

Test Report

No.: SHAEC23016032405

Date: Oct 12, 2023

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Client Name: CSMC TECHNOLOGIES FAB2 CO.,LTD

Client Address: 14 LIANGXI ROAD,WUXI,JIANGSU 214061,CHINA

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



Unless otherwise agreed

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Test Result(s):

Test Part Description

| SN ID | Sample No. | SGS Sample ID | Description |
|-------|------------|-------------------------|------------------------|
| SN1 | A2 | SHA23-0160324-0001.C002 | Colorful silicon wafer |

Remarks:

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), 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, IEC 62321-6:2015 and IEC 62321-8:2017, analysis was performed by ICP-OES, UV-Vis and GC-MS.

| Test Item(s) | Limit | Unit(s) | MDL | A2 |
|------------------------------------|-------|---------|-----|----|
| Cadmium(Cd) | 100 | mg/kg | 2 | ND |
| Lead (Pb) | 1000 | mg/kg | 2 | ND |
| Mercury (Hg) | 1000 | mg/kg | 2 | ND |
| Hexavalent Chromium (Cr(VI)) | 1000 | mg/kg | 8 | ND |
| Polybromobiphenyl (PBBs) | 1000 | mg/kg | - | ND |
| Monobromobiphenyl (MonoBB) | - | mg/kg | 5 | ND |
| Dibromobiphenyl (DiBB) | - | mg/kg | 5 | ND |
| Tribromobiphenyl (TriBB) | - | mg/kg | 5 | ND |
| Tetrabromobiphenyl (TetraBB) | - | mg/kg | 5 | ND |
| Pentabromobiphenyl (PentaBB) | - | mg/kg | 5 | ND |
| Hexabromobiphenyl (HexaBB) | - | mg/kg | 5 | ND |
| Heptabromobiphenyl (HeptaBB) | - | mg/kg | 5 | ND |
| Octabromobiphenyl (OctaBB) | - | mg/kg | 5 | ND |
| Nonabromobiphenyl (NonaBB) | - | mg/kg | 5 | ND |
| Decabromobiphenyl (DecaBB) | - | mg/kg | 5 | ND |
| Polybromodiphenyl ether(PBDEs) | 1000 | mg/kg | - | ND |
| Monobromodiphenylether (MonoBDE) | - | mg/kg | 5 | ND |
| Dibromodiphenylether (DiBDE) | - | mg/kg | 5 | ND |
| Tribromodiphenylether (TriBDE) | - | mg/kg | 5 | ND |
| Tetrabromodiphenylether (TetraBDE) | - | mg/kg | 5 | ND |
| Pentabromodiphenylether (PentaBDE) | - | mg/kg | 5 | ND |
| Hexabromodiphenylether (HexaBDE) | - | mg/kg | 5 | ND |
| Heptabromodiphenylether (HeptaBDE) | - | mg/kg | 5 | ND |
| Octabromodiphenylether (OctaBDE) | - | mg/kg | 5 | ND |
| Nonabromodiphenylether (NonaBDE) | - | mg/kg | 5 | ND |
| Decabromodiphenylether (DecaBDE) | - | mg/kg | 5 | ND |
| Dibutyl Phthalate(DBP) | 1000 | mg/kg | 50 | ND |
| Benzyl Butyl Phthalate(BBP) | 1000 | mg/kg | 50 | ND |

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| Test Item(s) | Limit | Unit(s) | MDL | A2 |
|------------------------------------|-------|---------|-----|----|
| Bis-(2-ethylhexyl) Phthalate(DEHP) | 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.

Halogen

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

| Test Item(s) | Unit(s) | MDL | A2 |
|--------------|---------|-----|----|
| Fluorine(F) | mg/kg | 20 | ND |
| Chlorine(Cl) | mg/kg | 50 | ND |
| Bromine(Br) | mg/kg | 50 | ND |
| Iodine(I) | mg/kg | 50 | ND |

Hexabromocyclododecane (HBCDD)

Test Method: With reference to IEC 62321-9:2021, analysis was performed by GC-MS.

| Test Item(s) | CAS No. | Unit(s) | MDL | A2 |
|--------------------------------|--|---------|-----|----|
| Hexabromocyclododecane (HBCDD) | 134237-50-6 /134237-51-7 /134237-52-8 /25637-99-4 /3194-55-6 | mg/kg | 20 | ND |

TBBP-A

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

| Test Item(s) | CAS No. | Unit(s) | MDL | A2 |
|--------------|---------|---------|-----|----|
| TBBP-A | 79-94-7 | mg/kg | 10 | ND |

Perfluorooctane Sulfonates (PFOS) and its derivatives and Perfluorooctanoic Acid (PFOA) and its salts

