

Quality Control Certificate

Product: Universal Column

Product No.: 19511

Lot No.: 716624

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

Description: The universal column is part of a 3- or 4-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 via DEva 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:	0,26	pg/column
	(crit: <	0,7 pg/column)
dl-PCB-TEQ:	0,008	pg/column
	(crit: <	0,05 pg/column)
Sum Indikator PCB:	5,8	pg/column
	(crit: <	100 pg/column)

Results Recoveries:

PCDD/F	71	to	102	%	(crit: 70 to 120)
PCB	70	to	107	%	(crit: 70 to 120)

This is to certify that universal column, Lot 716624, passed the required test specifications and is released for sale.

date: 25.02.2022 sign.: _____

T. Kehmeier

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



Hazards: NOT FOR HUMAN OR DRUG USE!

The universal column is designed and prepared for usage with the alumina/florisil 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: Our suppliers maintain the highest standard of quality, however due to the high temperature necessary for several steps in the production, some small charred particles may be visible within a batch of silica or filters without any effect on the clean-up.

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Results:

Lockmass check:

No significant disturbances, or indicators for contaminations are detected.

Blanks:

Table 1: PCDD/F blank (n=5)

Table 2: PCB blank (n=5)

Congeneres: [pg/column]:

2,3,7,8-TCDF	0,1
1,2,3,7,8-PeCDF	0,08
2,3,4,7,8-PeCDF	0,14
1,2,3,4,7,8-HxCDF	0,043
1,2,3,6,7,8-HxCDF	<0,018
2,3,4,6,7,8-HxCDF	0,08
1,2,3,7,8,9-HxCDF	0,05
1,2,3,4,6,7,8-HpCDF	<dl
1,2,3,4,7,8,9-HpCDF	0,049
OCDF	0,18
2,3,7,8-TCDD	0,06
1,2,3,7,8-PeCDD	0,11
1,2,3,4,7,8-HxCDD	<0,027
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	0,099
1,2,3,4,6,7,8-HpCDD	<0,09
OCDD	0,75

TEQ (WHO 2005)	
lower bound	0,26
upper bound	0,26

Congeneres: [pg/column]:

PCB 28	1,2
PCB 52	1,62
PCB 77	0,1
PCB 81	0,05
PCB 101	1,28
PCB 123	0,14
PCB 118	0,42
PCB 114	0,1179
PCB 105	0,24
PCB 126	0,0811
PCB 153	0,71
PCB 138	0,7
PCB 167	0,103
PCB 156	0,16
PCB 157	0,078
PCB 169	<dl
PCB 180	0,22
PCB 189	0,125

TEQ (WHO 2005)	
lower bound	0,0082
upper bound	0,0085

Sum DIN PCB	5,8
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Results:

13C-Recoveries

Table 3: PCDD/F 13C-recoveries (n=5)

Congeneres:	13C rec [%]
2,3,7,8-TCDF	93
1,2,3,7,8-PeCDF	84
2,3,4,7,8-PeCDF	83
1,2,3,4,7,8-HxCDF	75
1,2,3,6,7,8-HxCDF	80
2,3,4,6,7,8-HxCDF	74
1,2,3,7,8,9-HxCDF	72
1,2,3,4,6,7,8-HpCDF	102
1,2,3,4,7,8,9-HpCDF	92
OCDF	77
2,3,7,8-TCDD	85
1,2,3,7,8-PeCDD	87
1,2,3,4,7,8-HxCDD	78
1,2,3,6,7,8-HxCDD	73
1,2,3,7,8,9-HxCDD	77
1,2,3,4,6,7,8-HpCDD	92
OCDD	71

Table 4: PCB 13C-recoveries (n=5)

Congeneres:	13C rec [%]
PCB 28	95
PCB 52	107
PCB 77	77
PCB 81	71
PCB 101	100
PCB 123	86
PCB 118	81
PCB 114	91
PCB 105	77
PCB 126	74
PCB 153	102
PCB 138	103
PCB 167	83
PCB 156	78
PCB 157	75
PCB 169	70
PCB 180	98
PCB 189	74

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