Test Report

No.: SHAEC26008402601 **Date:** Apr 08, 2026

Client Name: JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO.,LTD

Client Address: 13TH FLOOR,C BLOCK,TENGFEI BUILDING,YAN CHUANG YUAN,NANJING AREA OF CHINA (JIANGSU) PILOT FREE TRADE ZONE

Sample Name:	Semiconductor device
Model No.:	SOT-23
Client Ref. Information:	DFN、PDFN、SOD-123/323/523/723/923/123FL、SOP8/14/16/18/20/24、SOT-23（-XL）/89（-XL）/143/223/323/343/353/363/523/553/563/723、TO-92/92L/92S/92MOD/126/220（-XL）/220A/220F（-XL）/227/247/251/251S/252（-XL）/263/277/3P、TSSOP8、FBP、CSP、QFN、TSOT、WBFBP、WBHFBP、MSOP8、ESOP8、DIP8/14/16/18、SOP8PP、SOP10、TSSOP14、ETSSOP16、WBLGA6×6-44L、6GBJ、ABS、DB、DBS、GBJ、GBL、GBP、GBU、JBF、JBSL、KBL、KBP、KBU、KBJ、MBF、MBS、SMA、SMAF、SMAG、SMAJ、SMB、SMBF、SMBG、SMBJ、SMC、SMCG、SMD、R-1、R-6、A-405、DO-15、DO-27、DO-41、UMSB、SOD-123HE、TO-220F-B、TO-220-2L、TO-220F-2L、TO-247-3L、TO-247-2L、4GBJ、D3K、TO-92K/126K/220AK/220BK/220CK/220FK/262K/263K/3PK/247K/252-2LK、SOT-223-3LK、SOT-23-3LK、SOT-89K

The above sample(s) and information were provided by the client.

SGS Job No.:	SHP26-010251
Sample Receiving Date:	Apr 01, 2026
Testing Period:	Apr 01, 2026 ~ Apr 08, 2026
Test Requested:	Select test(s) as requested by the client.
Test Method(s):	Please refer to next page(s).
Test Result(s):	Please refer to next page(s).

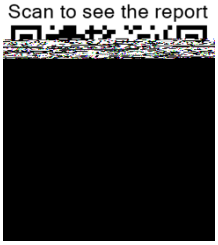
Test Requirement	Conclusion
European Regulation POPs (EU) 2019/1021 Annex I– Alkanes C_{10}-C_{13}, chloro (short chain-chlorinated paraffins) (SCCPs)	Pass
European Regulation POPs (EU) 2024/2570 amending Regulation (EU) 2019/1021 Annex I–Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD)	Pass

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Sue Sheng

Sue Sheng
Approved Signatory

Scan to see the report



Test Requirement	Conclusion
European Regulation POPs (EU) 2025/718 amending Regulation (EU) 2019/1021 Annex I - Perfluorooctanoic acid (PFOA) and its salts, PFOA-related compounds, Perfluorooctane sulfonic acid (PFOS) and its salts, PFOS-related compounds	Pass
European Regulation POPs (EU) 2023/1608 amending Regulation (EU) 2019/1021 Annex I-PFHxS, its salts and PFHxS related compounds	Pass
European Regulation POPs (EU) 2019/1021 Annex I–Halogenated compounds	Pass
European Regulation POPs (EU) 2025/843 amending Regulation (EU) 2019/1021 Annex I -UV-328	Pass
European Regulation POPs (EU) 2025/1930 amending Regulation (EU) 2019/1021 Annex I - Dechlorane Plus (DP)	Pass

Test Result(s):

Test Part Description：

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	SHA26-0084026-0001.C001	Black solid with silvery metal

Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%
(2) MDL = Method Detection Limit
(3) ND = Not Detected (< MDL)
(4) "-" = Not Regulated

European Regulation POPs (EU) 2019/1021 Annex I– Alkanes C_{10}-C_{13}, chloro (short chain-chlorinated paraffins) (SCCPs)

Test Method: With reference to ISO 22818:2021, analysis was performed by GC-NCI-MS.

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
Alkanes,C_{10}-C_{13}, chloro (short chain-chlorinated paraffins) (SCCPs)	85535-84-8 and others	1500	mg/kg	50	ND
Conclusion					**Pass**

European Regulation POPs (EU) 2024/2570 amending Regulation (EU) 2019/1021 Annex I– Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD)

Test Method: SGS In-House method, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
Hexabromocyclododecane (HBCDD) and its main diastereoisomers (α-HBCDD, β-HBCDD, γ-HBCDD)	134237-50-6 /134237-51-7 /134237-52-8 /25637-99-4 /3194-55-6	75	mg/kg	20	ND
Conclusion					**Pass**

Notes:

(1) The exemptions laid down shall be reviewed and assessed by the Commission by 1 January 2026.

