

Test Report

No.: SHAEC23004527902

Date: Apr 25, 2023

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Client Name: SK HYNIX SYSTEM IC (WUXI) CO., LTD

Client Address: 702 ZHIDE RD, XINWU DISTRICT, WUXI, JIANGSU CHINA

Sample Name: 200mm wafer

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

SGS Job No.: SP23-009589

Sample Receiving Date: Apr 17, 2023

Testing Period: Apr 17, 2023 ~ Apr 25, 2023

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 and its amendments - Persistent organic pollutants (POPs)	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



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Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	SHA23-0045279-0001.C001	Colorful solid sheet

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 and its amendments - Persistent organic pollutants (POPs)

Test Method: With reference to SGS In-House method, analysis was performed by GC-MS, GC-ECD, HPLC-DAD-MS.

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
Hexachlorobutadiene	87-68-3	Banned	mg/kg	5	ND
Pentachlorobenzene	608-93-5	Banned	mg/kg	5	ND
Hexachlorobenzene	118-74-1	10	mg/kg	5	ND
Polychlorinated biphenyls (PCB)	1336-36-3 and others	Banned	mg/kg	5	ND
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD)	134237-50-6 /134237-51-7 /134237-52-8 /25637-99-4 /3194-55-6	100	mg/kg	10	ND
Polychlorinated naphthalenes (PCN)	70776-03-3 and others	Banned	mg/kg	5	ND
Pentachlorophenol (PCP), its salts and esters	87-86-5 and others	5	mg/kg	0.5	ND
Hexabromodiphenyl (HexaBB)	36355-01-8	Banned	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	40088-47-9 and others	10	mg/kg	5	ND
Pentabromodiphenyl ethers (PentaBDE)	32534-81-9 and others	10	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	36483-60-0 and others	10	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	68928-80-3 and others	10	mg/kg	5	ND
Decabromodiphenyl ether (DecaBDE)	1163-19-5	10	mg/kg	5	ND
Alkanes, C10-13, chloro (short chain-chlorinated paraffins) (SCCPs)	85535-84-8 and others	1	%	0.005	ND
Perfluorooctane sulfonates (PFOS) and its derivatives	-	10	mg/kg	-	ND
Perfluorooctane sulfonates (PFOS) ^	1763-23-1	-	mg/kg	1	ND
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	-	mg/kg	1	ND



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Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
N-methylperfluoro-1-octanesulfonamide (MeFOA)	31506-32-8	-	mg/kg	1	ND
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (EtFOSE)	1691-99-2	-	mg/kg	1	ND
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (MeFOSE)	24448-09-7	-	mg/kg	1	ND
Perfluorooctane sulfonamide (PFOSA)	754-91-6	-	mg/kg	1	ND
Perfluorooctanoic Acid (PFOA) and its salts+	335-67-1	0.025	mg/kg	0.025	ND
PFOA Related Substances	-	1	mg/kg	-	ND
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTS)	39108-34-4	-	mg/kg	0.2	ND
Methyl perfluorooctanoate (Me-PFOA)	376-27-2	-	mg/kg	0.2	ND
Ethyl perfluorooctanoate (Et-PFOA)	3108-24-5	-	mg/kg	0.2	ND
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH)	678-39-7	-	mg/kg	0.2	ND
1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)	27905-45-9	-	mg/kg	0.2	ND
1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)	1996-88-9	-	mg/kg	0.2	ND
Perfluoro-1-iodooctane (PFOI)	507-63-1	-	mg/kg	0.2	ND
Endrin	72-20-8	Banned	mg/kg	0.05	ND
Heptachlor	76-44-8	Banned	mg/kg	0.05	ND
Mirex	2385-85-5	Banned	mg/kg	0.05	ND
Aldrin	309-00-2	Banned	mg/kg	0.05	ND
Dieldrin	60-57-1	Banned	mg/kg	0.05	ND
DDT(1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane)	50-29-3	Banned	mg/kg	0.05	ND
Toxaphene	8001-35-2	Banned	mg/kg	0.2	ND
Chlordecone	143-50-0	Banned	mg/kg	0.2	ND
HCH, including lindane	319-84-6 /319-85-7 /319-86-8 /58-89-9	Banned	mg/kg	0.05	ND
Endosulfan	115-29-7, 959-98-8, 33213-65-9	Banned	mg/kg	0.05	ND
Chlordane	57-74-9	Banned	mg/kg	0.05	ND
Dicofol	115-32-2	Banned	mg/kg	0.05	ND
Conclusion					Pass

Notes:

- (1) Substances in Annex I of European Regulation POPs (EU) 2019/1021 are prohibited in preparations and constituents of articles unless otherwise specified.
- (2) The chemical analysis of substances is performed by means of currently available analytical techniques against substances laid down in Test Requested.
- (3) Detected substance(s) may come from one or more components in composite testing. Client is



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suggested to identify the component(s) and the exact concentration of the substance(s) by requesting further quantitative analysis from the laboratory.

