

Quality Control Certificate

Product: **Universal Column**
Product No.: 19511
Lot No.: **723845**

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:	0,05	pg/column
		(crit: <	0,70 pg/column)
	dl-PCB-TEQ:	0,0023	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	75,5	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	83	to	113	%	(crit: 70	to	120	%)
	PCB	73	to	107	%	(crit: 70	to	120	%)

This is to certify that the Universal Column, Lot 723845, passed the required test specifications and is released for sale.

date: 06.07.2026

sign.: 

The company LCTech GmbH is certified according to ISO 9001



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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: blankvalues of PCDD/F and PCB table 3 & 4: 13C-Recoveries of PCDD/F and PCB
Analytics	This is to certify that the Universal Column, Lot , passed the required test specifications and is released for sale.
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: n= 6

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	<0,036
1,2,3,7,8-PeCDF	<dl
2,3,4,7,8-PeCDF	<dl
1,2,3,4,7,8-HxCDF	<dl
1,2,3,6,7,8-HxCDF	<0,018
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	<dl
1,2,3,4,6,7,8,9-OCDF	<0,054
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	<dl
1,2,3,4,7,8-HxCDD	<dl
1,2,3,6,7,8-HxCDD	<dl
1,2,3,7,8,9-HxCDD	<dl
1,2,3,4,6,7,8-HpCDD	<0,09
1,2,3,4,6,7,8,9-OCDD	0,23

PCDD/F TEQ (2005)	[pg/column]
lower bound	0
upper bound	0,05

Table 2: PCB blank

	[pg/column]
PCB-#28	45,21
PCB-#52	25,69
PCB-#101	2,88
PCB-#153	0,85
PCB-#138	0,85
PCB-#180	<0,18
PCB-#81	0,04
PCB-#77	0,312
PCB-#126	0,0223
PCB-#169	<dl
PCB-#123	0,05
PCB-#118	1,15
PCB-#114	0,043
PCB-#105	0,47
PCB-#167	0,033
PCB-#156	<0,126
PCB-#157	0,05
PCB-#189	0,021

PCB-TEQ	[pg/column]
lower bound	0,0023
upper bound	0,0026
Sum DIN	75,5



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Table 3: PCDD/F recoveries

		RSD [%]	
		[%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	96	1
	1,2,3,7,8-PeCDF	98	6
	2,3,4,7,8-PeCDF	84	6
	1,2,3,4,7,8-HxCDF	96	3
	1,2,3,6,7,8-HxCDF	103	4
	2,3,4,6,7,8-HxCDF	109	2
	1,2,3,7,8,9-HxCDF	106	3
	1,2,3,4,6,7,8-HpCDF	109	2
	1,2,3,4,7,8,9-HpCDF	98	4
	1,2,3,4,6,7,8,9-OCDF	101	2
	2,3,7,8-TCDD	93	2
	1,2,3,7,8-PeCDD	83	6
	1,2,3,4,7,8-HxCDD	113	3
	1,2,3,6,7,8-HxCDD	94	2
	1,2,3,7,8,9-HxCDD	111	2
	1,2,3,4,6,7,8-HpCDD	98	2
	1,2,3,4,6,7,8,9-OCDD	94	2

Table 4: PCB recoveries

		RSD [%]	
		[%]	
PCB 13C Recoveries [%]	PCB-#28	90	1
	PCB-#52	90	2
	PCB-#101	93	1
	PCB-#153	100	2
	PCB-#138	97	2
	PCB-#180	93	1
	PCB-#81	105	5
	PCB-#77	107	3
	PCB-#126	101	5
	PCB-#169	92	18
	PCB-#123	81	10
	PCB-#118	76	13
	PCB-#114	85	4
	PCB-#105	79	11
	PCB-#167	80	14
	PCB-#156	81	10
	PCB-#157	82	14
	PCB-#189	73	11