

Quality Control Certificate

Product: **Universal Column**
 Product No.: 19511
 Lot No.: **721046**

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:	0,11	pg/column
		(crit: <	0,70 pg/column)
	dl-PCB-TEQ:	0,0062	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	0	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	83	to	118	%	(crit: 70	to	120	%)
	PCB	71	to	100	%	(crit: 70	to	120	%)

This is to certify that the Universal Column, Lot 721046, passed the required test specifications and is released for sale.

date: 28.11.2024 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= 6

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	0,06
1,2,3,7,8-PeCDF	<0,045
2,3,4,7,8-PeCDF	0,12
1,2,3,4,7,8-HxCDF	<0,027
1,2,3,6,7,8-HxCDF	0,052
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	0,14
1,2,3,4,7,8,9-HpCDF	<0,018
1,2,3,4,6,7,8,9-OCDF	<dl
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	<dl
1,2,3,4,7,8-HxCDD	0,029
1,2,3,6,7,8-HxCDD	0,14
1,2,3,7,8,9-HxCDD	0,029
1,2,3,4,6,7,8-HpCDD	0,14
1,2,3,4,6,7,8,9-OCDD	1,66

Table 2: PCB blank

	[pg/column]
PCB-#28	<dl
PCB-#52	<dl
PCB-#101	<dl
PCB-#153	<dl
PCB-#138	<dl
PCB-#180	<dl
PCB-#81	<0,027
PCB-#77	<0,045
PCB-#126	0,0509
PCB-#169	0,037
PCB-#123	<dl
PCB-#118	<dl
PCB-#114	<dl
PCB-#105	<dl
PCB-#167	<dl
PCB-#156	<dl
PCB-#157	<0,018
PCB-#189	<dl

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,08
upper bound	0,11

PCB-TEQ	[pg/column]
lower bound	0,0062
upper bound	0,0062
Sum DIN	0

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Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	101	3
	1,2,3,7,8-PeCDF	104	3
	2,3,4,7,8-PeCDF	91	4
	1,2,3,4,7,8-HxCDF	110	3
	1,2,3,6,7,8-HxCDF	118	3
	2,3,4,6,7,8-HxCDF	112	3
	1,2,3,7,8,9-HxCDF	113	2
	1,2,3,4,6,7,8-HpCDF	108	2
	1,2,3,4,7,8,9-HpCDF	98	6
	1,2,3,4,6,7,8,9-OCDF	104	5
	2,3,7,8-TCDD	83	4
	1,2,3,7,8-PeCDD	94	4
	1,2,3,4,7,8-HxCDD	109	5
	1,2,3,6,7,8-HxCDD	91	4
	1,2,3,7,8,9-HxCDD	110	3
	1,2,3,4,6,7,8-HpCDD	96	5
	1,2,3,4,6,7,8,9-OCDD	84	8

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	100	6
	PCB-#52	100	3
	PCB-#101	100	3
	PCB-#153	94	4
	PCB-#138	96	5
	PCB-#180	95	3
	PCB-#81	95	2
	PCB-#77	97	3
	PCB-#126	94	4
	PCB-#169	99	4
	PCB-#123	82	12
	PCB-#118	76	16
	PCB-#114	88	5
	PCB-#105	77	13
	PCB-#167	71	15
	PCB-#156	76	13
	PCB-#157	73	17
	PCB-#189	81	12