Quality Control Certificate

Product: **Smart Column**

Product No.: 19513

Lot No.: **720469**

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:	0,0087	pg/column
	(crit: < 0,05	pg/column)
Sum Total PCB:	16,3	pg/column
	(crit: < 300	pg/column)

Results Recoveries:

PCDD/F	76	to 102	%	(crit: 70	to 120	%)
PCB	70	to 89	%	(crit: 70	to 120	%)

This is to certify that the Smart Column, Lot 720469, passed the required test specifications and is released for sale.

date: 25.07.2024   sign.: _M.Bredis_

The company LCTech GmbH is certified according to ISO 9001

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

	[pg/column]
2,3,7,8-TCDF	0,09
1,2,3,7,8-PeCDF	0,08
2,3,4,7,8-PeCDF	<0,081
1,2,3,4,7,8-HxCDF	0,04
1,2,3,6,7,8-HxCDF	0,05
2,3,4,6,7,8-HxCDF	<0,045
1,2,3,7,8,9-HxCDF	0,06
1,2,3,4,6,7,8-HpCDF	0,12
1,2,3,4,7,8,9-HpCDF	<0,018
1,2,3,4,6,7,8,9-OCDF	0,13
2,3,7,8-TCDD	<dl
1,2,3,7,8-PeCDD	<dl
1,2,3,4,7,8-HxCDD	<0,027
1,2,3,6,7,8-HxCDD	<0,108
1,2,3,7,8,9-HxCDD	0,03
1,2,3,4,6,7,8-HpCDD	0,14
1,2,3,4,6,7,8,9-OCDD	1,84

sample amount [pg/column]

Table 2: PCB blank

	[pg/column]
PCB-#28	6,57
PCB-#52	4,99
PCB-#101	1,76
PCB-#153	1,12
PCB-#138	1,31
PCB-#180	0,584
PCB-#81	<0,027
PCB-#77	0,277
PCB-#126	0,0666
PCB-#169	0,062
PCB-#123	0,48
PCB-#118	0,6
PCB-#114	0,488
PCB-#105	0,25
PCB-#167	0,299
PCB-#156	0,631
PCB-#157	0,37
PCB-#189	0,929

sample amount [pg/sample]

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,05
upper bound	0,08

PCB-TEQ	[pg/column]
lower bound	0,0087
upper bound	0,0087
Sum DIN	16,3

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Table 3: PCDD/F recoveries

	[%]	RSD [%]
2,3,7,8-TCDF	84	11
1,2,3,7,8-PeCDF	76	8
2,3,4,7,8-PeCDF	86	8
1,2,3,4,7,8-HxCDF	91	6
1,2,3,6,7,8-HxCDF	102	7
2,3,4,6,7,8-HxCDF	97	12
1,2,3,7,8,9-HxCDF	95	8
1,2,3,4,6,7,8-HpCDF	89	5
1,2,3,4,7,8,9-HpCDF	80	8
1,2,3,4,6,7,8,9-OCDF	91	9
2,3,7,8-TCDD	80	10
1,2,3,7,8-PeCDD	81	10
1,2,3,4,7,8-HxCDD	91	8
1,2,3,6,7,8-HxCDD	79	5
1,2,3,7,8,9-HxCDD	92	9
1,2,3,4,6,7,8-HpCDD	82	5
1,2,3,4,6,7,8,9-OCDD	84	12

Table 4: PCB recoveries

	[%]	RSD [%]
PCB-#28	74	8
PCB-#52	70	1
PCB-#101	78	6
PCB-#153	70	11
PCB-#138	85	14
PCB-#180	81	6
PCB-#81	77	5
PCB-#77	81	8
PCB-#126	77	7
PCB-#169	79	7
PCB-#123	89	7
PCB-#118	83	7
PCB-#114	89	7
PCB-#105	86	8
PCB-#167	74	4
PCB-#156	86	24
PCB-#157	87	13
PCB-#189	79	5