European Regulation POPs (EU) 2025/718 amending Regulation (EU) 2019/1021 Annex I - Perfluorooctanoic acid (PFOA) and its salts, PFOA-related compounds, Perfluorooctane sulfonic acid (PFOS) and its salts, PFOS-related compounds

Test Method: Modified EN 17681-1:2025, analysis was performed by LC-MS or LC-MS/MS and GC-MS or GC-MS/MS.

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
PFOS, its salts					
Perfluorooctane sulfonic acid (PFOS), its salts^	1763-23-1	0.025	mg/kg	0.010	ND
PFOS-related compounds					
N-ethylperfluoro-1-octanesulfonamide (N-EtFOSA)	4151-50-2	-	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide (N-MeFOSA)	31506-32-8	-	mg/kg	0.010	ND
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (N-EtFOSE)	1691-99-2	-	mg/kg	0.010	ND
2-(N-methylperfluoro- 1-octanesulfonamido) -ethanol (N-MeFOSE)	24448-09-7	-	mg/kg	0.010	ND
Perfluorooctane sulfonamide (PFOSA), its salts^	754-91-6	-	mg/kg	0.010	ND
Perfluorooctane sulfonamidoacetic Acid (FOSAA), its salts^	2806-24-8	-	mg/kg	0.010	ND
N-Methylperfluoro-1-octanesulfonamidoacetic Acid (N-MeFOSAA), its salts^	2355-31-9	-	mg/kg	0.010	ND
N-Ethylperfluorooctane sulfonamidoacetic Acid (N-EtFOSAA), its salts^	2991-50-6	-	mg/kg	0.010	ND
2-(N-ethylperfluorooctanesulfamido) ethyl acrylate (EtFOSAC)	423-82-5	-	mg/kg	0.200	ND
Sum of PFOS-related compounds	-	1	mg/kg	-	ND
PFOA, its salts					
Perfluorooctanoic acid (PFOA), its salts^	335-67-1	0.025	mg/kg	0.010	ND
PFOA-related compounds					
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS), its salts^	39108-34-4	1	mg/kg	0.010	ND
Methyl perfluorooctanoate (Me-PFOA)	376-27-2	1	mg/kg	0.200	ND
Ethyl perfluorooctanoate (Et-PFOA)	3108-24-5	1	mg/kg	0.200	ND
1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)	27905-45-9	1	mg/kg	0.100	ND
1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)	1996-88-9	1	mg/kg	0.100	ND
Perfluoro-1-iodooctane (PFOI)	507-63-1	1	mg/kg	0.200	ND
2H,2H-Perfluorodecane Acid (8:2 FTCA), its salts^	27854-31-5	1	mg/kg	0.010	ND

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH)	678-39-7	1	mg/kg	0.100	ND
1-Iodo-1H,1H,2H,2H-perfluorodecane (8:2 FTI)	2043-53-0	1	mg/kg	0.100	ND
1H,1H,2H,2H-Perfluorodecyltriethoxysilane (8:2 FTSi(OC_2H_5)$_3$)	101947-16-4	1	mg/kg	0.100	ND
bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl) hydrogen phosphate (8:2 diPAP) , its salts ^	678-41-1	1	mg/kg	0.010	ND
2H,2H,3H,3H-Perfluoroundecanoic Acid (8:3 FTCA), its salts^	34598-33-9	1	mg/kg	0.010	ND
1H,1H,2H-Heptadecafluoro-1-decene (PFDE)	21652-58-4	1	mg/kg	0.100	ND
3-Perfluoroheptyl propanoic acid (7:3 FTCA)	812-70-4	1	mg/kg	0.010	ND
1H,1H,2H,2H-Perfluorodecyltrichlorosilane (8:2 FTSiCl_3)/ 1H,1H,2H,2H-Perfluorodecyltrimethoxysilane (8:2 FTSi(OCH_3)$_3$)	78560-44-8 /83048-65-1	1	mg/kg	0.100	ND
2H-Perfluoro-2-decenoic acid (8:2 FTUCA)	70887-84-2	1	mg/kg	0.010	ND
6:8 Perfluorophosphinic acid (6:8 PFPi)	610800-34-5	1	mg/kg	0.010	ND
8:8 Perfluorophosphinic acid (8:8 PFPi), its salts^	40143-79-1	1	mg/kg	0.010	ND
1H,1H,2H,2H-perfluorodecyl acetate (8:2 FTOAc)	37858-04-1	1	mg/kg	0.100	ND
8:2 Fluorotelomer phosphate monoester (8:2 monoPAP), its salts^	57678-03-2	1	mg/kg	0.100	ND
1H,1H,2H,2H-Perfluoro-1-dodecanol (10:2 FTOH)	865-86-1	1	mg/kg	0.100	ND
1H,1H,2H,2H-perfluorotetradecan-1-ol (12:2 FTOH)	39239-77-5	1	mg/kg	0.100	ND
1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2 FTS), its salts^	120226-60-0	1	mg/kg	0.100	ND
10:2 Fluortelomerphosphatediester (10:2 diPAP), its salts^	1895-26-7	1	mg/kg	0.100	ND
2H-Perfluoro-2-dodecenoic acid (10:2 FTUCA)	70887-94-4	1	mg/kg	0.010	ND
2-Perfluorodecyl ethanoic acid (10:2 FTCA)	53826-13-4	1	mg/kg	0.010	ND
10:2 Fluortelomerphosphatemonoester (10:2 monoPAP), its salts^	57678-05-4	1	mg/kg	0.100	ND
1H,1H,2H,2H-Perfluorododecylacrylate (10:2 FTA)	17741-60-5	1	mg/kg	0.100	ND
1H,1H,2H,2H-Perfluorododecyl methacrylate (10:2 FTMA)	2144-54-9	1	mg/kg	0.100	ND

