

# Test Report

No.: SHAEC24020925901\_1

Date: Oct 08, 2024

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Client Name: CSMC Technologies FAB2 CO.,LTD

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

Sample Name: 6 IN WAFER

Model No.: HVIC (BCD)

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

**THIS REPORT IS TO SUPERSEDE TEST REPORT NO.SHAEC24020925901, DATE: Sep 19, 2024.**

SGS Job No.: TIC1020240911135718J2XY

Sample Receiving Date: Sep 11, 2024

Testing Period: Sep 11, 2024 ~ Sep 19, 2024

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        |
| Halogen                                                                                                                                                                                                                                                                                                                   | See Results |
| Hexabromocyclododecane (HBCDD)                                                                                                                                                                                                                                                                                            | See Results |
| TBBP-A                                                                                                                                                                                                                                                                                                                    | See Results |
| Perfluorooctanoic acid (PFOA) and its salts, Perfluorooctane sulfonic acid (PFOS) and its derivatives                                                                                                                                                                                                                     | See Results |

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



Jenny Lan  
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         | SHA24-0209259-0001.C001 | 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 (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, IEC 62321-6:2015 and IEC 62321-8:2017, 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   | ND |
| Mercury (Hg)                              | 1000  | mg/kg   | 2   | ND |
| Cadmium (Cd)                              | 100   | mg/kg   | 2   | ND |
| Hexavalent Chromium (Cr(VI))              | 1000  | mg/kg   | 8   | ND |
| Polybromobiphenyl (PBB)                   | 1000  | mg/kg   | -   | ND |
| Monobrominated biphenyl (MonoBB)          | -     | mg/kg   | 5   | ND |
| Dibrominated biphenyl (DiBB)              | -     | mg/kg   | 5   | ND |
| Tribrominated biphenyl (TriBB)            | -     | mg/kg   | 5   | ND |
| Tetrabrominated biphenyl (TetraBB)        | -     | mg/kg   | 5   | ND |
| Pentabrominated biphenyl (PentaBB)        | -     | mg/kg   | 5   | ND |
| Hexabrominated biphenyl (HexaBB)          | -     | mg/kg   | 5   | ND |
| Heptabrominated biphenyl (HeptaBB)        | -     | mg/kg   | 5   | ND |
| Octabrominated biphenyl (OctaBB)          | -     | mg/kg   | 5   | ND |
| Nonabrominated biphenyl (NonaBB)          | -     | mg/kg   | 5   | ND |
| Decabrominated biphenyl (DecaBB)          | -     | mg/kg   | 5   | ND |
| Polybromodiphenyl ether (PBDE)            | 1000  | mg/kg   | -   | ND |
| Monobrominated diphenyl ether (MonoBDE)   | -     | mg/kg   | 5   | ND |
| Dibrominated diphenyl ether (DiBDE)       | -     | mg/kg   | 5   | ND |
| Tribrominated diphenyl ether (TriBDE)     | -     | mg/kg   | 5   | ND |
| Tetrabrominated diphenyl ether (TetraBDE) | -     | mg/kg   | 5   | ND |
| Pentabrominated diphenyl ether (PentaBDE) | -     | mg/kg   | 5   | ND |
| Hexabrominated diphenyl ether (HexaBDE)   | -     | mg/kg   | 5   | ND |
| Heptabrominated diphenyl ether (HeptaBDE) | -     | mg/kg   | 5   | ND |

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| Test Item(s)                                                             | CAS No.    | Unit(s) | MDL   | A1 |
|--------------------------------------------------------------------------|------------|---------|-------|----|
| <b>PFOS, its salts and related compounds</b>                             |            |         |       |    |
| Perfluorooctane sulfonic acid (PFOS), its salts^                         | 1763-23-1  | mg/kg   | 0.010 | ND |
| 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 Perfluorooctane sulfonic acid (PFOS) and its derivatives          | -          | mg/kg   | -     | ND |
| <b>PFOA, its salts</b>                                                   |            |         |       |    |
| 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.

| Substance Name                                                                                                                                                                                 | CAS No.     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>PFOS, its salts &amp; derivatives</b>                                                                                                                                                       |             |
| 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 <sub>4</sub> )                                                                                                                                      | 29081-56-9  |
| Perfluorooctane sulfonate diethanolamine salt (PFOS-NH <sub>2</sub> (C <sub>2</sub> H <sub>4</sub> OH) <sub>2</sub> )                                                                          | 70225-14-8  |
| Perfluorooctanesulfonic acid,tetraethylammonium salt (PFOS-N(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> )                                                                                    | 56773-42-3  |
| N-decyl-N,N-dimethyldodecan-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluorooctane-1-sulfonate (PFOS-N(C <sub>10</sub> H <sub>21</sub> ) <sub>2</sub> (CH <sub>3</sub> ) <sub>2</sub> ) | 251099-16-8 |
| TetrabutylAmmonium perfluorooctanesulfonate (PFOS-N(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> )                                                                                             | 111873-33-7 |
| Perfluorooctane Sulfonyl fluoride (PFOS-F)                                                                                                                                                     | 307-35-7    |
| Magnesium bis(heptafluorooctanesulphonate) (PFOS-Mg)                                                                                                                                           | 91036-71-4  |
| Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluorooctanesulfonate                                                                                                                        | 71463-74-6  |

