Attachment no. 1 to the Certificate of Analysis for work order FP2501661

Sample: Complete collagen

ALS SAMPLE ID: FP2501661/ 002

Measurement results PCDD/Fs:

Sample:			Complete collagen		
			Final extract [µl]:		25
Sample weight [g]:	10.64		Injection volume [µl]:		4
			Acquisition date [d.m.y]:		24.01.2025
2,3,7,8-PCDD/Fs	Result [pg/g]	Limit of Detection [pg/g]	Limit of Quantification [pg/g]	[1]WHO 2005 TEFs	WHO-TEQ Upperbound [pg/g]
2,3,7,8-TCDD	< 0.00087	0.00087	0.0017	1	0.00087
1,2,3,7,8-PeCDD	< 0.0014	0.0014	0.0028	1	0.0014
1,2,3,4,7,8-HxCDD	< 0.0021	0.0021	0.0042	0.1	0.00021
1,2,3,6,7,8-HxCDD	< 0.0019	0.0019	0.0038	0.1	0.00019
1,2,3,7,8,9-HxCDD	< 0.0022	0.0022	0.0044	0.1	0.00022
1,2,3,4,6,7,8-HpCDD	< 0.0025	0.0025	0.005	0.01	0.000025
OCDD	< 0.0039	0.0039	0.0078	0.0003	0.0000012
2,3,7,8-TCDF	< 0.00069	0.00069	0.0014	0.1	0.000069
1,2,3,7,8-PeCDF	< 0.0011	0.0011	0.0022	0.03	0.000034
2,3,4,7,8-PeCDF	< 0.0012	0.0012	0.0024	0.3	0.00036
1,2,3,4,7,8-HxCDF	< 0.0014	0.0014	0.0027	0.1	0.00014
1,2,3,6,7,8-HxCDF	< 0.0013	0.0013	0.0025	0.1	0.00013
1,2,3,7,8,9-HxCDF	< 0.0015	0.0015	0.0031	0.1	0.00015
2,3,4,6,7,8-HxCDF	< 0.0015	0.0015	0.003	0.1	0.00015
1,2,3,4,6,7,8-HpCDF	< 0.0018	0.0018	0.0036	0.01	0.000018
1,2,3,4,7,8,9-HpCDF	< 0.004	0.004	0.008	0.01	0.00004
OCDF	< 0.0029	0.0029	0.0058	0.0003	0.00000087
WHO-TEQ from quantified 2,3,7,8-PCDD/Fs -"Lowerbound"					0
WHO-TEQ from 2,3,7,8-PCDD/Fs -„Mediumbound"					0.002
Maximum possible WHO-TEQ -"Upperbound"					**0.004**

PCDDs	Result [pg/g]	**PCDFs**	Result [pg/g]
Tetra-CDDs	< 0.019	Tetra-CDFs	< 0.026
Penta-CDDs	< 0.02	Penta-CDFs	< 0.031
Hexa-CDDs	< 0.021	Hexa-CDFs	< 0.022
Hepta-CDDs	< 0.005	Hepta-CDFs	< 0.0072
OCDD	< 0.0039	OCDF	< 0.0029
Total PCDDs	< 0.069	Total PCDFs	< 0.089

[1]WHO 2005 TEF: Van den Berg et al: Toxicological Sciences Advance Acces, 7 July 2006

The limit of quantification is defined as double of the detection limit.

The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.

The value of detection limit is mentioned as the actual value at the acquisition date.

Limit of detection is equal to LOQ according to Commision Regulation (EU) No 2017/644.

Measurement uncertainty is expressed as a double (k=2) relative standard deviation (RSD%), and corresponds to 95% confidence interval.

Estimation of uncertainty of each 2,3,7,8-PCDD/F congener is 30% and total WHO-TEQ is 20%.

These values were ensured by analyses of certified reference material under conditions of internal reproducibility.

Results marked "<" are bellow limit of detection or quantification.

"Lowerbound" and "Upperbound" are levels defined in Regulation 2017/644 and EN 1948-4.

"Mediumbound" is levels defined in Regulation 2017/644.

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Sample: Complete collagen

ALS SAMPLE ID: FP2501661/ 002

Measurement results PCBs:

