

## Quality Control Certificate

Product: **Smart Column**  
Product No.: 19513  
Lot No.: **721146**

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:	0,14	pg/column
	(crit: < 0,70	pg/column)
dl-PCB-TEQ:	0,0448	pg/column
	(crit: < 0,05	pg/column)
Sum Total PCB:	4,6	pg/column
	(crit: < 300	pg/column)

Results Recoveries:

PCDD/F	78	to	110	%	(crit: 70	to	120	%)
PCB	86	to	105	%	(crit: 70	to	120	%)

This is to certify that the Smart Column, Lot 721146, passed the required test specifications and is released for sale.

date: 05.11.2024 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 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 &amp; 2: blankvalues of PCDD/F and PCB table 3 &amp; 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	0,046
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	0,07
1,2,3,4,7,8,9-HpCDF	<dl
1,2,3,4,6,7,8,9-OCDF	<dl
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	0,08
1,2,3,4,7,8-HxCDD	0,069
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	0,041
1,2,3,4,6,7,8-HpCDD	0,1
1,2,3,4,6,7,8,9-OCDD	0,79

Table 2: PCB blank

	[pg/column]
PCB-#28	2,79
PCB-#52	1,31
PCB-#101	0,31
PCB-#153	0,19
PCB-#138	<0,261
PCB-#180	<0,18
PCB-#81	0,03
PCB-#77	0,072
PCB-#126	0,2807
PCB-#169	0,558
PCB-#123	0,05
PCB-#118	<0,108
PCB-#114	0,029
PCB-#105	<0,081
PCB-#167	<dl
PCB-#156	0,237
PCB-#157	0,19
PCB-#189	0,454

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,13
upper bound	0,14

PCB-TEQ	[pg/column]
lower bound	0,0448
upper bound	0,0448
Sum DIN	4,6

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Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	88	29
	1,2,3,7,8-PeCDF	87	21
	2,3,4,7,8-PeCDF	86	25
	1,2,3,4,7,8-HxCDF	90	22
	1,2,3,6,7,8-HxCDF	98	21
	2,3,4,6,7,8-HxCDF	95	17
	1,2,3,7,8,9-HxCDF	96	16
	1,2,3,4,6,7,8-HpCDF	100	18
	1,2,3,4,7,8,9-HpCDF	110	18
	1,2,3,4,6,7,8,9-OCDF	98	19
	2,3,7,8-TCDD	78	28
	1,2,3,7,8-PeCDD	81	23
	1,2,3,4,7,8-HxCDD	97	22
	1,2,3,6,7,8-HxCDD	82	21
	1,2,3,7,8,9-HxCDD	99	18
	1,2,3,4,6,7,8-HpCDD	87	18
	1,2,3,4,6,7,8,9-OCDD	90	19

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	97	3
	PCB-#52	98	2
	PCB-#101	94	3
	PCB-#153	102	2
	PCB-#138	105	2
	PCB-#180	100	2
	PCB-#81	90	41
	PCB-#77	93	40
	PCB-#126	89	41
	PCB-#169	87	41
	PCB-#123	86	6
	PCB-#118	87	8
	PCB-#114	90	5
	PCB-#105	87	8
	PCB-#167	90	7
	PCB-#156	93	6
	PCB-#157	93	7
	PCB-#189	98	5