

Quality Control Certificate

Product: **Universal Column**
Product No.: 19511
Lot No.: **724357**

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:	0,0033	pg/column	(crit: < 0,05	pg/column)
Sum Total PCB:	23,9	pg/column	(crit: < 300	pg/column)

Results Recoveries:

PCDD/F	76	to 104	%	(crit: 70	to 120	%)
PCB	95	to 114	%	(crit: 70	to 120	%)

This is to certify that the Universal Column, Lot 724357, passed the required test specifications and is released for sale.

date: 31.08.2026 sign.: T. Kehmeier

The company LCTech GmbH is certified according to ISO 9001



QC-Certificate - 19511 - 724357

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.

QC-Certificate - 19511 - 724357

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	0,05
1,2,3,7,8-PeCDF	0,07
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	0,03
1,2,3,6,7,8-HxCDF	0,018
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	<dl
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	0,04
1,2,3,7,8-PeCDD	0,06
1,2,3,4,7,8-HxCDD	0,03
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	0,29

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

Table 2: PCB blank

	[pg/column]
PCB-#28	11,72
PCB-#52	8,52
PCB-#101	2,1
PCB-#153	0,91
PCB-#138	0,68
PCB-#180	<0,18
PCB-#81	0,06
PCB-#77	0,152
PCB-#126	0,0457
PCB-#169	<0,027
PCB-#123	0,1
PCB-#118	0,85
PCB-#114	0,061
PCB-#105	0,25
PCB-#167	0,604
PCB-#156	<0,126
PCB-#157	0,06
PCB-#189	0,091

PCB-TEQ	[pg/column]
lower bound	0,0033
upper bound	0,0033
Sum DIN	23,9

Table 3: PCDD/F recoveries

		[%]	RSD [%]
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	98	2
	1,2,3,7,8-PeCDF	93	3
	2,3,4,7,8-PeCDF	93	3
	1,2,3,4,7,8-HxCDF	97	4
	1,2,3,6,7,8-HxCDF	99	6
	2,3,4,6,7,8-HxCDF	101	3
	1,2,3,7,8,9-HxCDF	102	4
	1,2,3,4,6,7,8-HpCDF	100	3
	1,2,3,4,7,8,9-HpCDF	84	5
	1,2,3,4,6,7,8,9-OCDF	87	8
	2,3,7,8-TCDD	97	2
	1,2,3,7,8-PeCDD	89	2
	1,2,3,4,7,8-HxCDD	104	6
	1,2,3,6,7,8-HxCDD	90	3
	1,2,3,7,8,9-HxCDD	101	3
	1,2,3,4,6,7,8-HpCDD	85	7
	1,2,3,4,6,7,8,9-OCDD	76	6

Table 4: PCB recoveries

		[%]	RSD [%]
PCB 13C Recoveries [%]	PCB-#28	102	3
	PCB-#52	100	1
	PCB-#101	105	1
	PCB-#153	114	1
	PCB-#138	111	1
	PCB-#180	110	1
	PCB-#81	109	4
	PCB-#77	111	5
	PCB-#126	111	2
	PCB-#169	107	3
	PCB-#123	100	9
	PCB-#118	95	11
	PCB-#114	104	4
	PCB-#105	97	10
	PCB-#167	99	14
	PCB-#156	104	9
	PCB-#157	106	13
	PCB-#189	101	10