

Quality Control Certificate

Product: **Smart Column**
 Product No.: 19513
 Lot No.: **720177**

Storage Recommendations: Store the column at room temperature below 25°C

Description: The Smart Column is part of a 3-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: <	0,7 pg/column)
	dl-PCB-TEQ:	0,029	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	12,9	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	79	to	96	%	(crit: 70	to	120	%)
	PCB	79	to	95	%	(crit: 70	to	120	%)

This is to certify that the Smart Column, Lot 720177, passed the required test specifications and is released for sale.

date: 13.05.2024 sign.: *M. Brackis*

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 Smart 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 Smart 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	<0,036
1,2,3,7,8-PeCDF	<0,045
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	<0,027
1,2,3,6,7,8-HxCDF	0,031
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	0,07
1,2,3,4,7,8,9-HpCDF	0,042
1,2,3,4,6,7,8,9-OCDF	0,1
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	<0,054
1,2,3,4,7,8-HxCDD	0,042
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	0,03
1,2,3,4,6,7,8-HpCDD	<0,09
1,2,3,4,6,7,8,9-OCDD	0,23

Table 2: PCB blank

	[pg/column]
PCB-#28	1,79
PCB-#52	4,47
PCB-#101	2,24
PCB-#153	1,58
PCB-#138	1,24
PCB-#180	1,55
PCB-#81	0,17
PCB-#77	0,378
PCB-#126	0,2374
PCB-#169	0,164
PCB-#123	0,79
PCB-#118	1,41
PCB-#114	0,606
PCB-#105	0,96
PCB-#167	0,806
PCB-#156	0,962
PCB-#157	0,91
PCB-#189	1,175

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,1
upper bound	0,11

PCB-TEQ	[pg/column]
lower bound	0,029
upper bound	0,029
Sum DIN	12,9

Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	84	3
	1,2,3,7,8-PeCDF	83	5
	2,3,4,7,8-PeCDF	87	6
	1,2,3,4,7,8-HxCDF	88	6
	1,2,3,6,7,8-HxCDF	92	7
	2,3,4,6,7,8-HxCDF	89	5
	1,2,3,7,8,9-HxCDF	92	8
	1,2,3,4,6,7,8-HpCDF	93	5
	1,2,3,4,7,8,9-HpCDF	83	4
	1,2,3,4,6,7,8,9-OCDF	94	3
	2,3,7,8-TCDD	79	6
	1,2,3,7,8-PeCDD	88	4
	1,2,3,4,7,8-HxCDD	96	7
	1,2,3,6,7,8-HxCDD	82	8
	1,2,3,7,8,9-HxCDD	96	8
	1,2,3,4,6,7,8-HpCDD	90	4
	1,2,3,4,6,7,8,9-OCDD	88	3

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	88	5
	PCB-#52	81	5
	PCB-#101	89	3
	PCB-#153	93	3
	PCB-#138	95	3
	PCB-#180	94	6
	PCB-#81	79	3
	PCB-#77	84	5
	PCB-#126	83	9
	PCB-#169	82	7
	PCB-#123	88	9
	PCB-#118	85	4
	PCB-#114	89	4
	PCB-#105	92	7
	PCB-#167	87	4
	PCB-#156	88	4
	PCB-#157	87	10
	PCB-#189	91	11