Test Report

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Company Name shown on Report	YANGZHOU YANGJIE ELECTRONIC TECHNOLOGY CO., LTD.
Address	NO.6 WEST HEYE ROAD, HANJIANG DISTRICT, YANGZHOU, JIANGSU, CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant

Sample Name	Semiconductor component
Sample Received Date	Jul. 18, 2024
Testing Period	Jul. 18, 2024 to Jul. 24, 2024

Test Conducted:

As requested by the applicant. For details refer to next page(s)

Approved by Chen kaimin Date Jul. 30, 2024

Chen kaimin
Lab Manager

Test Report

Executive Summary:

TEST REQUEST	CONCLUSION
Regulation (EU) 2019/1021 on persistent organic pollutants (POPs)	
- Polybrominated Diphenyl Ethers (PBDEs)	**See test result(s)**
- Perfluorooctane sulfonic acid (PFOS) and its derivatives	**PASS**
- Hexabromocyclododecane (HBCDD)	**PASS**
- Short Chain Chlorinated Paraffins (SCCPs)	**PASS**
- Pentachlorobenzene	**PASS**
- Hexachlorobenzene	**PASS**
- Hexabromobiphenyl	**PASS**
- Polychlorinated Biphenyls(PCBs)	**PASS**
- Polychlorinated Naphthalenes (PCNs)	**PASS**
- Hexachlorobutadiene (HCBD)	**PASS**
- Pentachlorophenol and its salts and esters	**PASS**
- Perfluorooctanoic acid (PFOA) and its salts & related substances	**PASS**
- Perfluorohexane-1-sulphonic acid (PFHxS) and its salts & related substances	**PASS**

********** For further details, please refer to the following page(s) **********

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

▼Polybrominated Diphenyl Ethers (PBDEs)

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

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)
	001	
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