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
1,1,2,2-Tetrahydroperfluorododecyl iodide (10:2 FTI)	2043-54-1	1	mg/kg	0.100	ND
1H,1H,2H,2H-Perfluorotetradecyl iodide (12:2 FTI)	30046-31-2	1	mg/kg	0.100	ND
Perfluorodecyl iodide (PFDI)	423-62-1	1	mg/kg	0.100	ND
Perfluorododecyl iodide (PFDoDI)	307-60-8	1	mg/kg	0.100	ND
Sum of PFOA-related compounds	-	1	mg/kg	-	ND
Conclusion					**Pass**

Notes:

(1) According to Regulation (EU) 2025/718 amending Regulation (EU) 2019/1021 Annex I, the concentrations of PFOS or any of its salts equal to or below 0,025 mg/kg (0,0000025 % by weight) and all PFOS-related compounds equal to or below 1 mg/kg (0,0001 % by weight) where they are present in substances, mixtures or in articles. Date of applicability: From 3 December 2025.

(2) ^=Substances refer to its salts/derivative listed in below table.

Substance Name	**CAS No.**
PFOS, its salts & derivatives	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1
Potassium Perfluorooctanesulfonate (PFOS-K)	2795-39-3
Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	29457-72-5
Sodium perfluorooctanesulfonate (PFOS-Na)	4021-47-0
Ammonium perfluorooctanesulfonate (PFOS-NH_4)	29081-56-9
Perfluorooctane sulfonate diethanolamine salt (PFOS-$NH_2(C_2H_4OH)_2$)	70225-14-8
Perfluorooctanesulfonic acid,tetraethylammonium salt (PFOS-$N(C_2H_5)_4$)	56773-42-3
N-decyl-N,N-dimethyldecan-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-$N(C_{10}H_{21})_2(CH_3)_2$)	251099-16-8
TetrabutylAmmonium perfluorooctanesulfonate (PFOS-$N(C_4H_9)_4$)	111873-33-7
Perfluorooctane Sulfonyl fluoride (PFOS-F)	307-35-7
Magnesium bis(heptadecafluorooctanesulphonate) (PFOS-Mg)	91036-71-4
Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctanesulfonate	71463-74-6
Perfluorooctanesulfonate	45298-90-6
Triethylammonium perfluorooctane sulfonate (PFOS-$NH(C_2H_5)_3$)	54439-46-2
Tetramethylammonium perfluorooctane sulfonate (PFOS-$N(CH_3)_4$)	56773-44-5
N,N,N-Tripropylpentan-1-aminium heptadecafluorooctane-1-sulfonate (PFOS-$N(C_3H_7)_3(C_5H_{11})$)	56773-56-9
N,N-Dibutyl-N-methylbutan-1-aminium heptadecafluorooctane-1-sulfonate (PFOS-$N(C_4H_9)_3(CH_3)$)	124472-68-0
Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with perfluoro-1-octanesulfonic acid (1:1)	213740-80-8
Diphenyl(2,4,6-trimethylphenyl)sulfonium perfluoro-1-octanesulfonate	258341-99-0
1-Hexadecylpyridinium perfluoro-1-octanesulfonate	334529-63-4

