



Test Report

Report No. A2230634229101002

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Executive Summary:

TEST REQUEST

CONCLUSION

<u>TEST REQUEST</u>	<u>CONCLUSION</u>
Regulation (EU) 2019/1021 on persistent organic pollutants (POPs)	
- Polybrominated Diphenyl Ethers (PBDEs)	PASS
- Perfluorooctane sulfonic acid (PFOS) and its derivatives	PASS
- Hexabromocyclododecane (HBCDD)	PASS
- Short Chain Chlorinated Paraffins (SCCPs)	PASS
- DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl)ethane)	PASS
- Chlordane	PASS
- Hexachlorocyclohexanes, including Lindane	PASS
- Dieldrin	PASS
- Endrin	PASS
- Heptachlor	PASS
- Endosulfan	PASS
- Chlordecone	PASS
- Aldrin	PASS
-	

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Regulation (EU) 2019/1021 on persistent organic pollutants (POPs)

Polybrominated Diphenyl Ethers (PBDEs)

Test Method: IEC 62321-6:2015; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	002	(mg/kg)	(mg/kg)
Tetrabromodiphenyl ether	N.D.	5	--
Pentabromodiphenyl ether	N.D.	5	--
Hexabromodiphenyl ether	N.D.	5	--
Heptabromodiphenyl ether	N.D.	5	--
Decabromodiphenyl ether	N.D.	5	--
Total	N.D.	--	500

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Perfluorooctane sulfonic acid (PFOS) and its derivatives

Test Method: CEN/TS 15968:2010*¹; Test Equipment: LC-MS-MS & GC-MS

<u>No.</u>	<u>Tested Item(s)</u>	<u>CAS No.</u>	<u>Result (mg/kg)</u>	<u>MDL (mg/kg)</u>	<u>Limit</u>
			002		(mg/kg)
1	Perfluorooctanesulfonic acid (PFOS)	1763-23-1	N.D.	0.010	--
2	Sodium perfluorooctane sulfonate (PFOS-Na)*	4021-47-0	N.D.	0.010	--
3	Perfluorooctanesulfonic acid, potassium salt (PFOS-K)*	2795-39-3	N.D.	0.020	--
4	Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)*	29457-72-5	N.D.	0.010	--
5	1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, magnesium salt (2:1) (PFOS-Mg)*	91036-71-4	N.D.	0.020	--
6	Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH ₄)*	29081-56-9	N.D.	0.010	--
7	Perfluorooctane sulfonate diethanolamine salt (PFOS-NH(OH) ₂)*	70225-14-8	N.D.	0.020	--
8	Perfluorooctanesulfonic acid, tetraethylammonium salt (PFOS-N(C ₂ H ₅) ₄)*	56773-42-3	N.D.	0.020	--

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<u>No.</u>	<u>Tested Item(s)</u>	<u>CAS No.</u>	<u>Result (mg/kg)</u> 002	<u>MDL (mg/kg)</u>	<u>Limit (mg/kg)</u>
9	Didecyl dimethyl ammonium perfluorooctane sulfonate (PFOS-DDA)*	251099-16-8	N.D.	0.020	--
10	Perfluoro-1-octanesulfonyl fluoride (PFOSF)*	307-35-7	N.D.	0.010	--
11	Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctanesulfonate	71463-74-6	N.D.	0.020	--
12	N-Ethylperfluoro-1-octanesulfonamide (N-Et-FOSA)	4151-50-2	N.D.	0.050	--
13	N-Methylperfluoro-1-octanesulfonamide (N-Me-FOSA)	31506-32-8	N.D.	0.050	--
14	2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol (N-Et-FOSE)	1691-99-2	N.D.	0.050	--
15	2-(N-Methylperfluoro-1-octanesulfonamido)-ethanol (N-Me-FOSE)	24448-09-7	N.D.	0.050	--
16	Perfluorooctane sulfonamide (PFOSA)	754-91-6	N.D.	0.010	--
17	Perfluorooctanesulfonamide lithium salt (1:1) (PFOSA-Li)*	76752-79-9	N.D.	0.010	--
18	Glycine, N-[(heptadecafluorooctyl)sulfonyl]- (FOSAA)	2806-24-8	N.D.	0.010	--
19	N-Methyl perfluorooctanesulfonamidoacetic acid (N-Me-FOSAA)	2355-31-9	N.D.	0.050	--
20	N-ethyl-N-[(heptadecafluorooctyl)sulphonyl]glycine (N-Et-FOSAA)	2991-50-6	N.D.	0.050	--
21	Total	--	N.D.	--	1000

Remark:

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- mg/kg = ppm = parts per million
- *Result(s) shown of the substance(s) is/ are converted from the result(s) of certain compound(s).
- According to Regulation (EU) 2019/1021 on persistent organic pollutants (POPs), Perfluorooctane sulfonic acid (PFOS) and its derivatives are defined as a class of chemicals. There is not an official list in the regulation. The conclusion is based on the tested chemicals.