(4) Exemption: Alkanes C10-13, chloro (short chain-chlorinated paraffins) (SCCPs) < 1.0% in preparation, <0.15% for articles.

(5) Exemptions: HBCDD, No more than 100 mg/kg as an unintentional trace contaminant in substances, mixtures, articles or flame-retarded parts of articles.

(6) Exemptions: Perfluorooctane sulfonates (PFOS) and its derivatives (acid, metal salt, halide, amide, and other derivatives including polymers) \leq 10 mg/kg for preparations, < 0.1% (w/w) for articles and < 1 $\mu\text{g}/\text{m}^2$ for textiles and coated materials.

(7) ^ PFOS including PFOS-K (CAS No.: 2795-39-3), PFOS-Li (CAS No.: 29457-72-5), PFOS-NH₄ (CAS No.: 29081-56-9), PFOS-NH(OH)₂ (CAS No.: 70225-14-8), PFOS-N(C₂H₅)₄ (CAS No.: 56773-42-3), PFOS-DDA (CAS No.: 251099-16-8) and POSF (CAS No.: 307-35-7).

(8) * PFOA and its salts including PFOA-Na (CAS No.: 335-95-5), PFOA-K (CAS No.: 2395-00-8), PFOA-Ag (CAS No.: 335-93-3), PFOA-F (CAS No.: 335-66-0) and APFO (CAS No.: 3825-26-1).

(9) Exemptions: Tetrabromodiphenyl ether, pentabromodiphenyl ether, hexabromodiphenyl ether, heptabromodiphenyl ether and decabromodiphenyl ether are \leq 10 mg/kg for substances, and Sum of tetra-, penta-, hexa-, hepta- and decaBDE \leq 500 mg/kg for mixtures or articles, this restriction is subject to review and assessment by the European by 16 July 2021.

(10) 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.

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.



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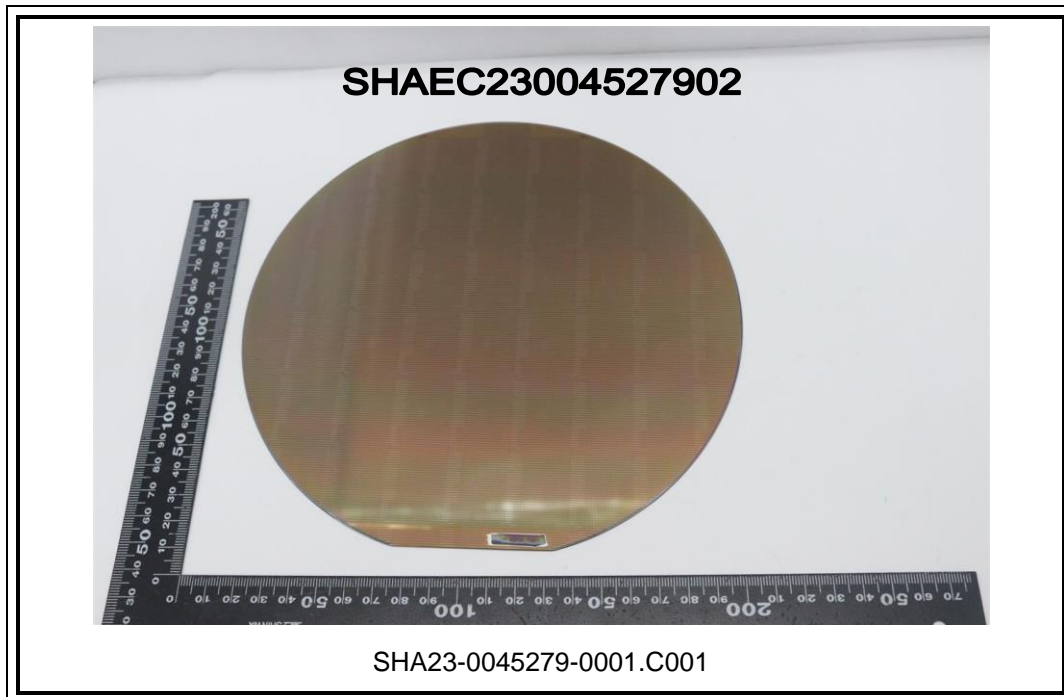
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