N,N,N-Triethyldecan-1-aminium heptadecafluorooctane-1-sulfonate	773895-92-4
Tetrabutylphosphonium perfluorooctane sulfonate (PFOS-P (C_4H_9)$_4$))	2185049-59-4
Perfluorooctanesulfonic acid diethylamine salt (PFOS-$C_4H_{11}N$)	2205029-08-7
heptyldimethyl{2-[(2-methylprop-2-enoyl)oxy]ethyl}azanium heptadecafluorooctane-1-sulfonate (PFOS-$C_{15}H_{30}NO_2$)	1203998-97-3
Perfluorooctane sulfonic anhydride (PFOSAN)	423-92-7
Perfluoro-1-octanesulfonyl chloride (PFOS-Cl)	423-60-9
FOSAA, its salts	
Perfluorooctane sulfonamidoacetic Acid (FOSAA)	2806-24-8
N-[(Perfluorooctyl)sulfonyl]glycinate (FOSAA(anion))	909405-47-6
N-[(Perfluorooctyl)sulfonyl]glycine potassium salt (1:1) (FOSAA-K)	75260-69-4
N-[(Perfluorooctyl)sulfonyl]glycine sodium salt (1:1) (FOSAA-Na)	115716-87-5
N-MeFOSAA, its salts	
N-Methylperfluoro-1-octanesulfonamidoacetic Acid (N-MeFOSAA)	2355-31-9
2-(N-Methylperfluorooctanesulfonamido)acetate (N-Me-FOSAA(anion))	909405-48-7
Potassium N-((heptadecafluorooctyl)sulphonyl)-N-methylglycinate (N-Me-FOSAA-K)	70281-93-5
N-EtFOSAA, its salts	
N-Ethylperfluorooctane sulfonamidoacetic Acid (N-EtFOSAA)	2991-50-6
Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]-, potassium salt (N-Et-FOSAA-K)	2991-51-7
2-(N-Ethyl-perfluorooctanesulfonamido)acetate (N-Et-FOSAA(anion))	909405-49-8
Ammonium 2-(N-ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA-NH_4)	2991-52-8
Sodium 2-(N-ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA-Na)	3871-50-9
PFOSA, its salts	
Perfluorooctane Sulfonamide (PFOSA)	754-91-6
Perfluorooctanesulfonamide lithium salt (1:1) (PFOSA-Li)	76752-79-9
Perfluorooctanesulfonamide Sodium salt (1:1) (PFOSA-Na)	76752-78-8
Perfluorooctanesulfonamide Potassium salt (1:1) (PFOSA-K)	76752-70-0
Perfluorooctanesulfonamide Ammonium salt (1:1) (PFOSA-NH_4)	76752-72-2
Heptadecafluorooctane-1-sulphonamide, compound with triethylamine (1:1) (PFOSA-$C_6H_{15}N$)	76752-82-4
PFOA, its salts & derivatives	
Perfluorooctanoic acid (PFOA)	335-67-1
Sodium perfluorooctanoate (PFOA-Na)	335-95-5
Potassium perfluorooctanoate (PFOA-K)	2395-00-8
Silver perfluorooctanote (PFOA-Ag)	335-93-3
Perfluorooctanoyl fluoride (PFOA-F)	335-66-0
Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
Lithium perfluorooctanoate (PFOA-Li)	17125-58-5
Cobalt perfluorooctanoate (PFOA-Co)	35965-01-6