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|                                                                                                                                                           |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Perfluorooctanesulfonate                                                                                                                                  | 45298-90-6   |
| Triethylammonium perfluorooctane sulfonate (PFOS-N(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> )                                                         | 54439-46-2   |
| Tetramethylammonium perfluorooctane sulfonate (PFOS-N(CH <sub>3</sub> ) <sub>4</sub> )                                                                    | 56773-44-5   |
| N,N,N-Tripropylpentan-1-aminium heptadecafluorooctane-1-sulfonate (PFOS-N(C <sub>3</sub> H <sub>7</sub> ) <sub>3</sub> (C <sub>5</sub> H <sub>11</sub> )) | 56773-56-9   |
| N,N-Dibutyl-N-methylbutan-1-aminium heptadecafluorooctane-1-sulfonate (PFOS-N(C <sub>4</sub> H <sub>9</sub> ) <sub>3</sub> (CH <sub>3</sub> ))            | 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 <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> )                                                   | 2185049-59-4 |
| Perfluorooctanesulfonic acid diethylamine salt (PFOS-C <sub>4</sub> H <sub>11</sub> N)                                                                    | 2205029-08-7 |
| heptyldimethyl{2-[(2-methylprop-2-enoyl)oxy]ethyl}azanium heptadecafluorooctane-1-sulfonate (PFOS-C <sub>15</sub> H <sub>30</sub> NO <sub>2</sub> )       | 1203998-97-3 |
| Perfluorooctane sulfonic anhydride (PFOSAN)                                                                                                               | 423-92-7     |
| <b>FOSAA, its salts</b>                                                                                                                                   |              |
| 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  |
| <b>N-MeFOSAA, its salts</b>                                                                                                                               |              |
| 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   |
| <b>N-EtFOSAA, its salts</b>                                                                                                                               |              |
| 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 <sub>4</sub> )                                                                       | 2991-52-8    |
| Sodium 2-(N-ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA-Na)                                                                                       | 3871-50-9    |
| <b>PFOSA, its salts</b>                                                                                                                                   |              |
| 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 <sub>4</sub> )                                                                                   | 76752-72-2   |

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|                                                                                                                 |              |
|-----------------------------------------------------------------------------------------------------------------|--------------|
| Heptadecafluorooctane-1-sulphonamide, compound with triethylamine (1:1) (PFOA-C <sub>6</sub> H <sub>15</sub> N) | 76752-82-4   |
| <b>PFOA, its salts &amp; derivatives</b>                                                                        |              |
| 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(C <sub>4</sub> H <sub>10</sub> 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 <sub>2</sub> O) <sub>2</sub> )                      | 98065-31-7   |
| Perfluorooctanoic acid compd. with ethanamine (1:1) (PFOA-C <sub>2</sub> H <sub>7</sub> N)                      | 1376936-03-6 |
| Pentadecafluorooctanoic acid--pyridine (1/1) (PFOA-C <sub>5</sub> H <sub>5</sub> N)                             | 95658-47-2   |
| pentadecafluorooctanoic acid- 1-phenylpiperazine(1:1) (PFOA-C <sub>10</sub> H <sub>14</sub> N <sub>2</sub> )    | 1514-68-7    |
| N,N,N-Trimethyloctan-1-aminium pentadecafluorooctanoate (PFOA-C <sub>11</sub> H <sub>26</sub> N)                | 927835-01-6  |

This report updates Model No..

