	12

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	87	18
	PCB-#52	90	9
	PCB-#101	98	2
	PCB-#153	94	4
	PCB-#138	90	13
	PCB-#180	97	4
	PCB-#81	95	24
	PCB-#77	103	14
	PCB-#126	104	26
	PCB-#169	87	21
	PCB-#123	100	14
	PCB-#118	103	14
	PCB-#114	96	17
	PCB-#105	96	19
	PCB-#167	98	10
	PCB-#156	90	17
	PCB-#157	90	18
PCB-#189	101	15	