Cesium perfluorooctanoate (PFOA-Cs)	17125-60-9
Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, chromium(3+) (PFOA-Cr(3+))	68141-02-6
Pentadecafluorooctanoic acid--piperazine (2/1) (PFOA-NH($C_4H_{10}N$))	423-52-9
Pentadecafluorooctanoate (anion)	45285-51-6
Perfluorooctanoic Anhydride	33496-48-9
N,N,N-Triethylethanaminium perfluorooctanoate	98241-25-9
Perfluorooctanoate N,N,N-Trimethylmethanaminium	32609-65-7
Tetrapropylammonium perfluorooctanoate	277749-00-5
Potassium pentadecafluorooctanoate--water (1/1/2) (PFOA-K(H_2O)$_2$)	98065-31-7
Perfluorooctanoic acid compd. with ethanamine (1:1) (PFOA-C_2H_7N)	1376936-03-6
Pentadecafluorooctanoic acid--pyridine (1/1) (PFOA-C_5H_5N)	95658-47-2
pentadecafluorooctanoic acid- 1-phenylpiperazine(1:1) (PFOA-$C_{10}H_{14}N_2$)	1514-68-7
N,N,N-Trimethyloctan-1-aminium pentadecafluorooctanoate (PFOA-$C_{11}H_{26}N$)	927835-01-6
Pentadecafluorooctanoyl chloride (PFOA-Cl)	335-64-8
Perfluorooctanoyl Bromide (PFOA-Br)	222037-87-8
8:2 FTS, its salts	
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	39108-34-4
Potassium 1H,1H,2H,2H-Perfluorodencane sulfonate (8:2 FTS-K)	438237-73-1
Ammonium 1H,1H,2H,2H-Perfluorodencane sulfonate (8:2 FTS-NH_4)	149724-40-3
Sodium 1H,1H,2H,2H-Perfluorodencane sulfonate (8:2 FTS-Na)	27619-96-1
2-(Perfluorooctyl)ethane-1-sulfonate (8:2 FTS(anion))	481071-78-7
2-(Perfluorooctyl)ethanesulfonyl chloride (8:2 FTS-Cl)	27619-90-5
8:2 FTCA, its salts	
2H,2H-Perfluorodecane Acid (8:2 FTCA)	27854-31-5
Tetrabutylphosphonium 2H,2H-Perfluorodecanoate (8:2 FTCA-P(C_4H_9)$_4$)	882489-14-7
8:2diPAP, its salts	
Bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl) hydrogen phosphate (8:2diPAP)	678-41-1
Sodium bis(1H,1H,2H,2H-perfluorodecyl)phosphate (8:2diPAP-Na)	114519-85-6
Bis(2-hydroxyethyl)ammonium bis((perfluorooctyl)ethyl) hydrogen phosphate	57677-97-1
Bis[2-(perfluorooctyl)ethyl] phosphate ammonium salt (8:2 diPAP-NH_4)	93776-20-6
8:2 Fluorotelomer phosphate diester ion (1-)	1411713-91-1
8:3 FTCA, its salts	
2H,2H,3H,3H-Perfluoroundecanoic acid (8:3 FTCA)	34598-33-9
Potassium 2H,2H,3H,3H-Perfluoroundecanoate (8:3 FTCA-K)	83310-58-1
2H,2H,3H,3H-Perfluoroundecanoate (8:3 FTCA-Li)	67304-23-8
8:8 PFPi, its salts	
8:8 Perfluorophosphinic acid (8:8 PFPi)	40143-79-1

Bis(heptadecafluorooctyl)phosphinic Acid Sodium Salt (8:8 PFPi-Na)	500776-69-2
Bis(perfluorooctyl) phosphinic acid erbium(3+) salt (8:8 PFPi-Er)	500776-70-5
Bis(perfluorooctyl) phosphinic acid ytterbium(3+) salt (8:8 PFPi-Yb)	500776-71-6
8:2 monoPAP, its salts	
8:2 Fluorotelomer phosphate monoester (8:2 monoPAP)	57678-03-2
8:2 Fluorotelomer diammonium phosphate	93857-44-4
Disodium 1H,1H,2H,2H-perfluorodecylphosphate	438237-75-3
Ammonium bis[2-(perfluorohexyl)ethyl] phosphate	1764-95-0
3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooctanol phosphate ammonium salt	92401-44-0
Sodium 1H,1H,2H,2H-perfluorooctylphosphate	144965-22-0
Monopotassium monoperfluorohexyl ethylphosphate	150033-28-6
Ammonium 2-(perfluorohexyl)ethyl hydrogen phosphate	2353-52-8
10:2 FTS, its salts	
1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0
1H,1H,2H,2H-Perfluorododecanesulfonic Acid Sodium (10:2 FTS-Na)	108026-35-3
2-(Perfluorodecyl)ethane-1-sulfonyl chloride (10:2 FTS-Cl)	27619-91-6
10:2 diPAP, its salts	
10:2 Fluortelomerphosphatediester (10:2 diPAP)	1895-26-7
Bis((perfluorodecyl)ethyl) hydrogen phosphate 2,2'-iminodiethanol (10:2 diPAP-$C_4H_{11}O_2$)	57677-98-2
10:2 monoPAP, its salts	
10:2 Fluortelomerphosphatemonoester (10:2 monoPAP)	57678-05-4
10:2 Fluorotelomer diammonium dihydrogen phosphate	93857-45-5
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,12.12,12-Henicosafluorododecyl dihydrogen phosphate cyclohexylamine	2514858-66-1

(3) The conclusion is only applicable to the substance list in the report.