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Hexabromocyclododecane (HBCDD)

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>CAS No.</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
	25637-99-4	002		
	3194-55-6			
Hexabromocyclododecane (HBCDD)	134237-50-6	N.D.	5	100
	134237-51-7			
	134237-52-8			

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million
- 'Hexabromocyclododecane (HBCDD)' means: Hexabromocyclododecane (HBCDD), 1,2,5,6,9,10-hexabromocyclododecane and its main diastereoisomers: -HBCDD, -HBCDD, -HBCDD

Short Chain Chlorinated Paraffins (SCCPs)

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS(NCI)

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
	002		
Short Chain Chlorinated Paraffins (SCCPs)	N.D.	100	1500

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

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DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl)ethane)

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane)	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Chlordane

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
Chlordane	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Hexachlorocyclohexanes, including Lindane

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
Hexachlorocyclohexanes, including Lindane	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

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Endosulfan

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	002	(mg/kg)	(mg/kg)
Endosulfan	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Chlordecone

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	002	(mg/kg)	(mg/kg)
Chlordecone	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Aldrin

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	002	(mg/kg)	(mg/kg)
Aldrin	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

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Mirex

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	002	(mg/kg)	(mg/kg)
Mirex	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Toxaphene

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	002	(mg/kg)	(mg/kg)
Toxaphene	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Pentachlorobenzene

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	002	(mg/kg)	(mg/kg)
Pentachlorobenzene	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

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Hexachlorobenzene

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	002	(mg/kg)	(mg/kg)
Hexachlorobenzene	N.D.	5	10

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Hexabromobiphenyl

Test Method: IEC 62321-6:2015; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	002	(mg/kg)	(mg/kg)

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Polychlorinated Naphthalenes (PCNs)

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
Polychlorinated Naphthalenes (PCNs)	002 N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Hexachlorobutadiene (HCBD)

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u>
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Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million
- The test result of Pentachlorophenol and its salts and esters is calculated by Pentachlorophenol.

Perfluorooctanoic acid (PFOA) and its salts & related substances

Test Method: CEN/TS 15968:2010*¹; Test Equipment: LC-MS-MS & GC-MS

No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			002		
1	Perfluorooctanoic acid (PFOA)	335-67-1	N.D.	0.010	--
2	Ammonium pentadecafluorooctanoate (APFO)*	3825-26-1	N.D.	0.010	--
3	Sodium perfluorooctanoate (PFOA-Na)*	335-95-5	N.D.	0.020	--
4	Potassium perfluorooctanoate (PFOA-K)*	2395-00-8	N.D.	0.020	--
5	Silver perfluorooctanoate (PFOA-Ag)*	335-93-3	N.D.	0.020	--
6	Perfluorooctanoyl fluoride (PFOA-F)*	335-66-0	N.D.	0.010	--
7	Lithium perfluorooctanoate (PFOA-Li)*	17125-58-5	N.D.	0.010	--
8	Cesium perfluorooctanoate (PFOA-Cs)*	17125-60-9	N.D.	0.020	--
9	Cobalt perfluorooctanoate (PFOA-Co)*	35965-01-6	N.D.	0.025	--
10	Chromium(III) perfluorooctanoate (PFOA-Cr)*	68141-02-6	N.D.	0.025	--
11	Perfluorooctanoic acid (PFOA) and its salts	-	N.D.	--	0.025
12	Methyl perfluorooctanoate (Me-PFOA)	376-27-2	N.D.	0.010	1
13	Ethyl perfluorooctanoate (Et-PFOA)	3108-24-5	N.D.	0.010	1
14	Perfluorooctyl iodide (PFOI)	507-63-1	N.D.	0.200	1
15	1H,1H,2H,2H-perfluoro-1-decanol (8:2 FTOH)	678-39-7	N.D.	0.200	1
16	1H,1H,2H,2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	N.D.	0.200	1
17	1H,1H,2H,2H-Perfluorodecanesulfonic Acid Sodium (8:2 FTS-Na)*	27619-96-1	N.D.	0.200	1
18	8:2 Fluorotelomer sulfonate ammonium salt (8:2 FTS-NH ₄)*	149724-40-3	N.D.	0.200	1

