

Quality Control Certificate

Product: **Smart Column**
 Product No.: 19513
 Lot No.: **718820**

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:	0,19	pg/column
		(crit: <	0,7 pg/column)
	dl-PCB-TEQ:	0,0012	pg/column
		(crit: <	0,05 pg/column)
	Sum Total PCB:	1,9	pg/column
		(crit: <	300 pg/column)

Results Recoveries:	PCDD/F	72	to	93	%	(crit: 70	to	120	%)
	PCB	76	to	96	%	(crit: 70	to	120	%)

This is to certify that the Smart Column, Lot 718820, passed the required test specifications and is released for sale.

date: 26.09.2023 sign.: *M. Bradis*

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= 9

Table 1: PCDD/F blank

	[pg/column]
2,3,7,8-TCDF	0,06
1,2,3,7,8-PeCDF	0,07
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	0,071
1,2,3,6,7,8-HxCDF	0,044
2,3,4,6,7,8-HxCDF	0,08
1,2,3,7,8,9-HxCDF	0,11
1,2,3,4,6,7,8-HpCDF	<0,063
1,2,3,4,7,8,9-HpCDF	0,057
1,2,3,4,6,7,8,9-OCDF	0,09
2,3,7,8-TCDD	<0,036
1,2,3,7,8-PeCDD	0,07
1,2,3,4,7,8-HxCDD	0,056
1,2,3,6,7,8-HxCDD	0,25
1,2,3,7,8,9-HxCDD	0,114
1,2,3,4,6,7,8-HpCDD	0,15
1,2,3,4,6,7,8,9-OCDD	0,34

Table 2: PCB blank

	[pg/column]
PCB-#28	0,47
PCB-#52	0,6
PCB-#101	0,4
PCB-#153	<0,081
PCB-#138	0,24
PCB-#180	0,218
PCB-#81	0,04
PCB-#77	0,072
PCB-#126	0,0116
PCB-#169	<dl
PCB-#123	0,2
PCB-#118	0,19
PCB-#114	0,156
PCB-#105	0,25
PCB-#167	0,133
PCB-#156	0,314
PCB-#157	0,09
PCB-#189	0,261

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,19
upper bound	0,19

PCB-TEQ	[pg/column]
lower bound	0,0012
upper bound	0,0015
Sum DIN	1,9

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Table 3: PCDD/F recoveries

	[%]	RSD [%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	78	4
	1,2,3,7,8-PeCDF	78	6
	2,3,4,7,8-PeCDF	80	11
	1,2,3,4,7,8-HxCDF	84	20
	1,2,3,6,7,8-HxCDF	92	19
	2,3,4,6,7,8-HxCDF	90	16
	1,2,3,7,8,9-HxCDF	88	12
	1,2,3,4,6,7,8-HpCDF	92	6
	1,2,3,4,7,8,9-HpCDF	82	2
	1,2,3,4,6,7,8,9-OCDF	77	4
	2,3,7,8-TCDD	79	5
	1,2,3,7,8-PeCDD	81	12
	1,2,3,4,7,8-HxCDD	93	12
	1,2,3,6,7,8-HxCDD	79	12
	1,2,3,7,8,9-HxCDD	93	9
	1,2,3,4,6,7,8-HpCDD	82	2
	1,2,3,4,6,7,8,9-OCDD	72	4

Table 4: PCB recoveries

	[%]	RSD [%]	
PCB 13C Recoveries [%]	PCB-#28	87	4
	PCB-#52	87	3
	PCB-#101	91	3
	PCB-#153	91	2
	PCB-#138	90	2
	PCB-#180	88	4
	PCB-#81	83	10
	PCB-#77	83	9
	PCB-#126	96	23
	PCB-#169	89	25
	PCB-#123	82	13
	PCB-#118	77	17
	PCB-#114	86	6
	PCB-#105	80	14
	PCB-#167	76	21
	PCB-#156	86	16
	PCB-#157	82	19
	PCB-#189	78	20