European Regulation POPs (EU) 2023/1608 amending Regulation (EU) 2019/1021 Annex I-PFHxS, its salts and PFHxS related compounds

Test Method: Modified EN 17681-1:2025, analysis was performed by LC-MS or LC-MS/MS and GC-MS or GC-MS/MS.

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
PFHxS, its salts					
Perfluorohexanesulfonic acid (PFHxS), its salts^	355-46-4	0.025	mg/kg	0.010	ND
PFHxS-related compounds					
N-Methylperfluoro-1-hexanesulfonamide (N-Me-PFHxSA)	68259-15-4	1	mg/kg	0.010	ND
Perfluorohexane sulfonamide (PFHxSA)	41997-13-1	1	mg/kg	0.010	ND

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
N-[3-(dimethylamino)propyl] tridecafluorohexanesulphonamide (N-AP-FHxSA)	50598-28-2	1	mg/kg	0.010	ND
2-[methyl[(tridecafluorohexyl) sulphonyl]amino]ethyl acrylate)) (N-MeFHSEA)	67584-57-0	1	mg/kg	0.200	ND
2-Propenoic acid, 2-methyl-, 2-[methyl[(1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexyl)sulfonyl]amino]ethyl ester	67584-61-6	1	mg/kg	0.200	ND
2-Propenoic acid, 2-methyl-, 2-[ethyl[(1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexyl)sulfonyl]amino]ethyl ester	67906-70-1	1	mg/kg	0.200	ND
1-Hexanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-N-(2-hydroxyethyl)-N-methyl-(MeFHxSE)	68555-75-9	1	mg/kg	0.010	ND
Glycine, N-ethyl-N-[(1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexyl)sulfonyl] (EtFHxSAA), its salts^	68957-32-4	1	mg/kg	0.010	ND
Sum of PFHxS-related compounds	-	1	mg/kg	-	ND
Conclusion					**Pass**

Notes:

(1) Commission Delegated Regulation (EU) 2023/1608 of May 30, 2023, amending Regulation (EU) 2019/1021 Annex I as regard the listing of perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds, Official Journal of the EU, August 8, 2023.

Substance	**Scope**	**Specific exemption on intermediate use or other specification**
PFHxS and its salts	Substances, mixtures or articles	≤ 0.025 mg/kg
PFHxS-related compounds	Substances, mixtures or articles	≤ 1 mg/kg (individual or sum of all)
PFHxS, its salts and PFHxS-related compounds	Concentrated firefighting foam	≤ 0.1 mg/kg (to be reviewed within three years after entry into force of this amending regulation with a view to lower the limit)

(2) The tested perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds refer to the “Listed under the POPs Regulation” of ECHA, please find more information via below weblink: https://echa.europa.eu/list-of-substances-proposed-as-pops

(3) ^=Substances refer to its salts/derivative listed in below table

Substance Name	**CAS No.**

PFHxS, its salts & derivatives	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluorohexanesulfonate Na-salt (PFHxS-Na)	82382-12-5
Perfluorohexanesulfonate K-salt (PFHxS-K)	3871-99-6
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
Ammonium perfluorohexane-1-sulphonate (PFHxS-NH_4)	68259-08-5
Phosphonium, triphenyl(phenylmethyl)-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-BTPP)	1000597-52-3
N,N,N-tributylbutan-1-aminium tridecafluorohexane-1-sulfonate(PFHxS-$N(C_4H_9)_4$)	108427-54-9
N,N,N-triethylethanaminium tridecafluorohexane-1-sulfonate(PFHxS-$N(C_2H_5)_4$)	108427-55-0
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
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) (Calculated in terms of PFHxS) (PFHxS-$(NC_{10}H_{14})_3C_5H_4$)	1310480-24-0
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
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
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
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
Sulfonium, triphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (TPS-PFHxS)	144116-10-9
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
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
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-TMA)	189274-31-5
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
Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,6-	213740-81-9