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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**No.:**

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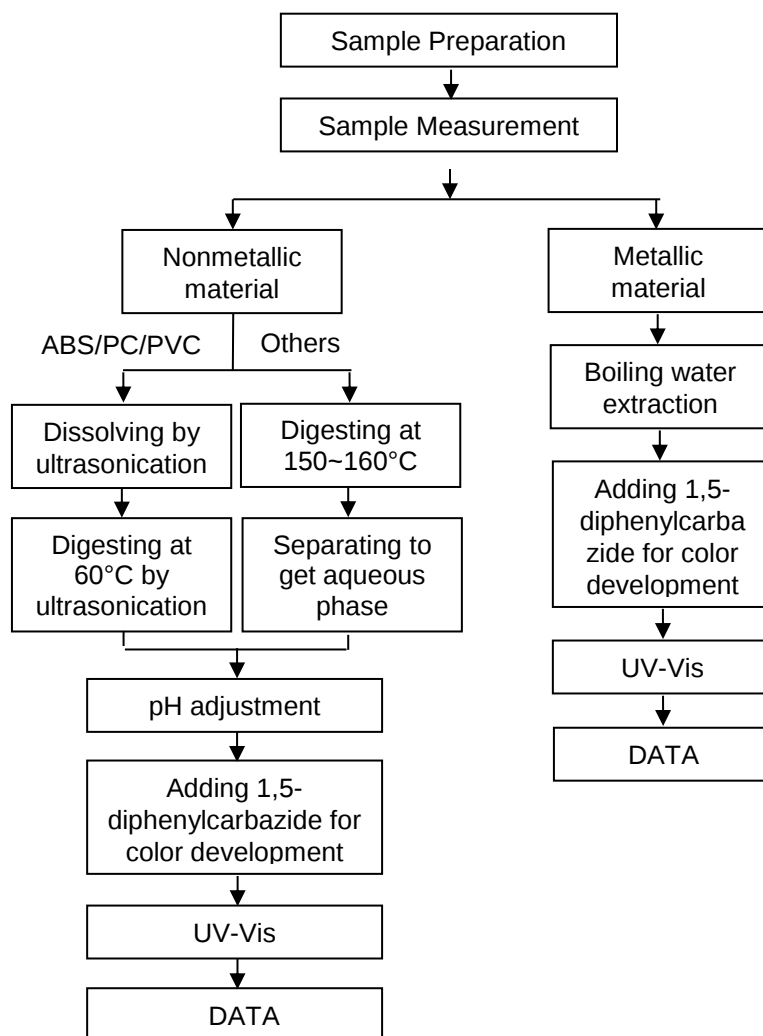
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### ATTACHMENTS

### 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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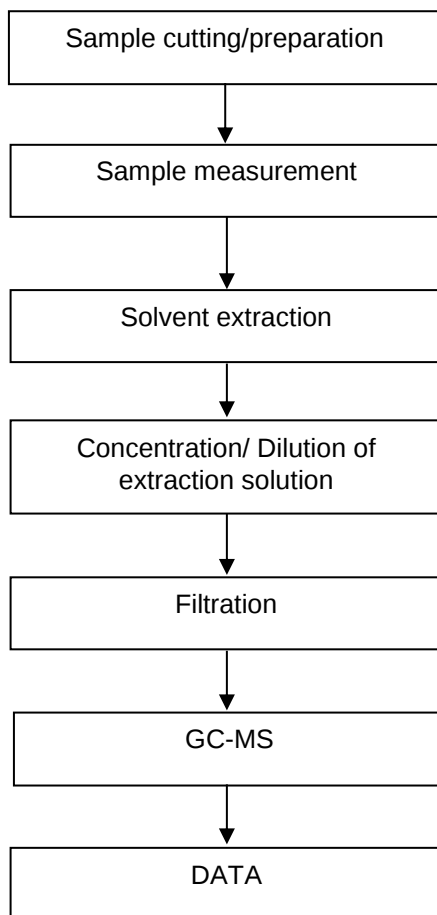
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## ATTACHMENTS

### PBB/PBDE Testing Flow Chart

Name of the person who made testing: Gary Xu

Name of the person in charge of testing: Carol Cui



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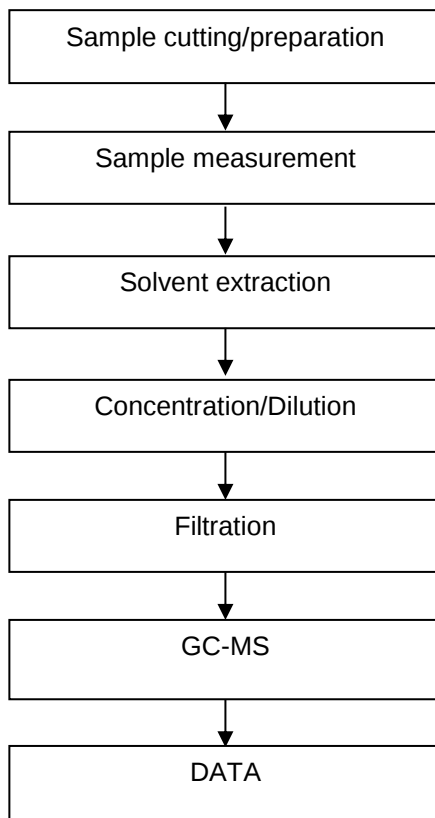
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### ATTACHMENTS

