Quality Control Certificate

Product:	**Florisil Column**
Product No.:	**13807**
Lot No.:	**714387**

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

Description: The florisil 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-up on a DEXTech Plus system, spiked with recovery standard, evaporated via DEva and has been quantified with a HRGC/HRMS with a resolution of R > 10000.

Results Blank Value:	PCDD/F-TEQ:	0,45	pg/column
		(crit: < 0,7	pg/column
	dl-PCB-TEQ:	0,012	pg/column
		(crit: < 0,05	pg/column
	Sum Indikator PCB:	23,39	pg/column
		(crit: < 100	pg/column

Results Recoveries:	PCDD/F	76	to	111	%	(crit: 70	to	120)
	PCB	74	to	104	%	(crit: 70	to	120)

This is to certify that florisil column, Lot 714387, passed the required test specifications and is released for sale.

date: 09.02.2021 sign.: T. Kehemeier

The company LCTech GmbH is certified according to ISO 9001:2015

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QC Certificate - Florisil Column - 13807 - 714387

Hazards:

NOT FOR HUMAN OR DRUG USE!

The florisil column is designed and prepared for usage with the universal/standard & smart 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:	Blank values of PCDD/F and PCB
Table 3 & 4:	13C-Recoveries of PCDD/F and PCB

Analytics:

All the columns (n>5) have to perform a clean-up of a solvent blank (10 mL n-hexane), spiked with a 13C - labelled quantifier-standard solution with a single column method onto a DEXTech Plus system. The fractions 1 (PCB) and 2 (PCDD/F) are spiked with 13C - labelled recovery- standard solutions and evaporated with the D-EVA vacuum centrifuge. The extracts are measured with a HRMS-DFS from Thermo Fisher Scientific with a resolution of R > 10000. The HRGCs are equipped with 60 m DB5 MS columns. For PCDD/F 5µL are injected via PTV, for PCB 2µL via SSL.

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 florisil 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:

Table 1: PCDD/F blank (n=9)

Congeneres:	[pg/column]:
2,3,7,8-TCDF	0,08
1,2,3,7,8-PeCDF	0,41
2,3,4,7,8-PeCDF	0,26
1,2,3,4,7,8-HxCDF	0,105
1,2,3,6,7,8-HxCDF	0,11
2,3,4,6,7,8-HxCDF	0,16
1,2,3,7,8,9-HxCDF	0,16
1,2,3,4,6,7,8-HpCDF	<0,063
1,2,3,4,7,8,9-HpCDF	0,176
OCDF	0,41
2,3,7,8-TCDD	<0,036
1,2,3,7,8-PeCDD	0,23
1,2,3,4,7,8-HxCDD	0,127
1,2,3,6,7,8-HxCDD	0,21
1,2,3,7,8,9-HxCDD	0,128
1,2,3,4,6,7,8-HpCDD	<0,09
OCDD	0,51

TEQ (WHO 2005)	
lower bound	0,45
upper bound	0,45

Table 2: PCB blank (n=9)

Congeneres:	[pg/column]:
PCB 28	3,86
PCB 52	6,12
PCB 77	0,06
PCB 81	0,085
PCB 101	5,17
PCB 123	0,0679
PCB 118	1,1
PCB 114	0,076
PCB 105	0,17
PCB 126	0,1039
PCB 153	4,74
PCB 138	2,73
PCB 167	0,141
PCB 156	<0,126
PCB 157	0,053
PCB 169	0,044
PCB 180	0,63
PCB 189	0,084

TEQ (WHO 2005)	
lower bound	0,0118
upper bound	0,0118

Sum DIN PCB	23,39

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Results:

13C-Recoveries

Table 3: PCDD/F 13C-recoveries (n=9)

Congeneres:	13C rec [%]
2,3,7,8-TCDF	97
1,2,3,7,8-PeCDF	97
2,3,4,7,8-PeCDF	92
1,2,3,4,7,8-HxCDF	90
1,2,3,6,7,8-HxCDF	80
2,3,4,6,7,8-HxCDF	94
1,2,3,7,8,9-HxCDF	98
1,2,3,4,6,7,8-HpCDF	76
1,2,3,4,7,8,9-HpCDF	79
OCDF	80
2,3,7,8-TCDD	98
1,2,3,7,8-PeCDD	99
1,2,3,4,7,8-HxCDD	108
1,2,3,6,7,8-HxCDD	111
1,2,3,7,8,9-HxCDD	95
1,2,3,4,6,7,8-HpCDD	77
OCDD	76

Table 4: PCB 13C-recoveries (n=9)

Congeneres:	13C rec [%]
PCB 28	90
PCB 52	89
PCB 77	94
PCB 81	88
PCB 101	98
PCB 123	103
PCB 118	101
PCB 114	104
PCB 105	104
PCB 126	94
PCB 153	87
PCB 138	91
PCB 167	98
PCB 156	90
PCB 157	94
PCB 169	74
PCB 180	89
PCB 189	90

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