



Client Name: YANGZHOU J&V SEMICONDUCTOR CO.,LTD.
Client Address: NO.56, NEW GANQUAN EAST ROAD,AUTOMOBILE INDUSTRIAL PARK, YANGZHOU,
JIANGSU, CHINA

Sample Name: GPP Dice
Lot No.: 2025.08

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

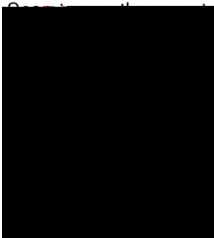
SGS Job No.: SHP25-027766
Sample Receiving Date: Aug 14, 2025
Testing Period: Aug 14, 2025 ~ Aug 19, 2025
Test Requested: Select test(s) as requested by the client.
Test Method(s): Please refer to next page(s).
Test Result(s): Please refer to next page(s).

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass
Element(s)	See Results
Halogen	See Results
Medium Chain Chlorinated Paraffin(C14-C17)(MCCP)	See Results
TBBP-A	See Results
Hexabromocyclododecane (HBCDD)	See Results
PFOS, its salts and related compounds,PFOA, its salts	See Results

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




Susu Zhang
Approved Signatory





Test Report

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Test Result(s):

Test Part Description

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	SHA25-0211512-0001.C001	Silvery/dark grey solid sheet

Remarks:

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 and IEC 62321-12:2023, analysis was performed by ICP-OES/AAS, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A1
Lead (Pb)	1000	mg/kg	2	18569 [▲]
Mercury (Hg)	1000	mg/kg	2	ND
Cadmium (Cd)	100	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Polybrominated biphenyls (PBB)	1000	mg/kg	-	ND
Monobrominated biphenyl (MonoBB)	-	mg/kg	25	ND
Dibrominated biphenyl (DiBB)	-	mg/kg	25	ND
Tribrominated biphenyl (TriBB)	-	mg/kg	25	ND
Tetrabrominated biphenyl (TetraBB)	-	mg/kg	25	ND
Pentabrominated biphenyl (PentaBB)	-	mg/kg	25	ND
Hexabrominated biphenyl (HexaBB)	-	mg/kg	25	ND
Heptabrominated biphenyl (HeptaBB)	-	mg/kg	25	ND
Octabrominated biphenyl (OctaBB)	-	mg/kg	25	ND
Nonabrominated biphenyl (NonaBB)	-	mg/kg	25	ND
Decabrominated biphenyl (DecaBB)	-	mg/kg	25	ND
Polybrominated diphenyl ethers (PBDE)	1000	mg/kg	-	ND
Monobrominated diphenyl ether (MonoBDE)	-	mg/kg	25	ND
Dibrominated diphenyl ether (DiBDE)	-	mg/kg	25	ND
Tribrominated diphenyl ether (TriBDE)	-	mg/kg	25	ND
Tetrabrominated diphenyl ether (TetraBDE)	-	mg/kg	25	ND
Pentabrominated diphenyl ether (PentaBDE)	-	mg/kg	25	ND
Hexabrominated diphenyl ether (HexaBDE)	-	mg/kg	25	ND



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Test Item(s)	Limit	Unit(s)	MDL	A1
Octabrominated diphenyl ether (OctaBDE)	-	mg/kg	25	ND
Nonabrominated diphenyl ether (NonaBDE)	-	mg/kg	25	ND
Decabrominated diphenyl ether (DecaBDE)	-	mg/kg	25	ND
Bis(2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Dibutyl Phthalate (DBP)	1000	mg/kg	50	ND
Diisobutyl Phthalate (DIBP)	1000	mg/kg	50	ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

Element(s)

Test Method: With reference to US EPA 3052:1996, analysis was performed by ICP-OES/AAS.

Test Item(s)	Unit(s)	MDL	A1
Arsenic(As)	mg/kg	10	234
Beryllium(Be)	mg/kg	5	ND
Antimony(Sb)	mg/kg	10	ND

Halogen

Test Method: With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	Unit(s)	MDL	A1
Fluorine(F)	mg/kg	20	ND
Chlorine(Cl)	mg/kg	50	ND
Bromine(Br)	mg/kg	50	ND
Iodine(I)	mg/kg	50	ND

Medium Chain Chlorinated Paraffin(C14-C17)(MCCP)

Test Method: With reference to ISO 18219-2:2021, analysis was performed by GC-NCI-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Medium Chain Chlorinated Paraffin(C ₁₄ -C ₁₇)(MCCP)	85535-85-9	mg/kg	50	ND

TBBP-A

Test Method: With reference to US EPA 3540C:1996, analysis was performed by GC-MS/LC-MS.



