

Quality Control Certificate

Product: Alumina Column

Product No.: 15433

Lot No.: 713815

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-up on a DEXTech Plus system, spiked with recovery standard, evaporated via DEva and has been quantified with a HRGC/HRMS with a resolution of R > 10000.

Results Blank Value:

PCDD/F-TEQ:	0,46	pg/column
	(crit: <	0,7 pg/column
dl-PCB-TEQ:	0,035	pg/column
	(crit: <	0,05 pg/column
Sum Indikator PCB:	4,8	pg/column
	(crit: <	100 pg/column

Results Recoveries:

PCDD/F	70	to	107	%	(crit: 70 to 120)
PCB	77	to	110	%	(crit: 70 to 120)

This is to certify that alumina column, Lot 713815, passed the required test specifications and is released for sale.

date: 17.07.2020 sign.: _____

T. Kehmeier

The company LCTech GmbH is certified according to ISO 9001:2015



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: Blank values of PCDD/F and PCB
Table 3 & 4: 13C-Recoveries of PCDD/F and PCB

Analytcs: All the columns (n>5) have to perform a clean-up of a solvent blank (10 mL n-hexane), spiked with a 13C - labelled quantifier-standard solution with a single column method onto a DEXTech Plus system. The fractions 1 (PCB) and 2 (PCDD/F) are spiked with 13C - labelled recovery- standard solutions and evaporated with the D-EVA vacuum centrifuge. The extracts are measured with a HRMS-DFS from Thermo Fisher Scientific with a resolution of R > 10000. The HRGCs are equipped with 60 m DB5 MS columns. For PCDD/F 5µL are injected via PTV, for PCB 2µL via SSL.

Remarks: n/a

The company LCTech GmbH is certified according to ISO 9001:2015



Results:

Lockmass check:

No significant disturbances, or indicators for contaminations are detected.

Blanks:

Table 1: PCDD/F blank (n=6)

Table 2: PCB blank (n=6)

Congeneres:	[pg/column]:
2,3,7,8-TCDF	<dl
1,2,3,7,8-PeCDF	0,16
2,3,4,7,8-PeCDF	<dl
1,2,3,4,7,8-HxCDF	0,076
1,2,3,6,7,8-HxCDF	0,12
2,3,4,6,7,8-HxCDF	<dl
1,2,3,7,8,9-HxCDF	<dl
1,2,3,4,6,7,8-HpCDF	<dl
1,2,3,4,7,8,9-HpCDF	<0,018
OCDF	<0,054
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	0,41
1,2,3,4,7,8-HxCDD	0,137
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	0,054
1,2,3,4,6,7,8-HpCDD	<dl
OCDD	0,13

Congeneres:	[pg/column]:
PCB 28	0,77
PCB 52	1,79
PCB 77	0,11
PCB 81	0,225
PCB 101	0,89
PCB 123	0,0988
PCB 118	0,15
PCB 114	0,4552
PCB 105	0,25
PCB 126	0,3409
PCB 153	0,8
PCB 138	0,49
PCB 167	0,068
PCB 156	0,21
PCB 157	0,056
PCB 169	0,034
PCB 180	<dl
PCB 189	0,543

TEQ (WHO 2005)	
lower bound	0,46
upper bound	0,48

TEQ (WHO 2005)	
lower bound	0,0352
upper bound	0,0352

Sum DIN PCB	4,8
-------------	-----

The company LCTech GmbH is certified according to ISO 9001:2015

Results:

13C-Recoveries

Table 3: PCDD/F 13C-recoveries (n=6)

Congeneres:	13C rec [%]
2,3,7,8-TCDF	92
1,2,3,7,8-PeCDF	76
2,3,4,7,8-PeCDF	70
1,2,3,4,7,8-HxCDF	88
1,2,3,6,7,8-HxCDF	93
2,3,4,6,7,8-HxCDF	73
1,2,3,7,8,9-HxCDF	79
1,2,3,4,6,7,8-HpCDF	107
1,2,3,4,7,8,9-HpCDF	107
OCDF	100
2,3,7,8-TCDD	80
1,2,3,7,8-PeCDD	80
1,2,3,4,7,8-HxCDD	78
1,2,3,6,7,8-HxCDD	82
1,2,3,7,8,9-HxCDD	80
1,2,3,4,6,7,8-HpCDD	97
OCDD	93

Table 4: PCB 13C-recoveries (n=6)

Congeneres:	13C rec [%]
PCB 28	95
PCB 52	77
PCB 77	104
PCB 81	101
PCB 101	98
PCB 123	94
PCB 118	91
PCB 114	99
PCB 105	110
PCB 126	99
PCB 153	100
PCB 138	103
PCB 167	109
PCB 156	93
PCB 157	97
PCB 169	94
PCB 180	101
PCB 189	92

The company LCTech GmbH is certified according to ISO 9001:2015

