Quality Control Certificate

Product:	**Standard Column**
Product No.:	19512
Lot No.:	**722579**

Storage Recommendations: Store the column at room temperature below 25°C

Description: The standard Column is part of a 3- or 4-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:	0,0024	pg/column
		(crit: < 0,05	pg/column)
	Sum Total PCB:	0	pg/column
		(crit: < 300	pg/column)

Results Recoveries:	PCDD/F	77	to	110	%	(crit:	70	to	120	%)
	PCB	81	to	113	%	(crit:	70	to	120	%)

This is to certify that the Standard Column, Lot 722579, passed the required test specifications and is released for sale.

date: 22.09.2025 sign.: M. Bradis

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 standard 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 standard 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	<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	<0,09
	1,2,3,4,6,7,8,9-OCDD	0,39

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	<0,153
	PCB-#52	<0,144
	PCB-#101	<dl
	PCB-#153	<dl
	PCB-#138	<dl
	PCB-#180	<dl
	PCB-#81	<0,027
	PCB-#77	0,337
	PCB-#126	0,0238
	PCB-#169	<dl
	PCB-#123	<dl
	PCB-#118	<dl
	PCB-#114	0,005
	PCB-#105	<dl
	PCB-#167	<dl
	PCB-#156	<dl
	PCB-#157	<0,018
	PCB-#189	<0,0072

PCB-TEQ	[pg/column]
lower bound	0,0024
upper bound	0,0027
Sum DIN	0

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Table 3: PCDD/F recoveries

PCDD/F 13C Recoveries [%]		[%]	RSD [%]
	2,3,7,8-TCDF	94	3
	1,2,3,7,8-PeCDF	77	4
	2,3,4,7,8-PeCDF	100	9
	1,2,3,4,7,8-HxCDF	101	1
	1,2,3,6,7,8-HxCDF	110	3
	2,3,4,6,7,8-HxCDF	95	3
	1,2,3,7,8,9-HxCDF	102	5
	1,2,3,4,6,7,8-HpCDF	103	4
	1,2,3,4,7,8,9-HpCDF	95	4
	1,2,3,4,6,7,8,9-OCDF	90	3
	2,3,7,8-TCDD	95	5
	1,2,3,7,8-PeCDD	95	8
	1,2,3,4,7,8-HxCDD	98	4
	1,2,3,6,7,8-HxCDD	79	3
	1,2,3,7,8,9-HxCDD	102	6
	1,2,3,4,6,7,8-HpCDD	97	3
	1,2,3,4,6,7,8,9-OCDD	79	4

Table 4: PCB recoveries

PCB 13C Recoveries [%]		[%]	RSD [%]
	PCB-#28	89	11
	PCB-#52	93	13
	PCB-#101	101	4
	PCB-#153	103	10
	PCB-#138	99	2
	PCB-#180	94	2
	PCB-#81	99	2
	PCB-#77	101	2
	PCB-#126	95	3
	PCB-#169	103	9
	PCB-#123	82	7
	PCB-#118	81	8
	PCB-#114	85	6
	PCB-#105	83	8
	PCB-#167	82	6
	PCB-#156	85	3
	PCB-#157	86	7
	PCB-#189	113	7

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