

Quality Control Certificate

Product: **Universal Column**
 Product No.: 19511
 Lot No.: **720249**

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 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:	0,07	pg/column
		(crit: <	0,7 pg/column)
	dl-PCB-TEQ:	0,0294	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	6,3	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	79	to	98	%	(crit: 70	to	120	%)
	PCB	70	to	95	%	(crit: 70	to	120	%)

This is to certify that the Universal Column, Lot 720249, passed the required test specifications and is released for sale.

date: 10.06.2024 sign.: 

The company LCTech GmbH is certified according to ISO 9001



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Hazards:	<p>NOT FOR HUMAN OR DRUG USE!</p> <p>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.</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 Universal Column, Lot , passed the required test specifications and is released for sale.</p>
Remarks	<p>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.</p>

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Results:

Lockmass check: No significant disturbances, or indicators for contaminations are detected.

Blanks: n= 9

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	<dl
1,2,3,7,8-PeCDF	<0,045
2,3,4,7,8-PeCDF	<dl
1,2,3,4,7,8-HxCDF	0,053
1,2,3,6,7,8-HxCDF	0,026
2,3,4,6,7,8-HxCDF	0,06
1,2,3,7,8,9-HxCDF	<0,045
1,2,3,4,6,7,8-HpCDF	<0,063
1,2,3,4,7,8,9-HpCDF	<0,018
1,2,3,4,6,7,8,9-OCDF	0,07
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	<dl
1,2,3,4,7,8-HxCDD	0,031
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	<0,027
1,2,3,4,6,7,8-HpCDD	<0,09
1,2,3,4,6,7,8,9-OCDD	0,45

Table 2: PCB blank

	[pg/column]
PCB-#28	1,76
PCB-#52	1,12
PCB-#101	1,33
PCB-#153	0,54
PCB-#138	1,08
PCB-#180	0,457
PCB-#81	0,16
PCB-#77	0,529
PCB-#126	0,2231
PCB-#169	0,225
PCB-#123	0,14
PCB-#118	0,91
PCB-#114	0,15
PCB-#105	0,34
PCB-#167	0,531
PCB-#156	0,854
PCB-#157	0,85
PCB-#189	0,907

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,03
upper bound	0,07

PCB-TEQ	[pg/column]
lower bound	0,0294
upper bound	0,0294
Sum DIN	6,3

Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	83	7
	1,2,3,7,8-PeCDF	82	4
	2,3,4,7,8-PeCDF	82	4
	1,2,3,4,7,8-HxCDF	85	10
	1,2,3,6,7,8-HxCDF	95	7
	2,3,4,6,7,8-HxCDF	90	10
	1,2,3,7,8,9-HxCDF	92	10
	1,2,3,4,6,7,8-HpCDF	94	7
	1,2,3,4,7,8,9-HpCDF	95	13
	1,2,3,4,6,7,8,9-OCDF	91	7
	2,3,7,8-TCDD	81	6
	1,2,3,7,8-PeCDD	83	6
	1,2,3,4,7,8-HxCDD	93	9
	1,2,3,6,7,8-HxCDD	79	7
	1,2,3,7,8,9-HxCDD	98	10
	1,2,3,4,6,7,8-HpCDD	87	9
	1,2,3,4,6,7,8,9-OCDD	87	10

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	90	4
	PCB-#52	81	9
	PCB-#101	86	5
	PCB-#153	87	5
	PCB-#138	89	4
	PCB-#180	88	4
	PCB-#81	82	8
	PCB-#77	86	9
	PCB-#126	92	13
	PCB-#169	90	11
	PCB-#123	88	8
	PCB-#118	78	9
	PCB-#114	95	11
	PCB-#105	78	11
	PCB-#167	70	5
	PCB-#156	74	13
	PCB-#157	75	5
	PCB-#189	72	15