



Hazards:	<p>NOT FOR HUMAN OR DRUG USE!</p> <p>The 209 Column is designed and prepared for usage with the Alumina 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.</p>
Quality Control:	<p>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.</p>
Quality Management:	<p>This product was produced using a Quality Management System registered to the ISO 9001:2015 (DEKRA)</p>
Documentation / Data Attached:	<p>table 1 & 2: blankvalues of PCDD/F and PCB table 3 & 4: 13C-Recoveries of PCDD/F and PCB</p>
Analytics	<p>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 default alumina plus or pure 209 method onto a DEXTech Pure or Plus system. There are 2 fractions, fraction 1 (all 209 PCB) and fraction 2 (PCDD/F). Both fractions are spiked with the corresponding 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.</p>
Remarks	<p>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.</p>



Results:

Lockmass check: No significant disturbances, or indicators for contaminations are detected.

Table 1: PCB recoveries

	[%]
PCB#1L	71
PCB#3L	72
PCB#4L	73
PCB#8L	72
PCB#15L	73
PCB#19L	74
PCB#28L	83
PCB#54L	74
PCB#52L	70
PCB#70L	71
PCB#81L	71
PCB#77L	70
PCB#104L	65
PCB#95LL	70
PCB#101L	67
PCB#123L	72
PCB#118L	70
PCB#114L	72
PCB#105L	73
PCB#126L	86
PCB#155L	71
PCB#153L	72
PCB#138L	73
PCB#167L	72
PCB#156L	73
PCB#157L	74
PCB#169L	83
PCB#180L	74
PCB#170L	70
PCB#188L	71
PCB#189L	71
PCB#202L	70
PCB#205L	65
PCB#208L	70
PCB#209L	67

Table 2: PCB blank

	[pg/column]
PCB#1	0,1232
PCB#3	0,1523
PCB#4	0,8838
PCB#8/5	1,0388
PCB#15	0,4243
PCB#19	0,4702
PCB#28	3,0732
PCB#54	0,05
PCB#52/69	1,0142
PCB#70	0,3627
PCB#81	0,0243
PCB#77	0,0573
PCB#104	0,0008
PCB#102/93/98/95	0,1337
PCB#101	0,3103
PCB#123	0,0523
PCB#118	0,0817
PCB#114	0,0272
PCB#105	0,0128
PCB#126	0,0275
PCB#155	0,046
PCB#153	0,1888
PCB#138	0,1202
PCB#167	0,0278
PCB#156	0,0907
PCB#157	0,031
PCB#169	0,0503
PCB#180	0,1315
PCB#170	0,061
PCB#188	0,0298
PCB#189	0,1065
PCB#202	0,043
PCB#205	0,0448
PCB#208	0,0068
PCB#209	0,02

Blanks: n = 6

	[pg/column]
PCB-TEQ	
lower bound	0,0043
upper bound	0,0043
Sum DIN	4,7

	[pg/column]
Grade of chlorination	
sum mono	0,3858
sum di	8,5277
sum tri	23,0833
sum tetra	5,8922
sum penta	1,7043
sum hexa	1,9875
sum hepta	0,931
sum octa	0,5072
sum nona	0,0788
sum deca	0,02
sum total*	43,1178

* crit sum total: <900 pg/column

Blanks: n = 6

Table 3: PCDD/F recoveries

	[%]	
PCDD/F 13C Recoveries [%]	2,3,7,8-TCDF	90
	1,2,3,7,8-PeCDF	90
	2,3,4,7,8-PeCDF	94
	1,2,3,4,7,8-HxCDF	98
	1,2,3,6,7,8-HxCDF	105
	2,3,4,6,7,8-HxCDF	101
	1,2,3,7,8,9-HxCDF	94
	1,2,3,4,6,7,8-HpCDF	104
	1,2,3,4,7,8,9-HpCDF	89
	1,2,3,4,6,7,8,9-OCDF	96
	2,3,7,8-TCDD	86
	1,2,3,7,8-PeCDD	90
	1,2,3,4,7,8-HxCDD	105
	1,2,3,6,7,8-HxCDD	89
	1,2,3,7,8,9-HxCDD	100
	1,2,3,4,6,7,8-HpCDD	98
	1,2,3,4,6,7,8,9-OCDD	96

Table 4: PCDD/F blank

	[pg/column]	
native amount	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	0,023
	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	<0,018
	1,2,3,4,6,7,8,9-OCDF	<0,054
	2,3,7,8-TCDD	0,04
	1,2,3,7,8-PeCDD	<0,054
	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	<0,027
	1,2,3,4,6,7,8-HpCDD	0,11
	1,2,3,4,6,7,8,9-OCDD	0,44

PCDD/F TEQ (2005)	[pg/column]
lower bound	0,11
upper bound	0,11