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

No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
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-$N(C_2H_5)_4$)*	56773-42-3	N.D.	0.020	--
9	Tetrabutylammonium perfluorooctanesulfonate (PFOS-$NH(C_{16}H_{36})$)*	111873-33-7	N.D.	0.015	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
10	Didecyl dimethyl ammonium perfluorooctane sulfonate (PFOS-DDA)*	251099-16-8	N.D.	0.020	--
11	Perfluoro-1-octanesulfonyl fluoride (PFOSF)*	307-35-7	N.D.	0.010	--
12	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	--
13	Tetramethylammonium perfluorooctane sulfonate (PFOS-$C_4H_{12}N$)*	56773-44-5	N.D.	0.010	--
14	Perfluorooctanesulfonic acid diethylamine salt (PFOS-$C_4H_{11}N$)*	2205029-08-7	N.D.	0.010	--
15	Triethylammonium perfluorooctane sulfonate (PFOS-$C_6H_{15}N$)*	54439-46-2	N.D.	0.010	--
16	N,N-Dibutyl-N-methylbutan-1-aminium heptadecafluorooctane-1-sulfonate (PFOS-$C_{13}H_{30}N$)*	124472-68-0	N.D.	0.015	--
17	N,N,N-Tripropylpentan-1-aminium heptadecafluorooctane-1-sulfonate (PFOS-$C_{14}H_{32}N$)*	56773-56-9	N.D.	0.015	--
18	Tetrabutylphosphonium perfluorooctane sulfonate (PFOS-$C_{16}H_{36}P$)*	2185049-59-4	N.D.	0.015	--
19	Heptyldimethyl{2-[(2-methylprop-2-enoyl)oxy]ethyl}azanium heptadecafluorooctane-1-sulfonate (PFOS-$C_{15}H_{30}NO_2$)*	1203998-97-3	N.D.	0.015	--
20	Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with perfluoro-1-octanesulfonic acid (1:1) (PFOS-$C_{20}H_{26}I$)*	213740-80-8	N.D.	0.020	--
21	Diphenyl(2,4,6-trimethylphenyl)sulfonium perfluoro-1-octanesulfonate (PFOS-$C_{21}H_{21}S$)*	258341-99-0	N.D.	0.020	--
22	1-Hexadecylpyridinium perfluoro-1-octanesulfonate (PFOS-$C_{21}H_{38}N$)*	334529-63-4	N.D.	0.020	--
23	Perfluorooctane sulfonic anhydride (PFOSAN)*	423-92-7	N.D.	0.020	--
24	N-Ethylperfluoro-1-octanesulfonamide (N-Et-FOSA)	4151-50-2	N.D.	0.050	--
25	N-Methylperfluoro-1-octanesulfonamide (N-Me-FOSA)	31506-32-8	N.D.	0.050	--
26	2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol (N-Et-FOSE)	1691-99-2	N.D.	0.050	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
27	2-(N-Methylperfluoro-1-octanesulfonamido)-ethanol (N-Me-FOSE)	24448-09-7	N.D.	0.050	--
28	Perfluorooctane sulfonamide (PFOSA)	754-91-6	N.D.	0.010	--
29	Perfluorooctanesulfonamide lithium salt (1:1) (PFOSA-Li)*	76752-79-9	N.D.	0.010	--
30	Perfluorooctanesulfonamide Sodium salt (1:1) (PFOSA-Na)*	76752-78-8	N.D.	0.010	--
31	Perfluorooctanesulfonamide Potassium salt (1:1) (PFOSA-K)*	76752-70-0	N.D.	0.010	--
32	Perfluorooctanesulfonamide Ammonium salt (1:1) (PFOSA-NH_4)*	76752-72-2	N.D.	0.010	--
33	Heptadecafluorooctane-1-sulphonamide, compound with triethylamine (1:1) (PFOSA-$C_6H_{15}N$)*	76752-82-4	N.D.	0.010	--
34	Glycine, N-[(heptadecafluorooctyl)sulfonyl]-(FOSAA)	2806-24-8	N.D.	0.010	--
35	N-[(Perfluorooctyl)sulfonyl]glycine potassium salt (1:1) (FOSAA-K)*	75260-69-4	N.D.	0.010	--
36	N-[(Perfluorooctyl)sulfonyl]glycine sodium salt (1:1) (FOSAA-Na)*	115716-87-5	N.D.	0.010	--
37	N-[(Perfluorooctyl)sulfonyl]glycinate (FOSAA (anion))*	909405-47-6	N.D.	0.010	--
38	N-Methyl perfluorooctanesulfonamidoacetic acid (N-Me-FOSAA)	2355-31-9	N.D.	0.050	--
39	Potassium N-((heptadecafluorooctyl)sulphonyl)-N-methylglycinate (N-Me-FOSAA-K)*	70281-93-5	N.D.	0.050	--
40	2-(N-Methylperfluorooctanesulfonamido) acetate (N-Me-FOSAA (anion))*	909405-48-7	N.D.	0.050	--
41	N-ethyl-N-[(heptadecafluorooctyl) sulphonyl]glycine (N-Et-FOSAA)	2991-50-6	N.D.	0.050	--
42	Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]-, potassium salt (N-Et-FOSAA-K)*	2991-51-7	N.D.	0.050	--
43	Sodium 2-(N-ethylperfluorooctanesulfonamido) acetate (N-Et-FOSAA-Na)*	3871-50-9	N.D.	0.050	--
44	Ammonium 2-(N-ethylperfluorooctanesulfonamido) acetate (N-Et-FOSAA-NH_4)*	2991-52-8	N.D.	0.050	--

No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
45	2-(N-Ethyl-perfluorooctanesulfonamido)acetate (N-Et-FOSAA (anion))*	909405-49-8	N.D.	0.050	--
46	Bis[2-[N-ethyl(heptadecafluorooctane sulphonyl)amino]ethyl]hydrogen phosphate (EtFOSEdiPAPs)	2965-52-8	N.D.	0.050	--
47	Total	--	N.D.	--	1000

Remark:

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- 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).
- 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.

▼**Hexabromocyclododecane (HBCDD)**

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

Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
		001		
Hexabromocyclododecane (HBCDD)	25637-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8	N.D.	5	100

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: α-HBCDD, β-HBCDD, γ-HBCDD

▼**Short Chain Chlorinated Paraffins (SCCPs)**

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

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	001		
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

▼**Pentachlorobenzene**

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

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	001		
Pentachlorobenzene	N.D.	5	N.D.

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

▼**Hexachlorobenzene**

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

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	001		
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

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	001		
Hexabromobiphenyl	N.D.	5	N.D.

