Quality Control Certificate

Product:	**Smart Column**
Product No.:	19513
Lot No.:	**720977**

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:	0,1	pg/column
	(crit: < 0,70	pg/column)
dl-PCB-TEQ:	0,0076	pg/column
	(crit: < 0,05	pg/column)
Sum Total PCB:	4,2	pg/column
	(crit: < 300	pg/column)

Results Recoveries:

PCDD/F	88	to 117	%	(crit: 70	to 120	%)
PCB	81	to 105	%	(crit: 70	to 120	%)

This is to certify that the Smart Column, Lot 720977, passed the required test specifications and is released for sale.

date: 05.11.2024   sign.:   *M. Bradis*

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=   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	<0,081
	1,2,3,4,7,8-HxCDF	<0,027
	1,2,3,6,7,8-HxCDF	0,026
	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	<0,063
	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	<0,054
	1,2,3,4,7,8-HxCDD	0,058
	1,2,3,6,7,8-HxCDD	<0,108
	1,2,3,7,8,9-HxCDD	0,035
	1,2,3,4,6,7,8-HpCDD	<0,09
	1,2,3,4,6,7,8,9-OCDD	0,85

Table 2: PCB blank

sample amount [pg/sample]		[pg/column]
	PCB-#28	2,61
	PCB-#52	1,15
	PCB-#101	0,21
	PCB-#153	0,2
	PCB-#138	<0,261
	PCB-#180	<0,18
	PCB-#81	0,04
	PCB-#77	0,062
	PCB-#126	0,0647
	PCB-#169	0,037
	PCB-#123	0,02
	PCB-#118	<dl
	PCB-#114	0,023
	PCB-#105	<0,081
	PCB-#167	<dl
	PCB-#156	<0,126
	PCB-#157	0,08
	PCB-#189	0,125

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,09
upper bound	0,1

PCB-TEQ	[pg/column]
lower bound	0,0076
upper bound	0,0076
Sum DIN	4,2

Table 3: PCDD/F recoveries

PCDD/F 13C Recoveries [%]		[%]	RSD [%]
	2,3,7,8-TCDF	99	3
	1,2,3,7,8-PeCDF	95	3
	2,3,4,7,8-PeCDF	94	4
	1,2,3,4,7,8-HxCDF	99	1
	1,2,3,6,7,8-HxCDF	107	2
	2,3,4,6,7,8-HxCDF	103	2
	1,2,3,7,8,9-HxCDF	103	2
	1,2,3,4,6,7,8-HpCDF	108	2
	1,2,3,4,7,8,9-HpCDF	117	2
	1,2,3,4,6,7,8,9-OCDF	106	1
	2,3,7,8-TCDD	88	2
	1,2,3,7,8-PeCDD	88	3
	1,2,3,4,7,8-HxCDD	107	2
	1,2,3,6,7,8-HxCDD	90	1
	1,2,3,7,8,9-HxCDD	107	1
	1,2,3,4,6,7,8-HpCDD	93	2
	1,2,3,4,6,7,8,9-OCDD	97	1

Table 4: PCB recoveries

PCB 13C Recoveries [%]		[%]	RSD [%]
	PCB-#28	96	2
	PCB-#52	98	1
	PCB-#101	93	2
	PCB-#153	101	3
	PCB-#138	105	2
	PCB-#180	99	2
	PCB-#81	86	2
	PCB-#77	89	2
	PCB-#126	82	4
	PCB-#169	81	5
	PCB-#123	84	5
	PCB-#118	83	6
	PCB-#114	88	3
	PCB-#105	83	6
	PCB-#167	86	6
	PCB-#156	91	3
	PCB-#157	90	6
	PCB-#189	97	4