Test Method: With reference to CEN/TS 15968:2010, analysis was performed by HPLC-MS or LC-MS/MS.

| Test Item(s) | CAS No. | Unit(s) | MDL | A2 |
|--|-----------|---------|-------|----|
| PFOS and its derivatives | - | mg/kg | - | ND |
| Perfluorooctane sulfonates (PFOS) and its salts* | 1763-23-1 | mg/kg | 0.010 | ND |
| N-ethylperfluoro-1-octanesulfonamide (N-EtFOSA) | 4151-50-2 | mg/kg | 0.010 | ND |

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| Test Item(s) | CAS No. | Unit(s) | MDL | A2 |
|---|------------|---------|-------|----|
| 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) | 754-91-6 | mg/kg | 0.010 | ND |
| Perfluorooctanoic Acid (PFOA) and its salts* | 335-67-1 | mg/kg | 0.010 | ND |

Notes:

(1) Perfluorooctanoic acid (PFOA) and its salts* including PFOA (CAS No. 335-67-1), APFO (CAS No. 3825-26-1), PFOA-Na (CAS No. 335-95-5), PFOA-K (CAS No. 2395-00-8), PFOA-Ag (CAS No. 335-93-3) and PFOA-F (CAS No. 335-66-0). The result of PFOA is used to represent PFOA and its salts.

(2) Perfluorooctane sulfonates (PFOS) and its salts* including PFOS (CAS No. 1763-23-1), POSF(CAS No. 307-35-7), PFOS-K (CAS No. 2795-39-3), PFOS-NH₄ (CAS No. 29081-56-9), PFOS-N(C₁₀H₂₁)₂(CH₃)₂ (CAS No. 251099-16-8), PFOS-NH₂(C₂H₄OH)₂ (CAS No. 70225-14-8), PFOS-Li (CAS No. 29457-72-5), PFOS-N(C₂H₅)₄ (CAS No. 56773-42-3) and PFOS-Na (CAS No. 4021-47-0). The result of PFOS is used to represent PFOS and its salts.

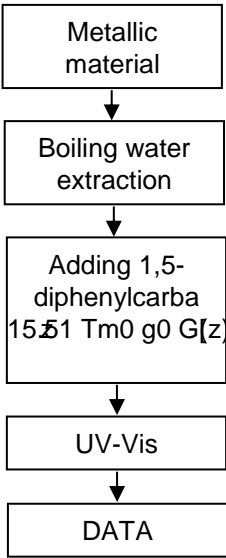
Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.

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Hexavalent Chromium (Cr(VI)) Testing Flow Chart

Name of the person who made testing: Alex Wang
Name of the person in charge of testing: Xiaolong Yang



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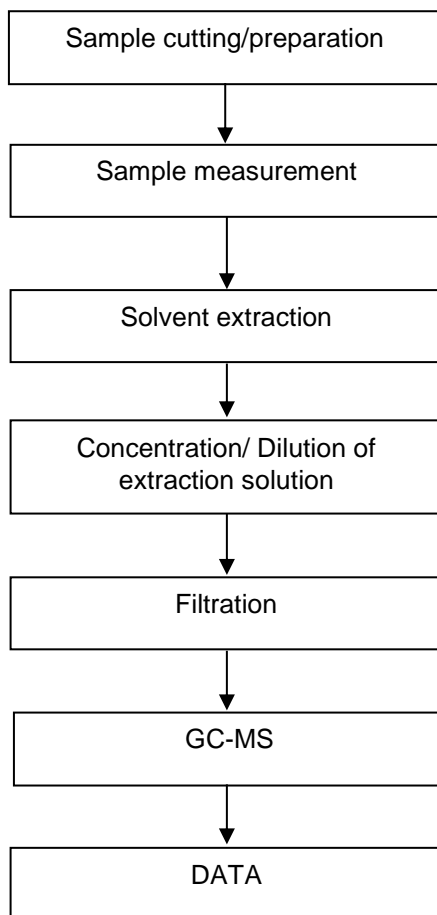
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PBBs/PBDEs Testing Flow Chart