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

▼**Polychlorinated Biphenyls(PCBs)**

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

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	001		
Polychlorinated Biphenyls (PCBs)	N.D.	5	N.D.

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

▼**Polychlorinated Naphthalenes (PCNs)**

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

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	001		
Polychlorinated Naphthalenes (PCNs)	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

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	001		
Hexachlorobutadiene (HCBD)	N.D.	20	N.D.

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

▼**Pentachlorophenol and its salts and esters**

Test Method: Refer to ISO 17070:2015*[1]; Test Equipment: GC-MS

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	001		
Pentachlorophenol and its salts and esters	N.D.	1	5

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)
			001		
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	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
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	N,N,N-Triethylethanaminium perfluorooctanoate (PFOA-NH(C_8H_{19}))*	98241-25-9	N.D.	0.015	--
12	Tetrapropylammonium perfluorooctanoate (PFOA-NH($C_{12}H_{27}$))*	277749-00-5	N.D.	0.015	--
13	Perfluorooctanoate N,N,N-Trimethylmethanaminium (PFOA-NH(C_4H_{11}))*	32609-65-7	N.D.	0.015	--
14	Pentadecafluorooctanoic acid-piperazine (2/1) (PFOA-NH($C_4H_{10}N$))*	423-52-9	N.D.	0.015	--
15	Potassium pentadecafluorooctanoate-water (1/1/2) (PFOA-K(H_2O)$_2$)*	98065-31-7	N.D.	0.010	--
16	Perfluorooctanoic acid compd. with ethanamine (1:1) (PFOA-C_2H_7N)*	1376936-03-6	N.D.	0.010	--
17	Pentadecafluorooctanoic acid-pyridine (1/1) (PFOA-C_5H_5N)*	95658-47-2	N.D.	0.010	--
18	Pentadecafluorooctanoic acid-1-phenylpiperazine (1:1) (PFOA-$C_{10}H_{14}N_2$)*	1514-68-7	N.D.	0.015	--
19	N,N,N-Trimethyloctan-1-aminium pentadecafluorooctanoate (PFOA-$C_{11}H_{26}N$)*	927835-01-6	N.D.	0.015	--
20	Pentadecafluorooctanoate (anion) (PFOA (anion))*	45285-51-6	N.D.	0.010	--
21	**Perfluorooctanoic acid (PFOA) and its salts**	-	N.D.	--	0.025
22	Perfluorooctanoic Anhydride (PFOAA)*	33496-48-9	N.D.	0.020	1
23	Methyl perfluorooctanoate (Me-PFOA)	376-27-2	N.D.	0.010	1
24	Ethyl perfluorooctanoate (Et-PFOA)	3108-24-5	N.D.	0.010	1
25	Perfluorooctyl iodide (PFOI)	507-63-1	N.D.	0.200	1
26	1H,1H,2H,2H-perfluoro-1-decanol (8:2 FTOH)	678-39-7	N.D.	0.200	1
27	1H,1H,2H,2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	N.D.	0.200	1

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
28	1H,1H,2H,2H-Perfluorodecanesulfonic Acid Sodium (8:2 FTS-Na)*	27619-96-1	N.D.	0.200	1
29	Potassium 2-(perfluorooctyl)ethane-1-sulfonate (8:2 FTS-K)*	438237-73-1	N.D.	0.200	1
30	8:2 Fluorotelomer sulfonate ammonium salt (8:2 FTS-NH_4)*	149724-40-3	N.D.	0.200	1
31	2-(Perfluorooctyl)ethane-1-sulfonate (8:2 FTS (anion))*	481071-78-7	N.D.	0.200	1
32	1,1,2,2-Tetrahydroperfluorodecyl acrylate (8:2 FTAC)	27905-45-9	N.D.	0.200	1
33	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
34	1H,1H,2H,2H-Perfluorodecyltriethoxysilane (PFSI)	101947-16-4	N.D.	0.200	1
35	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
36	8:2 Fluorotelomer phosphate diester (8:2diPAP)	678-41-1	N.D.	0.200	1
37	Sodium bis(1H,1H,2H,2H-perfluorodecyl)phosphate (8:2diPAP-Na)*	114519-85-6	N.D.	0.200	1
38	Ammonium bis(1H,1H,2H,2H-perfluorodecyl)phosphate (8:2diPAP-NH_4)*	93776-20-6	N.D.	0.200	1
39	Bis(2-hydroxyethyl)ammonium bis((perfluorooctyl)ethyl) hydrogen phosphate (8:2diPAP-$C_4H_{11}NO_2$)*	57677-97-1	N.D.	0.200	1
40	8:2 Fluorotelomer phosphate diester ion (1-) (8:2diPAP (anion))*	1411713-91-1	N.D.	0.200	1
41	Tetrabutylphosphonium 2H,2H-Perfluorodecanoate (H_2PFDA-P(C_4H_9)$_4$)	882489-14-7	N.D.	0.010	1
42	2H,2H,3H,3H-Perfluoroundecanoic acid (H_4PFUnA)	34598-33-9	N.D.	0.010	1
43	Potassium 3-(perfluorooctyl) propanoate (H_4PFUnA-K)*	83310-58-1	N.D.	0.020	1
44	Lithium 3-(perfluorooctyl) propanoate (H_4PFUnA-Li)*	67304-23-8	N.D.	0.010	1
45	2H,2H-Perfluorodecanoate (H_2PFDA)	27854-31-5	N.D.	0.010	1