Sample:			Complete collagen		
			Final extract [µl]:		250
Sample weight [g]:	10.64		Injection volume [µl]:		4
			Acquisition date [d.m.y h:m]:		24.01.2025
PCBs	Result [pg/g]	Limit of Detection [pg/g]	Limit of Quantification [pg/g]	[1]WHO 2005 TEFs	WHO-TEQ Upperbound [pg/g]
PCB #77	< 1	0.0055	1	0.0001	0.0001
PCB #81	< 0.0049	0.0049	0.016	0.0003	0.0000015
PCB #126	< 0.0034	0.0034	0.011	0.1	0.00034
PCB #169	< 0.0048	0.0048	0.016	0.03	0.00014
PCB #105	< 5.6	0.084	5.6	0.00003	0.00017
PCB #114	< 0.042	0.042	0.14	0.00003	0.0000013
PCB #118	< 5.6	0.039	5.6	0.00003	0.00017
PCB #123	< 0.038	0.038	0.13	0.00003	0.0000011
PCB #156	< 2.8	0.05	2.8	0.00003	0.000085
PCB #157	< 0.062	0.062	0.21	0.00003	0.0000018
PCB #167	< 0.043	0.043	0.14	0.00003	0.0000013
PCB #189	< 0.082	0.082	0.27	0.00003	0.0000024
WHO-TEQ from quantified PCBs - "Lowerbound"					0
WHO-TEQ from quantified, 0,5LOD and 0,5LOQ non quantified PCBs-"Mediumbound"					0.00051
WHO-TEQ from quantified, LOD and LOQ non quantified PCBs -"Upperbound"					**0.001**

PCBs	Result [ng/g]	Limit of Detection [ng/g]	Limit of Quantification [ng/g]	Σindicator PCB Lowerbound [ng/g]	Σindicator PCB Upperbound [ng/g]
PCB #28	< 0.021	0.000018	0.021	0	0.021
PCB #52	< 0.018	0.000038	0.018	0	0.018
PCB #101	< 0.017	0.000049	0.017	0	0.017
PCB #138	< 0.036	0.00006	0.036	0	0.036
PCB #153	< 0.043	0.000047	0.043	0	0.043
PCB #180	< 0.016	0.000059	0.016	0	0.016
Σindicator PCB 6 -"Lowerbound"				0	-
Σindicator PCB 6 -"Upperbound"				-	**0.15**

[1]WHO 2005 TEF: Van den Berg et al: Toxicological Sciences Advance Acces, 7 July 2006

Limits of quantification are defined on the base of blank level.

The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.

The value of the detection limit is mentioned as the actual value at the acquisition date.

Limit of detection is equal to LOQ according to Commision Regulation (EU) No 2017/644.

Measurement uncertainty is expressed as a double (k=2) relative standard deviation (RSD%), and corresponds to 95% confidence interval.

Estimation of uncertainty of each PCB congener is 30%, total WHO-TEQ and sum of PCB6 is 20%. These values were ensured by analyses of certified reference material under conditions of internal reproducibility.

Results marked "<" are lower than the limit of detection or quantification.

"Lowerbound" and "Upperbound" are levels defined in Regulation 2017/644 and EN 1948-4.

"Mediumbound" is level defined in Regulation 2017/644.

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Sample: Complete collagen

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Summary

Sample:	Complete collagen			
	Sum of dioxins [1]WHO-PCDD/F-TEQ	Sum of dioxin like-PCBs [1]WHO-PCB-TEQ	Sum of dioxins and dioxin like-PCBs [1]WHO-PCDD/F--PCB-TEQ	Sum of PCB28, PCB52, PCB101, PCB138, PCB153, PCB180 (ICES-6)
	[pg/g]	[pg/g]	[pg/g]	[ng/g]
"Lowerbound"	0	0	0	0
"Mediumbound"	0.002	0.00051	0.0025	0.075
"Upperbound"	**0.004**	0.001	**0.005**	**0.15**

[1]WHO 2005 TEF: Van den Berg et al: Toxicological Sciences Advance Acces, 7 July 2006

”Lowerbound” and ”Upperbound” are levels defined in Regulation 2017/644 and EN 1948-4.

”Mediumbound” is level defined in Regulation 2017/644.

Attachment no. 1 to the Certificate of Analysis for work order FP2501661

Sample: Complete collagen

ALS SAMPLE ID: **FP2501661/ 002**

Measurement results PAHs 4:

Sample:	Complete collagen		
Sample weight [g]:	5.326	Final extract volume [µl]:	1000
		Injection volume [µl]:	2
		Acquisition date [d/m/y]:	25.01.25
PAH	Result [µg/kg]	Limit of Detection [µg/kg]	Limit of Quantification [µg/kg]
Benzo[a]anthracene	< 0.28	0.028	0.28
Chrysene	< 0.47	0.047	0.47
Benzo[b]fluoranthene	< 0.56	0.056	0.56
Benzo[a]pyrene	< 0.19	0.019	0.19
Σ 4PAH -"Lowerbound"	0	-	-
Σ 4PAH -"Upperbound"	1.5	-	-

The limits of quantification are defined on the base of blank level.

The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.

The value of the detection limit is mentioned as the actual value at the acquisition date.

Measurement uncertainty is expressed as a double (k=2) relative standard deviation (RSD%), and corresponds to 95% confidence interval.

Estimation of uncertainty PAH is 30% for each PAH and 20% for summation parameters.

These values were ensured by analyses of certified reference material under conditions of internal reproducibility. Results marked "<" lower than the limit of detection or quantification.

Levels „Lowerbound" a „Upperbound" are defined in Regulation 2017/644 and EN 1948-4.

Sum of 4PAH and maximum levels are defined in Commission Regulation (EU) No 835/2011