

Quality Control Certificate

Product: **Universal Column**
 Product No.: 19511
 Lot No.: **720941**

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:	0,23	pg/column
		(crit: <	0,70 pg/column)
	dl-PCB-TEQ:	0,0055	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	5,9	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	87	to	107	%	(crit: 70	to	120	%)
	PCB	85	to	110	%	(crit: 70	to	120	%)

This is to certify that the Universal Column, Lot 720941, passed the required test specifications and is released for sale.

date: 25.09.2024 sign.: T. Kehmeier

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= 6

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	0,04
1,2,3,7,8-PeCDF	0,07
2,3,4,7,8-PeCDF	0,09
1,2,3,4,7,8-HxCDF	0,04
1,2,3,6,7,8-HxCDF	0,038
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	<0,063
1,2,3,4,7,8,9-HpCDF	0,027
1,2,3,4,6,7,8,9-OCDF	<0,054
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	0,16
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	<0,027
1,2,3,4,6,7,8-HpCDD	0,11
1,2,3,4,6,7,8,9-OCDD	1

Table 2: PCB blank

	[pg/column]
PCB-#28	3,2
PCB-#52	1,33
PCB-#101	1,07
PCB-#153	0,25
PCB-#138	<0,261
PCB-#180	<dl
PCB-#81	0,22
PCB-#77	0,478
PCB-#126	0,0488
PCB-#169	<0,027
PCB-#123	<dl
PCB-#118	0,24
PCB-#114	0,002
PCB-#105	<dl
PCB-#167	<dl
PCB-#156	<dl
PCB-#157	<dl
PCB-#189	0,102

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,22
upper bound	0,23

PCB-TEQ	[pg/column]
lower bound	0,0055
upper bound	0,0055
Sum DIN	5,9

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Table 3: PCDD/F recoveries

	[%]	RSD [%]
2,3,7,8-TCDF	97	6
1,2,3,7,8-PeCDF	93	3
2,3,4,7,8-PeCDF	93	5
1,2,3,4,7,8-HxCDF	96	8
1,2,3,6,7,8-HxCDF	107	8
2,3,4,6,7,8-HxCDF	103	6
1,2,3,7,8,9-HxCDF	104	8
1,2,3,4,6,7,8-HpCDF	102	4
1,2,3,4,7,8,9-HpCDF	102	5
1,2,3,4,6,7,8,9-OCDF	100	6
2,3,7,8-TCDD	92	7
1,2,3,7,8-PeCDD	88	6
1,2,3,4,7,8-HxCDD	101	5
1,2,3,6,7,8-HxCDD	87	5
1,2,3,7,8,9-HxCDD	106	5
1,2,3,4,6,7,8-HpCDD	102	5
1,2,3,4,6,7,8,9-OCDD	89	5

Table 4: PCB recoveries

	[%]	RSD [%]
PCB-#28	96	4
PCB-#52	99	3
PCB-#101	97	3
PCB-#153	94	2
PCB-#138	100	3
PCB-#180	100	2
PCB-#81	110	15
PCB-#77	110	18
PCB-#126	93	13
PCB-#169	102	16
PCB-#123	89	10
PCB-#118	86	13
PCB-#114	94	5
PCB-#105	95	16
PCB-#167	85	15
PCB-#156	87	11
PCB-#157	86	15
PCB-#189	85	13