No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
46	1-Decene,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-(PFOE)	21652-58-4	N.D.	0.200	1
47	Perfluorooctylethyltrichlorosilane (FDTS)	78560-44-8	N.D.	0.200	1
48	Perfluorooctylethyltrimethoxysilane (FDTMOS)	83048-65-1	N.D.	0.200	1
49	Bis[2-(perfluorodecyl)ethyl] Phosphate (10:2 diPAP)	1895-26-7	N.D.	0.200	1
50	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl dihydrogen phosphate (8:2 monoPAPS)	57678-03-2	N.D.	0.200	1
51	2H-Perfluoro-2-decenoic acid (8:2 FTUCA)	70887-84-2	N.D.	0.010	1
52	Alcohols, C8-14, gamma-omega-perfluoro (C8-14-PFEtOH)	68391-08-2	N.D.	0.200	1
53	1H,1H,2H,2H-Perfluorodecyl acetate (8:2FTOAc)	37858-04-1	N.D.	0.200	1
54	**Perfluorooctanoic acid (PFOA) related substances**	-	N.D.	--	1

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), 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.

▼**Perfluorohexane-1-sulphonic acid (PFHxS) 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)
			001		
1	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	N.D.	0.010	--
2	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6- 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	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
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	--
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	1,1,2,2,3,3,4,4,5,5,6,6,6-Tridecafluorohexane-1-sulphonyl chloride (PFHxS-Cl)*	55591-23-6	N.D.	0.020	--
13	Perfluorohexylsulfonate (PFHxS(anion))*	108427-53-8	N.D.	0.010	--
14	Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:2) (PFHxS-$S_3(C_6H_5)_4(C_6H_4)_2$)*	421555-73-9	N.D.	0.020	--
15	Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic (PFHxS-$I(C_6H_4)_2(C_5H_{11})_2$)*	421555-74-0	N.D.	0.020	--
16	Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-$S(C_6H_4)_3(C_4H_9)_3$)*	425670-70-8	N.D.	0.020	--
17	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with N,N-diethylethanamine (1:1) (PFHxS-$N(C_2H_5)_3$)*	72033-41-1	N.D.	0.020	--
18	Iodonium, bis[(1,1-dimethylethyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1) (9CI) (PFHxS-$I(C_6H_4)_2(C_4H_9)_2$)*	866621-50-3	N.D.	0.020	--