Name of the person who made testing: Lucky Liu

Name of the person in charge of testing: Sherry Shi





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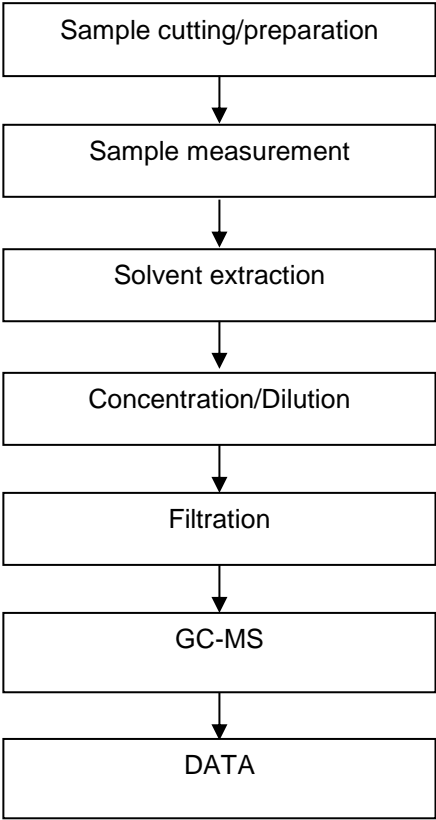
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Phthalates Testing Flow Chart

Name of the person who made testing: Lucky Liu
Name of the person in charge of testing: Sherry Shi



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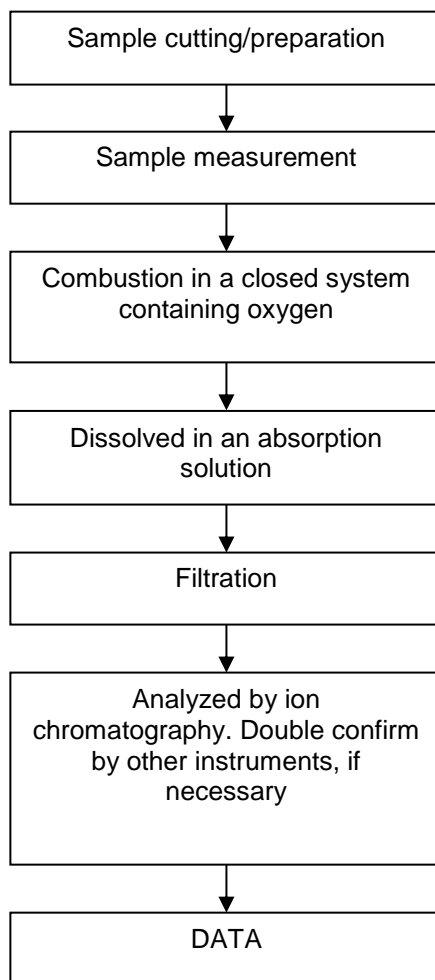
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Halogen Testing Flow Chart

Name of the person who made testing: Andy Zhang

Name of the person in charge of testing: Allen Chen



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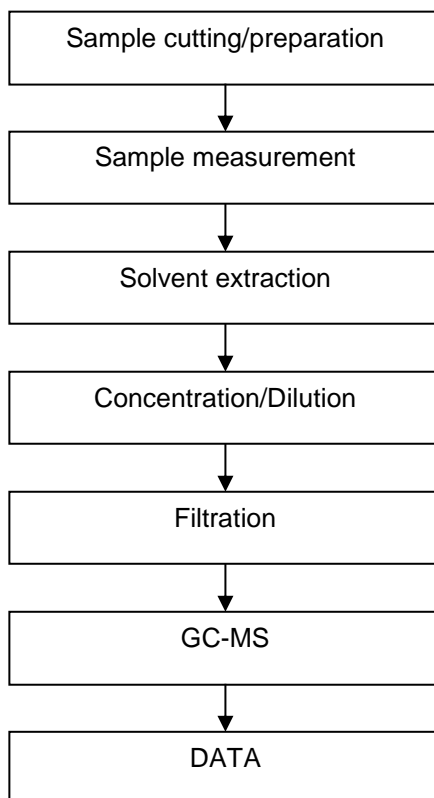
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HBCDD Testing Flow Chart

Name of the person who made testing: Lucky Liu

Name of the person in charge of testing: Sherry Shi



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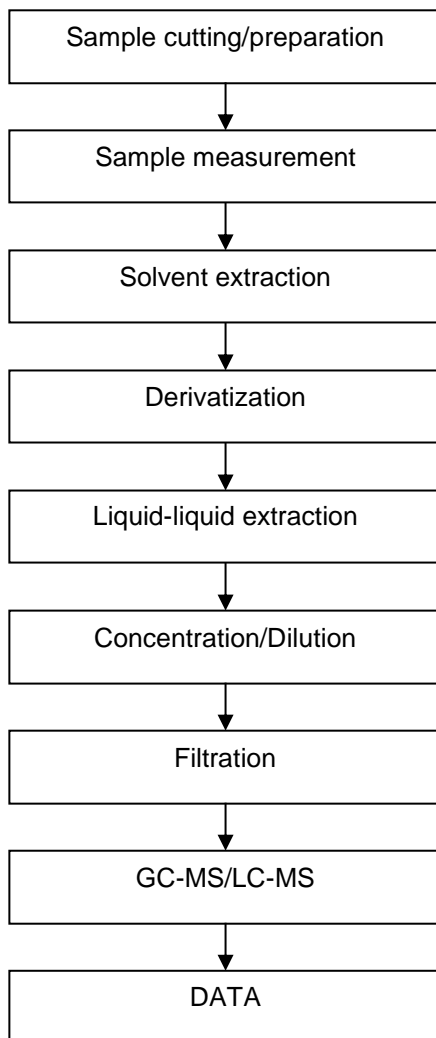
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TBBP-A Testing Flow Chart