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Test Item(s)	CAS No.	Unit(s)	MDL	A1
TBBP-A	79-94-7	mg/kg	10	ND

Hexabromocyclododecane (HBCDD)

Test Method: With reference to US EPA 3550C:2007, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Hexabromocyclododecane (HBCDD)	134237-50-6 /134237-51-7 /134237-52-8 /25637-99-4 /3194-55-6	mg/kg	10	ND

PFOS, its salts and related compounds, PFOA, its salts

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

Test Item(s)	CAS No.	Unit(s)	MDL	A1
PFOS, its salts				
Perfluorooctane sulfonic acid (PFOS), its salts^	1763-23-1	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
Sum of PFOS-related compounds	-	mg/kg	-	ND
PFOA, its salts				
Perfluorooctanoic acid (PFOA), its salts^	335-67-1	mg/kg	0.010	ND

Notes:

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

Substances Name	CAS No.
PFOS, its salts & derivatives	



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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 ₂ H ₄ OH) ₂)	70225-14-8
Perfluorooctanesulfonic acid, tetraethylammonium salt (PFOS-N(C ₂ H ₅) ₄)	



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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-NH₄) 76752-72-2
Heptadecafluorooctane-1-sulphonamide, compound with triethylamine (1:1) (PFOSA-C₆H₁₅N) 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 perfluorooctanoate (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(C₄H₁₀N)) 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)89996 | h₄WTf 1 0 0 -1



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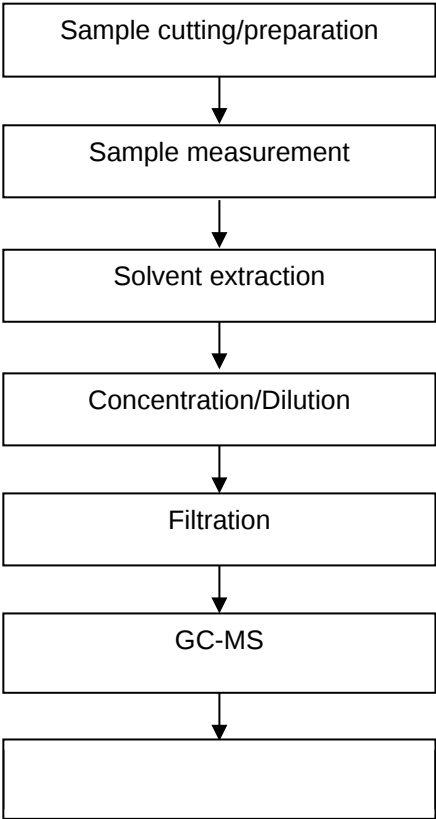
ATTACHMENTS

Elements Testing Flow Chart

These samples were dissolved totally by pre-conditioning method according to below flow chart.