Test Report

No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
19	Sulfonium, (4-methylphenyl)diphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S(C_6H_5)$_2$$C_7H_7$)*	910606-39-2	N.D.	0.020	--
20	Sulfonium, [4-[(2-methyl-1-oxo-2-propen-1-yl)oxy]phenyl]diphenyl-,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S(C_6H_5)$_2$$C_{10}H_9O_2$)*	911027-68-4	N.D.	0.020	--
21	Sulfonium, [4-[(2-methyl-1-oxo-2-propenyl)oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1), polymer with 2-ethyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate,3-hydroxytricyclo[3.3.1.13,7]dec-1-yl 2-methyl-2-propenoate and tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate*	911027-69-5	N.D.	0.020	--
22	Dibenzo[k,n][1,4,7,10,13] tetraoxathiacyclopentadecinium, 19-[4-(1,1-dimethylethyl)phenyl]-6,7,9,10,12,13-hexahydro-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S$C_{28}H_{31}O_4$)*	928049-42-7	N.D.	0.020	--
23	Phosphonium, triphenyl(phenylmethyl)-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-P(C_6H_5)$_3$$C_7H_7$)*	1000597-52-3	N.D.	0.020	--
24	1-Butanaminium, N,N,N-tributyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (PFHxS-N(C_4H_9)$_4$)*	108427-54-9	N.D.	0.020	--
25	Ethanaminium,N,N,N-triethyl-,salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1) (PFHxS-N(C_2H_5)$_4$)*	108427-55-0	N.D.	0.020	--
26	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with pyrrolidine (1:1) (PFHxS-NC_4H_9)*	1187817-57-7	N.D.	0.020	--
27	Sulfonium, triphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S(C_6H_5)$_3$)*	144116-10-9	N.D.	0.020	--
28	Quinolinium,1-(carboxymethyl)-4-[2-[4-[4-(2,2-diphenylethenyl)phenyl]-1,2,3,3a,4,8b-hexahydrocyclopent[b]indol-7-yl]ethenyl]-,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-$C_{44}H_{37}N_2O_2$)*	1462414-59-0	N.D.	0.020	--

Test Report

No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
29	Iodonium, diphenyl-,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-I(C_6H_5)$_2$)*	153443-35-7	N.D.	0.020	--
30	Methanaminium,N,N,N-trimethyl-,salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1) (PFHxS-N(CH_3)$_4$)*	189274-31-5	N.D.	0.020	--
31	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with 2-methyl-2-propanamine (1:1) (PFHxS-NH_2(CH_3)$_3$)*	202189-84-2	N.D.	0.020	--
32	Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-I(C_6H_4)$_2$(C_4H_9)$_2$)*	213740-81-9	N.D.	0.020	--
33	Sulfonium, bis(4-methylphenyl)phenyl-,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S(C_7H_7)$_2C_6H_5$)*	341548-85-4	N.D.	0.020	--
34	Ethanaminium, N-[4-[[4-(diethylamino)phenyl][4-(ethylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-ethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-($NC_{10}H_{14}$)$_3C_5H_4$)*	1310480-24-0	N.D.	0.020	--
35	Methanaminium, N-[4-[[4-(dimethylamino)phenyl][4-(ethylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-methyl-,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-(NC_8H_{10})$_2C_{13}H_{12}$)*	1310480-27-3	N.D.	0.020	--
36	Methanaminium, N-[4-[[4-(dimethylamino)phenyl][4-(phenylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-methyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-(NC_8H_{10})$_2C_{17}H_{12}$)*	1310480-28-4	N.D.	0.020	--
37	Beta-Cyclodextrin, compd. with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid ion(1-)(1:1) (PFHxS-$C_{42}H_{70}O_{35}$)*	1329995-45-0	N.D.	0.020	--
38	Gamma-Cyclodextrin, compd. with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid ion(1-)(1:1) (PFHxS-$C_{48}H_{80}O_{40}$)*	1329995-69-8	N.D.	0.020	--

Test Report

No.	Tested Item(s)	CAS No.	Result (mg/kg) 001	MDL (mg/kg)	Limit (mg/kg)
39	Tridecafluorohexanesulphonic acid, compound with 2,2'-iminodiethanol (1:1) (PFHxS-NH($C_2H_5O)_2$)*	70225-16-0	N.D.	0.020	--
40	**Perfluorohexane-1-sulphonic acid (PFHxS) and its salts**	--	N.D.	--	0.025
41	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	--
42	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	--
43	N-methylperfluorohexanesulfonamide (MeFHxSA)	68259-15-4	N.D.	0.200	--
44	**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	001	Black body(Tested as a whole)

Remark:

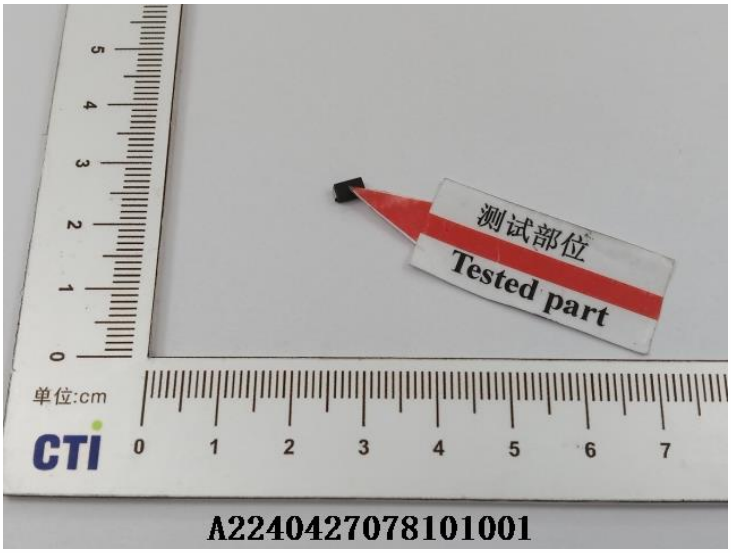
- The sample(s) was tested as a whole, because it's impossible to disassemble or separate it by current equipment and technology.The result(s) shown on this report may be different from the content of any homogeneous material.
- **The test result(s) of this report is/are presented in reference to the result(s) that reported in A2240427078101001R1.**

Note:

- **"*1" indicates the method(s) is (are) not in CNAS accreditation scope.**
  This testing report added "Appendix" based on the original report of No. A224042707810100101.This testing report displaces the original one which was invalid since the date of this testing report released.

Test Report

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. Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019 / CNAS-GL015:2022;
5. Without written approval of CTI, this report can't be reproduced except in full;
6. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

*** End of Report ***

Appendix

Client Reference Information

R-1、 A-405、 DO-41、 DO-15、 DO-15L、 DO-201AD、 DO-201AE、 R-6、 SMA-W、 YJ-41、 2KBJ、 4KBJ、 6KBJ、PB、ABS、 D3K、 DBS、DB、DBLS、 DBL、GBP、 GBU、JA、JB、JC、MBLS、 MBS、 YBS2、YBS3、 YBS3mini、YBS6、 YBS2G、 KBP、KBU、 KBL、 TSB、 GBPC (W)、GBPC、 BR-W、 BR、 KBPC-W、KBPC25/35/50、 KBPC1、 KBPC6、 KBPC8、 BR-L、 SKBPC、 MT35-A、 RS2、 SBR25、 M130、 M140、 MT、 MT-B、 PTVS、S25VB、S35VB、SMA、SMB、SMC、SOD123FL、 SOD323FL、SOD123HE、SOD323HE、SMAF、SMBF、SMG、SME、TO-277、SOD-323S、DO-218、 TO-263、 TO-263L、 TO-263-6L、TO-252、TO-220AB、 TO-220AC、ITO-220AB、 ITO-220AC、 R6、 TO-247、 TO-247AB、 TO-247AC、TO-247Plus、 TO-247-4L、 TO-247-2L、 GFO19、 GF020、 GF023、 GF025、 GF030K、 GF030U、GF040、GF040C、GF040H、GFS、GF009、SOT-223、SOT-89、TOLL、PDFN5060、 PDFN5060-8L、TO-220、 TO-220F、TO-251S、TO-92、TO-247AD、 STO-220、 SOT-23-6L、SOT-23、 SOT-363、SOT-323、SOT-523、 SOT-563、SOT-723、SOT-223、SOT-89、SOD-123、SOD-323、SOD-523、 SOP-8、 SOT23-3L、SOT-353、SOT-553、SOT-343、 SOD-882、 MFN-9-1、 SOP-7、 SOD-723、 DFN1006-2L、DFN1006-3L、 DFN2710-10L、 DFN2510-10L、DFN3333、DFN2030-6、DFN2020、 DFN2020-6L、DFN5060-8L、DFN2020-3L、DFN2030-8L、DFN0603-2L、DFN1610-2L、 DFN2510、 QFN6060-48L、 QFN4040-20L、 QFN3030-16L、QFN6050-10L

Statement:

1. The Appendix Information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.
2. The Appendix Information is/are the supplement(s) for the Report A224042707810100101R1.