Quality Control Certificate

Product: **Smart Column**

Product No.: 19513

Lot No.: 723154

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:	0,09	pg/column
		(crit: < 0,70	pg/column)
	dl-PCB-TEQ:	0,0155	pg/column
		(crit: < 0,05	pg/column)
	Sum Total PCB:	69,5	pg/column
		(crit: < 300	pg/column)

Results Recoveries:	PCDD/F	80	to	101	%	(crit:	70	to	120	%)
	PCB	79	to	103	%	(crit:	70	to	120	%)

This is to certify that the Smart Column, Lot 723154, passed the required test specifications and is released for sale.

date: 19.02.2026 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= 6

Table 1: PCDD/F blank

sample amount [pg/column]		[pg/column]
	2,3,7,8-TCDF	<0,036
	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	0,15
	1,2,3,4,7,8,9-HpCDF	<0,018
	1,2,3,4,6,7,8,9-OCDF	<0,054
	2,3,7,8-TCDD	<0,036
	1,2,3,7,8-PeCDD	<dl
	1,2,3,4,7,8-HxCDD	<0,027
	1,2,3,6,7,8-HxCDD	0,2
	1,2,3,7,8,9-HxCDD	<0,027
	1,2,3,4,6,7,8-HpCDD	0,19
	1,2,3,4,6,7,8,9-OCDD	2

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,06
upper bound	0,09

Table 2: PCB blank

sample amount [pg/sample]		[pg/column]
	PCB-#28	35,38
	PCB-#52	24,76
	PCB-#101	4,78
	PCB-#153	2,07
	PCB-#138	2,17
	PCB-#180	0,365
	PCB-#81	0,15
	PCB-#77	0,437
	PCB-#126	0,1209
	PCB-#169	0,108
	PCB-#123	0,15
	PCB-#118	1,34
	PCB-#114	0,058
	PCB-#105	0,39
	PCB-#167	0,432
	PCB-#156	0,143
	PCB-#157	0,1
	PCB-#189	0,223

PCB-TEQ	[pg/column]
lower bound	0,0155
upper bound	0,0155
Sum DIN	69,5

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Table 3: PCDD/F recoveries

PCDD/F 13C Recoveries [%]		[%]	RSD [%]
	2,3,7,8-TCDF	95	4
	1,2,3,7,8-PeCDF	99	5
	2,3,4,7,8-PeCDF	91	4
	1,2,3,4,7,8-HxCDF	90	4
	1,2,3,6,7,8-HxCDF	95	4
	2,3,4,6,7,8-HxCDF	92	4
	1,2,3,7,8,9-HxCDF	97	3
	1,2,3,4,6,7,8-HpCDF	101	3
	1,2,3,4,7,8,9-HpCDF	93	4
	1,2,3,4,6,7,8,9-OCDF	85	8
	2,3,7,8-TCDD	90	5
	1,2,3,7,8-PeCDD	91	5
	1,2,3,4,7,8-HxCDD	94	4
	1,2,3,6,7,8-HxCDD	82	4
	1,2,3,7,8,9-HxCDD	101	3
	1,2,3,4,6,7,8-HpCDD	95	3
	1,2,3,4,6,7,8,9-OCDD	80	7

Table 4: PCB recoveries

PCB 13C Recoveries [%]		[%]	RSD [%]
	PCB-#28	89	6
	PCB-#52	84	6
	PCB-#101	91	2
	PCB-#153	89	4
	PCB-#138	93	1
	PCB-#180	94	2
	PCB-#81	95	5
	PCB-#77	100	6
	PCB-#126	103	6
	PCB-#169	99	7
	PCB-#123	90	8
	PCB-#118	84	10
	PCB-#114	94	5
	PCB-#105	89	10
	PCB-#167	79	11
	PCB-#156	90	8
	PCB-#157	87	10
	PCB-#189	87	10

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