Name of the person who made testing: Lucky Liu

Name of the person in charge of testing: Sherry Shi

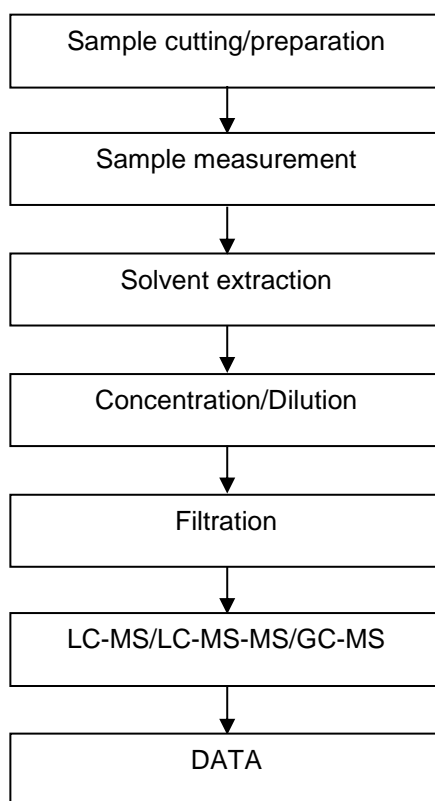


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PFASs/ PFOS/PFOA Testing Flow Chart

Name of the person who made testing: Richer Yu

Name of the person in charge of testing: Richer Yu



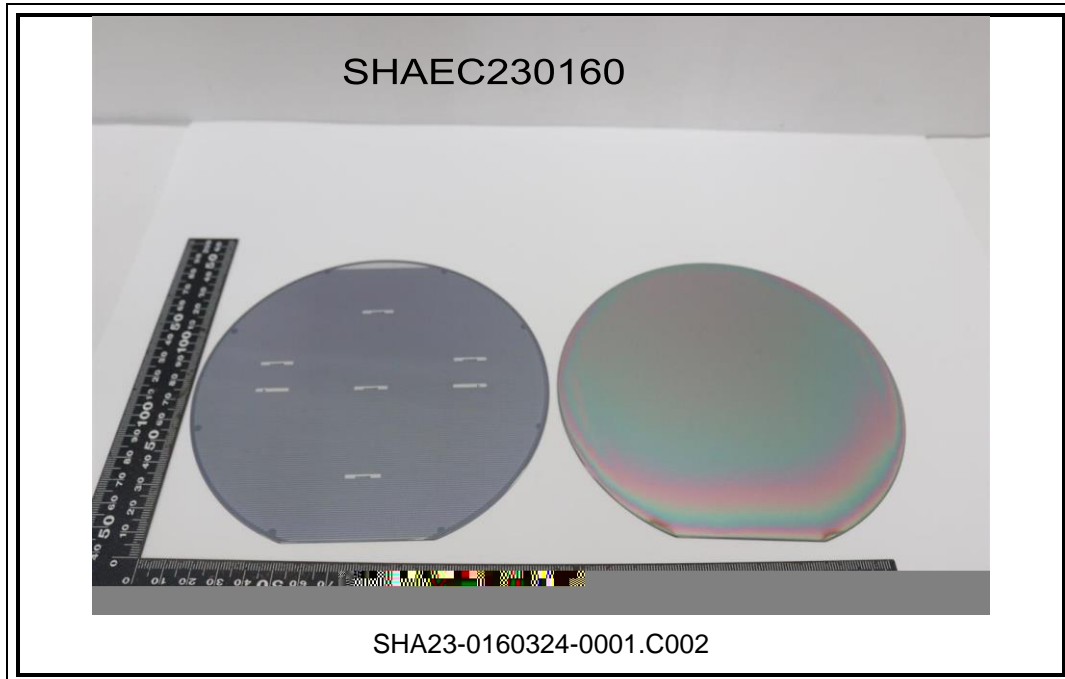
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Sample Photo:



SGS authenticate the photo on original report only
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