tridecafluoro-1-hexanesulfonate (1:1)(PFHxS-I(C_6H_4)$_2$(C_4H_9)$_2$)	
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
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)$_2$$C_6H_5$)	341548-85-4
1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, scandium(3+) salt (3:1)(PFHxS-Sc)	350836-93-0
1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, neodymium(3+) salt (3:1)(PFHxS-Nd)	41184-65-0
1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, yttrium(3+) salt (3:1)(PFHxS-Y)	41242-12-0
Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:2)(PFHxS-S_3(C_6H_5)$_4$(C_6H_4)$_2$)	421555-73-9
Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic(PFHxS-I (C_6H_4)$_2$(C_5H_{11})	421555-74-0
Perflurohexane sulphonyl fluoride(PFHxS-F)	423-50-7
Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)(PFHxS-S(C_6H_4)$_3$(C_4H_9)$_3$)	425670-70-8
1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, zinc salt (PFHxS-Zn)	70136-72-0
Tridecafluorohexanesulphonic acid, compound with 2,2'-iminodiethanol (1:1)(PFHxS-NH(C_2H_5O)$_2$)	70225-16-0
1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with N,N-diethylethanamine (1:1)(PFHxS-N(C_2H_5)$_3$)	72033-41-1
Iodonium, bis[(1,1-dimethylethyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1) (9CI) (PFHxS-I(C_6H_4)$_2$(C_4H_9)$_2$)	866621-50-3
Sulfonium, (4-methylphenyl)diphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)(PFHxS-S(C_6H_5)$_2$$C_7H_7$)	910606-39-2
Sulfonium, [4-[(2-methyl-1-oxo-2-propen-1-yl)oxy]phenyl]diphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,67tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S(C_6H_5)$_2$$8_{10}H_9O_2$)	911027-68-4
1-Hexanesulfonic acid, 9,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, cesium salt (1:1) (PFHxS-Cs) (PFHxS-Cs)	92011-17-1
Dibenzo[k,n][1,4,7,10,13]tetraoxathiacyclopentadecinium, 19-[4-(1,1-dimethylethyl)phenyl]-6,7,9,10,12,13-hexahydro-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S$C_{28}H_{31}O_4$)	928049-42-7
Perfluorohexylsulfonyl chloride (PFHxS-Cl)	55591-23-6
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,	911027-69-5

3-hydroxytricyclo[3.3.1.13,7]dec-1-yl 2-methyl-2-propenoate and tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate (PFHxS-Sulfonium, propenoate polymer)	
Perfluorohexane sulfonate (anion)	108427-53-8
Tetrabutylphosphonium perfluorohexane sulfonate (PFHxS-P (C_4H_9)$_4$))	2310194-12-6
EtFHxSAA, its salts	
Glycine, N-ethyl-N-[(1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexyl)sulfonyl] (EtFHxSAA)	68957-32-4
Potassium N-ethyl-n-[(tridecafluorohexyl)sulfonyl]glycinate (EtFHxSAA-K)	67584-53-6
Sodium N-ethyl-N-((tridecafluorohexyl)sulphonyl)glycinate (EtFHxSAA-Na)	68555-70-4

(4) The conclusion is only applicable to the substance list in the report.

European Regulation POPs (EU) 2019/1021 Annex I–Halogenated compounds

Test Method: SGS In-House method, analysis was performed by GC-ECD or GC-MS.

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
Hexachlorobutadiene	87-68-3	Prohibited	mg/kg	5	ND
Pentachlorobenzene	608-93-5	Prohibited	mg/kg	5	ND
Polychlorinated biphenyls (PCBs)	1336-36-3 and others	Prohibited	mg/kg	0.2	ND
Polychlorinated naphthalenes (PCNs)	70776-03-3 and others	Prohibited	mg/kg	5	ND
Hexabromobiphenyl	36355-01-8	Prohibited	mg/kg	5	ND
Conclusion					**Pass**

Notes:
(1) Exemption: Tetrabromodiphenyl ether, pentabromodiphenyl ether, hexabromodiphenyl ether, heptabromodiphenyl ether and decabromodiphenyl ether in electrical and electronic equipment within the scope of Directive 2011/65/EU are exempted.
(2) Without prejudice to Directive 96/59/EC, articles already in use at the time of the entry into force of this Regulation are allowed to be used. Member States shall identify and remove from use equipment (e.g. transformers, capacitors or other receptacles containing liquid stocks) containing more than 0,005 % PCBs and volumes greater than 0,05 dm^3, as soon as possible but no later than 31 December 2025.

European Regulation POPs (EU) 2025/843 amending Regulation (EU) 2019/1021 Annex I -UV-328

Test Method: SGS In-House method, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
2-(2H-benzotriazol-2-yl)-4,6-di-tert-pentylphenol (UV-328)	25973-55-1	100	mg/kg	1	ND
Conclusion					**Pass**

Notes:
(1) According to European Regulation POPs (EU) 2025/843 amending Regulation (EU) 2019/1021 Annex I，To reinforce the application and enforcement of the POP Recast Regulation, an unintentional trace contaminant (UTC) value has been set for UV-328 when the chemical is in substances, mixtures and articles. This UTC limit value will be strengthened over a four-year period.