PBB/PBDE/Phthalates Testing Flow Chart





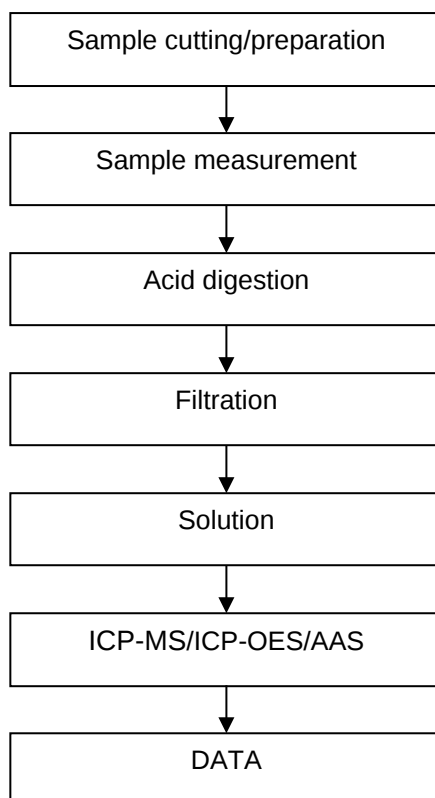
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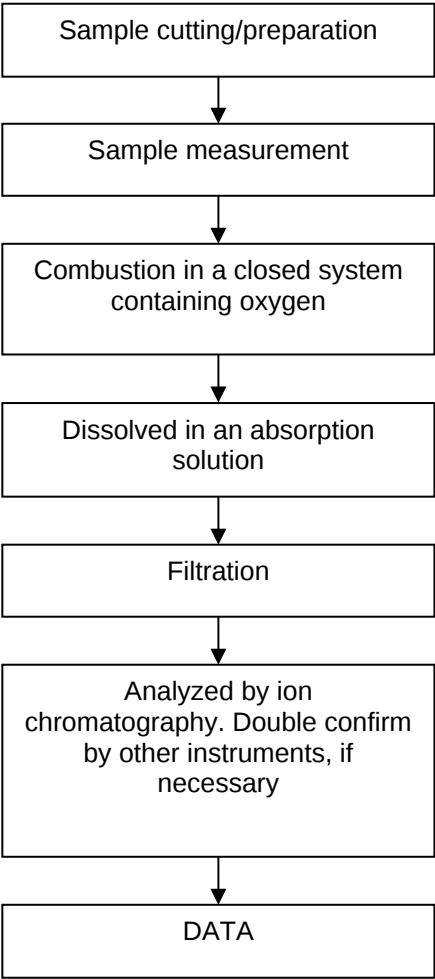
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Elements Testing Flow Chart





Halogen Testing Flow Chart





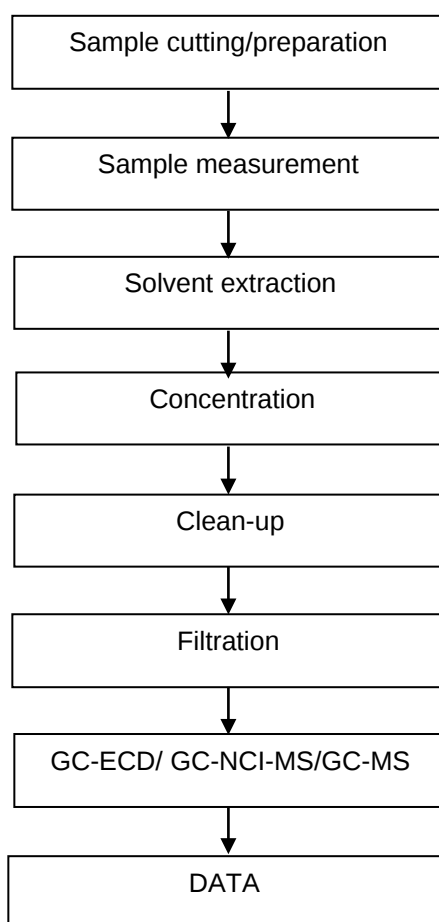
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Chlorinated Paraffin Testing Flow Chart





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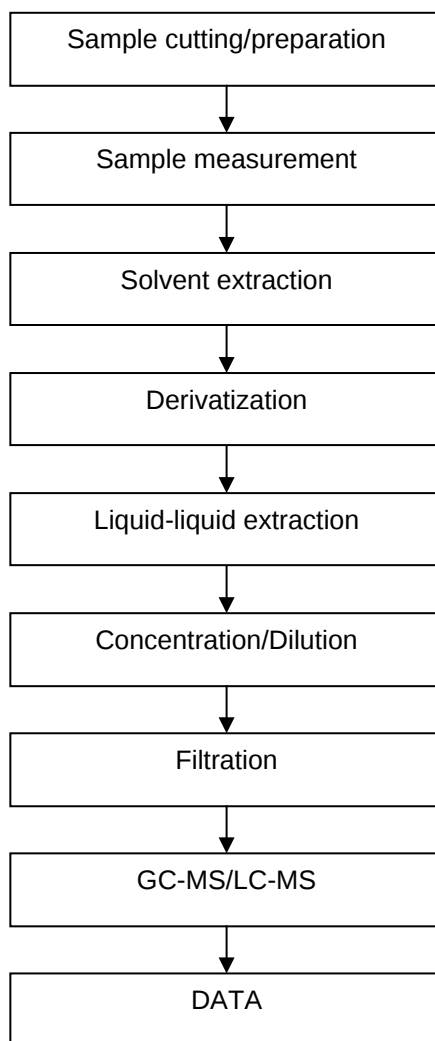
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TBBP-A Testing Flow Chart





PFASs/ PFOS/PFOA Testing Flow Chart