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<u>No.</u>	<u>Tested Item(s)</u>	<u>CAS No.</u>	<u>Result (mg/kg)</u>	<u>MDL (mg/kg)</u>	<u>Limit (mg/kg)</u>
			002		
19	1,1,2,2-Tetrahydroperfluorodecyl acrylate (8:2 FTAC)	27905-45-9	N.D.	0.200	1
20	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl ester (8:2 FTMA)	1996-88-9	N.D.	0.200	1
21	1H,1H,2H,2H-Perfluorodecyltriethoxysilane (PFSI)	101947-16-4	N.D.	0.200	1
22	Decane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-10-iodo- (8:2 FTI)	2043-53-0	N.D.	0.200	1
23	8:2 Fluorotelomer phosphate diester (8:2diPAP)	678-41-1	N.D.	0.200	1
24	Sodium bis(1H,1H,2H,2H-perfluorodecyl)phosphate (8:2diPAP-Na)*	114519-85-6	N.D.	0.200	1
25	Ammonium bis(1H,1H,2H,2H-perfluorodecyl)phosphate (8:2diPAP-NH ₄)*	93776-20-6	N.D.	0.200	1
26	Tetrabutylphosphonium 2H,2H-Perfluorodecanoate (H ₂ PFDA-P(C ₄ H ₉) ₄)	882489-14-7	N.D.	0.010	1
27	2H,2H,3H,3H-Perfluoroundecanoic acid (H ₄ PFUnA)	34598-33-9	N.D.	0.010	1
28	Potassium 3-(perfluorooctyl)propanoate (H ₄ PFUnA-K)*	83310-58-1	N.D.	0.020	1

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Remark:

- MDL = Method Detection Limit
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- mg/kg = ppm = parts per million
- *Result(s) shown of the substance(s) is/ are converted from the result(s) of certain compound(s).
- According to Regulation (EU) 2019/1021 on persistent organic pollutants (POPs), Perfluorooctanoic acid (PFOA) and its salts & related substances are defined as a class of chemicals. There is not an official list in the regulation. The conclusion is based on the tested chemicals.

Dicofol

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018*¹; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	002	(mg/kg)	(mg/kg)
Dicofol	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Perfluorohexane-1-sulphonic acid (PFHxS) and its salts & related substances

Test Method: CEN/TS 15968:2010*¹; Test Equipment: LC-MS-MS & GC-MS

<u>No.</u>	<u>Tested Item(s)</u>	<u>CAS No.</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
			002	(mg/kg)	(mg/kg)
1	Perfluorohexanesulfonic acid (PFHxS) 1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,	355-46-4	N.D.	0.010	--
2	5,5,6,6,6- tridecafluoro-, sodium salt (PFHxS-Na)*	82382-12-5	N.D.	0.020	--
3	Potassium perfluorohexane-1- sulphonate (PFHxS-K)*	3871-99-6	N.D.	0.020	--
4	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4, 5,5,6,6,6-tridecafluoro-, lithium salt(1:1) (PFHxS-Li)*	55120-77-9	N.D.	0.010	--
5	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4, 5,5,6,6,6-tridecafluoro-, zinc salt (PFHxS-Zn)*	70136-72-0	N.D.	0.025	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg) 002	MDL (mg/kg)	Limit (mg/kg)
6	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, gallium salt (9CI) (PFHxS-Ga)*	341035-71-0	N.D.	0.010	--
7	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, scandium(3+) salt (3:1) (PFHxS-Sc)*	350836-93-0	N.D.	0.010	--
8	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, neodymium(3+) salt (3:1) (PFHxS-Nd)*	41184-65-0	N.D.	0.010	--
9	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, yttrium(3+) salt (3:1) (PFHxS-Y)*	41242-12-0	N.D.	0.010	--
10	Cesium Perfluorohexanesulfonate (PFHxS-Cs)*	92011-17-1	N.D.	0.020	--
11	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, ammonium salt (1:1)(PFHxS-NH ₄)*	68259-08-5	N.D.	0.010	--
12	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts	--	N.D.	--	0.025
13	1-Hexanesulfonyl fluoride, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro- (PFHxSF)*	423-50-7	N.D.	0.010	--
14	1-Hexane-sulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro- (FHxSA)	41997-13-1	N.D.	0.010	--
15	N-methylperfluorohexanesulfonamide (MeFHxSA)	68259-15-4	N.D.	0.200	--
16	Perfluorohexane-1-sulphonic acid (PFHxS) related substances	--	N.D.	--	1

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million
- *Result(s) shown of the substance(s) is/ are converted from the result(s) of certain compound(s).

Sample/Part Description

No.	CTI Sample ID	Description
1	002	Silvery metal

Note:

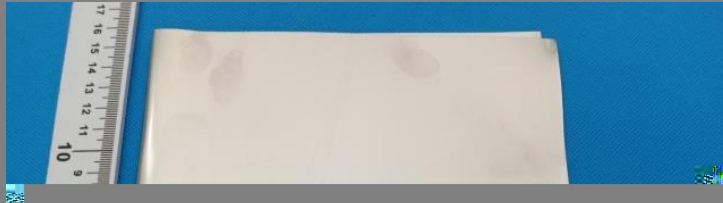
- *1 A () () C A .

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Photo(s) of the sample(s)



Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
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*** End of Report ***