Quality Control Certificate

Product:	**Smart Column**
Product No.:	19513
Lot No.:	**722496**

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:	0,08	pg/column
		(crit: < 0,70	pg/column)
	dl-PCB-TEQ:	0,0283	pg/column
		(crit: < 0,05	pg/column)
	Sum Total PCB:	3,2	pg/column
		(crit: < 300	pg/column)

Results Recoveries:	PCDD/F	79	to	111	%	(crit:	70	to	120	%)
	PCB	88	to	106	%	(crit:	70	to	120	%)

This is to certify that the Smart Column, Lot 722496, passed the required test specifications and is released for sale.

date: 28.10.2025 sign.: T. Kehrmeier

The company LCTech GmbH is certified according to ISO 9001

LCTech GmbH
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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= 7

Table 1: PCDD/F blank

sample amount [pg/column]		[pg/column]
	2,3,7,8-TCDF	<dl
	1,2,3,7,8-PeCDF	<0,045
	2,3,4,7,8-PeCDF	<dl
	1,2,3,4,7,8-HxCDF	<0,027
	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	0,09
	1,2,3,4,7,8,9-HpCDF	<dl
	1,2,3,4,6,7,8,9-OCDF	<0,054
	2,3,7,8-TCDD	<dl
	1,2,3,7,8-PeCDD	<0,054
	1,2,3,4,7,8-HxCDD	<0,027
	1,2,3,6,7,8-HxCDD	0,19
	1,2,3,7,8,9-HxCDD	<0,027
	1,2,3,4,6,7,8-HpCDD	0,29
	1,2,3,4,6,7,8,9-OCDD	2,72

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,07
upper bound	0,08

Table 2: PCB blank

sample amount [pg/sample]		[pg/column]
	PCB-#28	1,57
	PCB-#52	1,13
	PCB-#101	0,45
	PCB-#153	<dl
	PCB-#138	<dl
	PCB-#180	<dl
	PCB-#81	0,16
	PCB-#77	0,441
	PCB-#126	0,2306
	PCB-#169	0,17
	PCB-#123	<dl
	PCB-#118	<dl
	PCB-#114	<0,0018
	PCB-#105	<0,081
	PCB-#167	<0,027
	PCB-#156	<0,126
	PCB-#157	0,06
	PCB-#189	<dl

PCB-TEQ	[pg/column]
lower bound	0,0283
upper bound	0,0283
Sum DIN	3,2

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Table 3: PCDD/F 13C recoveries

PCDD/F 13C Recoveries [%]	[%]	RSD [%]
2,3,7,8-TCDF	87	7
1,2,3,7,8-PeCDF	88	6
2,3,4,7,8-PeCDF	93	11
1,2,3,4,7,8-HxCDF	102	14
1,2,3,6,7,8-HxCDF	108	14
2,3,4,6,7,8-HxCDF	97	19
1,2,3,7,8,9-HxCDF	101	19
1,2,3,4,6,7,8-HpCDF	111	9
1,2,3,4,7,8,9-HpCDF	90	15
1,2,3,4,6,7,8,9-OCDF	89	13
2,3,7,8-TCDD	85	6
1,2,3,7,8-PeCDD	93	12
1,2,3,4,7,8-HxCDD	100	18
1,2,3,6,7,8-HxCDD	92	11
1,2,3,7,8,9-HxCDD	97	18
1,2,3,4,6,7,8-HpCDD	93	15
1,2,3,4,6,7,8,9-OCDD	79	14

Table 4: PCB 13C recoveries

PCB 13C Recoveries [%]	[%]	RSD [%]
PCB-#28	94	7
PCB-#52	92	4
PCB-#101	99	4
PCB-#153	93	5
PCB-#138	97	3
PCB-#180	106	8
PCB-#81	98	6
PCB-#77	101	8
PCB-#126	98	13
PCB-#169	93	13
PCB-#123	101	7
PCB-#118	98	7
PCB-#114	102	8
PCB-#105	100	8
PCB-#167	88	5
PCB-#156	92	5
PCB-#157	95	6
PCB-#189	91	5

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