Quality Control Certificate

Product:	**Florisil Column**
Product No.:	**13807**
Lot No.:	**716858**

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

Description: The Florisil Column is part of a 3-column setup for the sample cleanup of environmental-, food- / feed- and similar matrices. It is designed for the analysis of polychlorinated dibenzo-p-dioxins (PCDD), polychlorinated dibenzofurans (PCDF) and polychlorinated biphenyl (PCB) congeners with the DEXTech systems from LCTech GmbH

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 via 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:	0,59	pg/column
		(crit: < 0,7	pg/column)
	dl-PCB-TEQ:	0,05	pg/column
		(crit: < 0,05	pg/column)
	Sum Indikator PCB:	15,83	pg/column
		(crit: < 100	pg/column)

Results Recoveries:	PCDD/F	81	to	113	%	(crit: 70	to	120)
	PCB	89	to	119	%	(crit: 70	to	120)

This is to certify that the13807, Lot 716858, passed the required test specifications and is released for sale.

date: 17.08.2022 sign.: T. Kehemeier

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

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QC Certificate - Florisil Column - 13807 - 716858

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=6)

Congeneres:	[pg/column]:
2,3,7,8-TCDF	0,09
1,2,3,7,8-PeCDF	0,07
2,3,4,7,8-PeCDF	0,14
1,2,3,4,7,8-HxCDF	0,115
1,2,3,6,7,8-HxCDF	0,12
2,3,4,6,7,8-HxCDF	0,11
1,2,3,7,8,9-HxCDF	0,13
1,2,3,4,6,7,8-HpCDF	0,24
1,2,3,4,7,8,9-HpCDF	0,213
OCDF	0,26
2,3,7,8-TCDD	0,13
1,2,3,7,8-PeCDD	0,11
1,2,3,4,7,8-HxCDD	1,089
1,2,3,6,7,8-HxCDD	0,84
1,2,3,7,8,9-HxCDD	0,508
1,2,3,4,6,7,8-HpCDD	0,58
OCDD	0,88

TEQ (WHO 2005)	
lower bound	0,59
upper bound	0,59

Table 2: PCB blank (n=6)

Congeneres:	[pg/column]:
PCB 28	1,64
PCB 52	2,73
PCB 77	0,48
PCB 81	0,246
PCB 101	2,14
PCB 123	0,3485
PCB 118	1,8
PCB 114	0,2694
PCB 105	1,09
PCB 126	0,4014
PCB 153	4,16
PCB 138	3,49
PCB 167	0,478
PCB 156	0,36
PCB 157	0,236
PCB 169	0,312
PCB 180	1,19
PCB 189	1,027

TEQ (WHO 2005)	
lower bound	0,0498
upper bound	0,0498

Sum DIN PCB	15,83

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Results:

13C-Recoveries

Table 3: PCDD/F 13C-recoveries (n=6)

Congeneres:	13C rec [%]
2,3,7,8-TCDF	101
1,2,3,7,8-PeCDF	94
2,3,4,7,8-PeCDF	97
1,2,3,4,7,8-HxCDF	87
1,2,3,6,7,8-HxCDF	98
2,3,4,6,7,8-HxCDF	95
1,2,3,7,8,9-HxCDF	96
1,2,3,4,6,7,8-HpCDF	99
1,2,3,4,7,8,9-HpCDF	113
OCDF	92
2,3,7,8-TCDD	95
1,2,3,7,8-PeCDD	96
1,2,3,4,7,8-HxCDD	105
1,2,3,6,7,8-HxCDD	81
1,2,3,7,8,9-HxCDD	95
1,2,3,4,6,7,8-HpCDD	100
OCDD	85

Table 4: PCB 13C-recoveries (n=6)

Congeneres:	13C rec [%]
PCB 28	94
PCB 52	94
PCB 77	98
PCB 81	98
PCB 101	93
PCB 123	99
PCB 118	97
PCB 114	99
PCB 105	98
PCB 126	105
PCB 153	89
PCB 138	92
PCB 167	99
PCB 156	102
PCB 157	104
PCB 169	89
PCB 180	99
PCB 189	119

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