Quality Control Certificate

Product:	**Alumina Column**
Product No.:	15433
Lot No.:	**721196**

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:	0,12	pg/column	
	(crit: <	0,70	pg/column)
dl-PCB-TEQ:	0,0478	pg/column	
	(crit: <	0,05	pg/column)
Sum Total PCB:	6,7	pg/column	
	(crit: <	300	pg/column)

Results Recoveries:

PCDD/F	92	to	120	%	(crit:	70	to	120	%)
PCB	90	to	100	%	(crit:	70	to	120	%)

This is to certify that the Alumina Column, Lot 721196, passed the required test specifications and is released for sale.

date: 09.12.2024   sign.: _M.Bradis_

The company LCTech GmbH is certified according to ISO 9001

LCTech GmbH
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DEKRA
certified

Hazards:	NOT FOR HUMAN OR DRUG USE!
	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.
Quality Control:	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.
Quality Management:	This product was produced using a Quality Management System registered to the ISO 9001:2015 (DEKRA)
Documentation / Data Attached:	table 1 & 2: blankvalues of PCDD/F and PCB table 3 & 4: 13C-Recoveries of PCDD/F and PCB
Analytics	This is to certify that the Alumina Column, Lot , passed the required test specifications and is released for sale.
Remarks	n/a

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	<dl
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	0,028
1,2,3,6,7,8-HxCDF	0,037
2,3,4,6,7,8-HxCDF	<0,045
1,2,3,7,8,9-HxCDF	0,07
1,2,3,4,6,7,8-HpCDF	<0,063
1,2,3,4,7,8,9-HpCDF	0,057
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	0,109
1,2,3,6,7,8-HxCDD	0,19
1,2,3,7,8,9-HxCDD	0,151
1,2,3,4,6,7,8-HpCDD	0,1
1,2,3,4,6,7,8,9-OCDD	1,14

sample amount [pg/column]

Table 2: PCB blank

	[pg/column]
PCB-#28	0,98
PCB-#52	1,87
PCB-#101	1,07
PCB-#153	1,32
PCB-#138	0,38
PCB-#180	1,065
PCB-#81	0,43
PCB-#77	0,585
PCB-#126	0,29
PCB-#169	0,617
PCB-#123	0,37
PCB-#118	0,88
PCB-#114	0,081
PCB-#105	0,41
PCB-#167	0,203
PCB-#156	1,009
PCB-#157	0,81
PCB-#189	0,417

sample amount [pg/sample]

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,11
upper bound	0,12

PCB-TEQ	[pg/column]
lower bound	0,0478
upper bound	0,0478
Sum DIN	6,7

Table 3: PCDD/F recoveries

		[%]	RSD [%]
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	98	4
	1,2,3,7,8-PeCDF	101	4
	2,3,4,7,8-PeCDF	92	6
	1,2,3,4,7,8-HxCDF	111	3
	1,2,3,6,7,8-HxCDF	119	3
	2,3,4,6,7,8-HxCDF	116	2
	1,2,3,7,8,9-HxCDF	119	2
	1,2,3,4,6,7,8-HpCDF	111	5
	1,2,3,4,7,8,9-HpCDF	95	6
	1,2,3,4,6,7,8,9-OCDF	114	7
	2,3,7,8-TCDD	97	3
	1,2,3,7,8-PeCDD	96	4
	1,2,3,4,7,8-HxCDD	113	3
	1,2,3,6,7,8-HxCDD	99	4
	1,2,3,7,8,9-HxCDD	120	2
	1,2,3,4,6,7,8-HpCDD	106	5
	1,2,3,4,6,7,8,9-OCDD	100	4

Table 4: PCB recoveries

		[%]	RSD [%]
PCB 13C Recoveries [%]	PCB-#28	97	6
	PCB-#52	92	10
	PCB-#101	93	3
	PCB-#153	100	2
	PCB-#138	92	13
	PCB-#180	97	2
	PCB-#81	92	7
	PCB-#77	94	4
	PCB-#126	98	5
	PCB-#169	95	4
	PCB-#123	90	5
	PCB-#118	92	6
	PCB-#114	92	4
	PCB-#105	91	5
	PCB-#167	95	15
	PCB-#156	96	3
	PCB-#157	97	4
	PCB-#189	100	8