Substance	Scope	Specific exemption on intermediate use or other specifications	Effective date
UV-328	Substances Mixtures Articles	≤ 100 mg/kg	August 4, 2025
		≤ 10 mg/kg	August 4, 2027
		≤ 1.0 mg/kg	August 4, 2029

European Regulation POPs (EU) 2025/1930 amending Regulation (EU) 2019/1021 Annex I - Dechlorane Plus (DP)

Test Method: SGS In-House method, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
Dechlorane Plus(DP)	13560-89-9 /135821-03-3 /135821-74-8	1000	mg/kg	1	ND
Conclusion					**Pass**

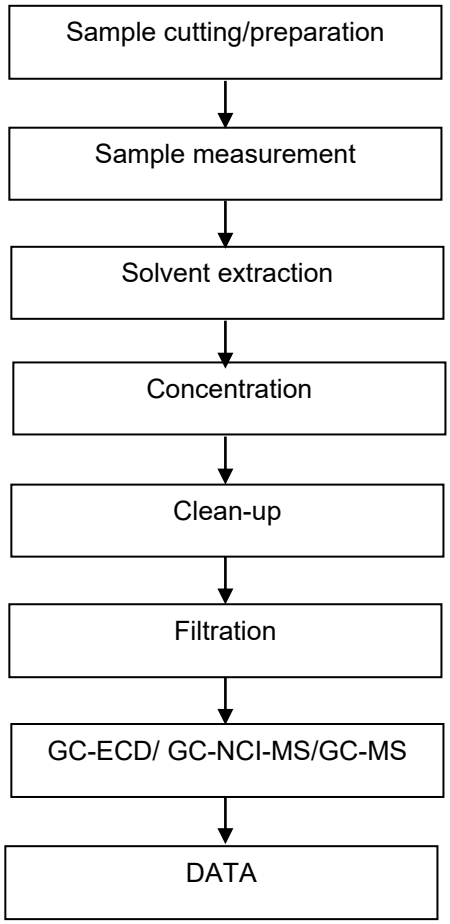
Notes:
(1) According to European Regulation POPs (EU) 2025/1930 amending Regulation (EU) 2019/1021 Annex I, To reinforce the application and enforcement of the POP Recast Regulation, an unintentional trace contaminant (UTC) value has been set for Dechlorane Plus when the chemical is in substances, mixtures and articles.

Substance	Scope	Specific exemption on intermediate use or other specifications	Effective date
Dechlorane Plus	Substances Mixtures Articles	≤ 1000 mg/kg	Until April 15, 2028
		≤ 1 mg/kg	After April 15, 2028

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.

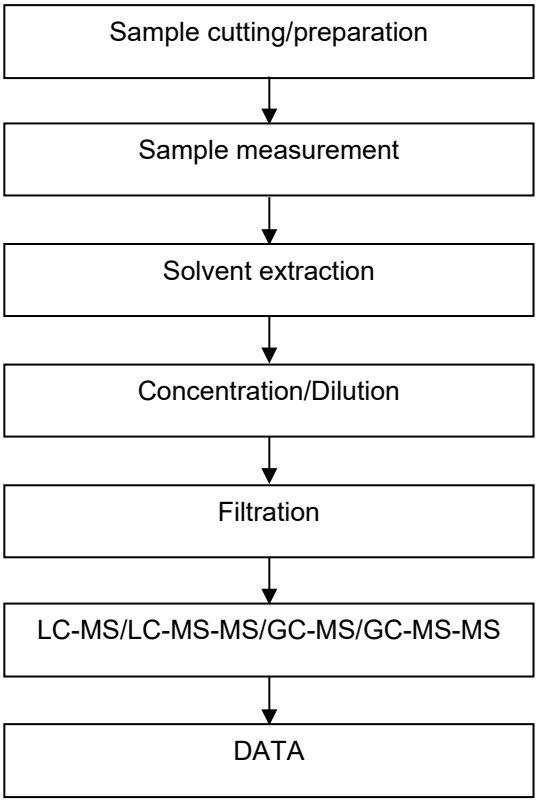
ATTACHMENTS

Chlorinated Paraffin Testing Flow Chart



ATTACHMENTS

PFASs/ PFOS/PFOA Testing Flow Chart



Sample Photo:

SHA26-0084026-0001.C001

SGS authenticate the photo on original report only

*** End of Report ***