Quality Control Certificate

Product: **Smart Column**

Product No.: 19513

Lot No.: 721447

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:	0,05	pg/column
		(crit: < 0,70	pg/column)
	dl-PCB-TEQ:	0,0043	pg/column
		(crit: < 0,05	pg/column)
	Sum Total PCB:	2,5	pg/column
		(crit: < 300	pg/column)

Results Recoveries:	PCDD/F	91	to	111	%	(crit:	70	to	120	%)
	PCB	88	to	100	%	(crit:	70	to	120	%)

This is to certify that the Smart Column, Lot 721447, passed the required test specifications and is released for sale.

date: 18.02.2025 sign.: T. Kehrmeier

The company LCTech GmbH is certified according to ISO 9001

LCTech GmbH
Daimlerstrasse 4, 84419 Obertaufkirchen
Germany

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Hazards:	NOT FOR HUMAN OR DRUG USE! 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.
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 Smart 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= 9

Table 1: PCDD/F blank

sample amount [pg/column]		[pg/column]
	2,3,7,8-TCDF	<dl
	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	<dl
	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	<dl
	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	<dl
	1,2,3,4,6,7,8,9-OCDD	<0,108

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

Table 2: PCB blank

sample amount [pg/sample]		[pg/column]
	PCB-#28	0,74
	PCB-#52	0,77
	PCB-#101	0,2
	PCB-#153	0,56
	PCB-#138	<0,261
	PCB-#180	0,273
	PCB-#81	0,03
	PCB-#77	<0,045
	PCB-#126	0,0358
	PCB-#169	<0,027
	PCB-#123	0,07
	PCB-#118	0,21
	PCB-#114	0,151
	PCB-#105	0,26
	PCB-#167	<dl
	PCB-#156	0,38
	PCB-#157	0,03
	PCB-#189	0,3

PCB-TEQ	[pg/column]
lower bound	0,0043
upper bound	0,0043
Sum DIN	2,5

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Table 3: PCDD/F recoveries

PCDD/F 13C Recoveries [%]	[%]	RSD [%]
2,3,7,8-TCDF	95	7
1,2,3,7,8-PeCDF	102	8
2,3,4,7,8-PeCDF	91	11
1,2,3,4,7,8-HxCDF	103	5
1,2,3,6,7,8-HxCDF	110	6
2,3,4,6,7,8-HxCDF	107	5
1,2,3,7,8,9-HxCDF	106	5
1,2,3,4,6,7,8-HpCDF	108	5
1,2,3,4,7,8,9-HpCDF	105	6
1,2,3,4,6,7,8,9-OCDF	97	6
2,3,7,8-TCDD	93	4
1,2,3,7,8-PeCDD	98	10
1,2,3,4,7,8-HxCDD	111	5
1,2,3,6,7,8-HxCDD	91	5
1,2,3,7,8,9-HxCDD	108	5
1,2,3,4,6,7,8-HpCDD	101	4
1,2,3,4,6,7,8,9-OCDD	95	4

Table 4: PCB recoveries

PCB 13C Recoveries [%]	[%]	RSD [%]
PCB-#28	98	3
PCB-#52	94	4
PCB-#101	96	3
PCB-#153	92	6
PCB-#138	97	5
PCB-#180	100	6
PCB-#81	92	7
PCB-#77	95	8
PCB-#126	97	12
PCB-#169	95	17
PCB-#123	92	6
PCB-#118	91	6
PCB-#114	92	4
PCB-#105	93	7
PCB-#167	89	7
PCB-#156	88	8
PCB-#157	90	7
PCB-#189	92	7

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