#### Phthalates Testing Flow Chart

Name of the person who made testing: Sherry Shi

Name of the person in charge of testing: Carol Cui



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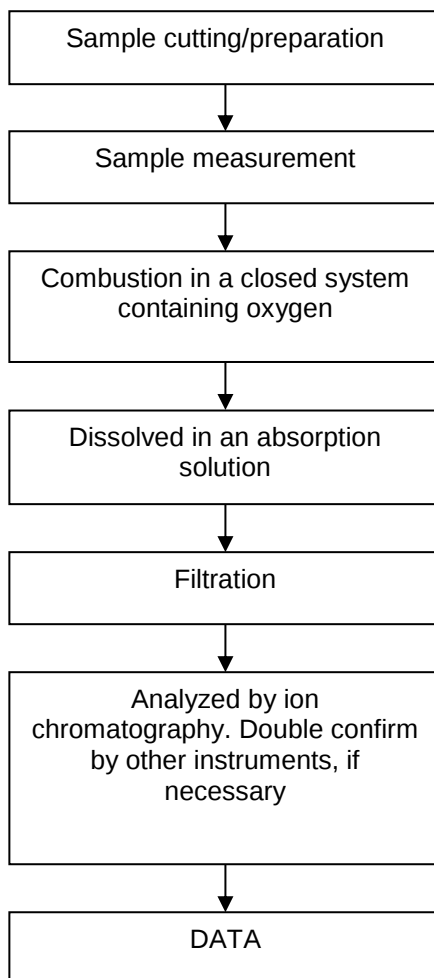
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## ATTACHMENTS

## Halogen Testing Flow Chart

Name of the person who made testing: Andy Zhang

Name of the person in charge of testing: Gordon Mu





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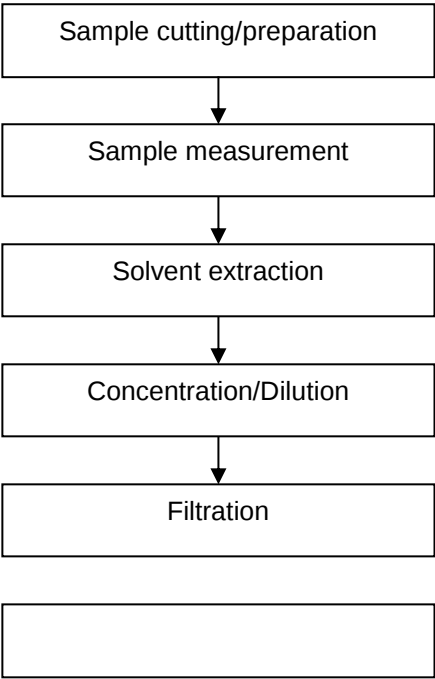
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ATTACHMENTS

HBCDD Testing Flow Chart

Name of the person who made testing: Gary Xu  
Name of the person in charge of testing: Carol Cui



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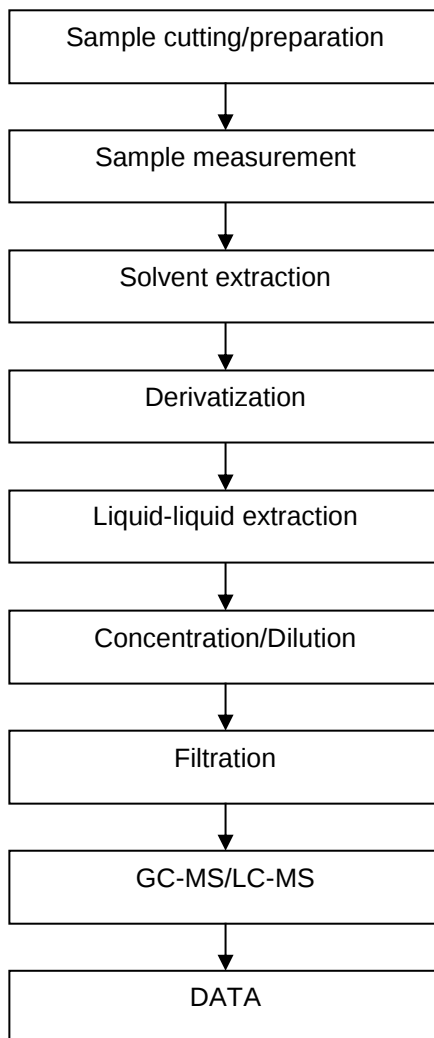
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## ATTACHMENTS

## TBBP-A Testing Flow Chart

Name of the person who made testing: Gary Xu

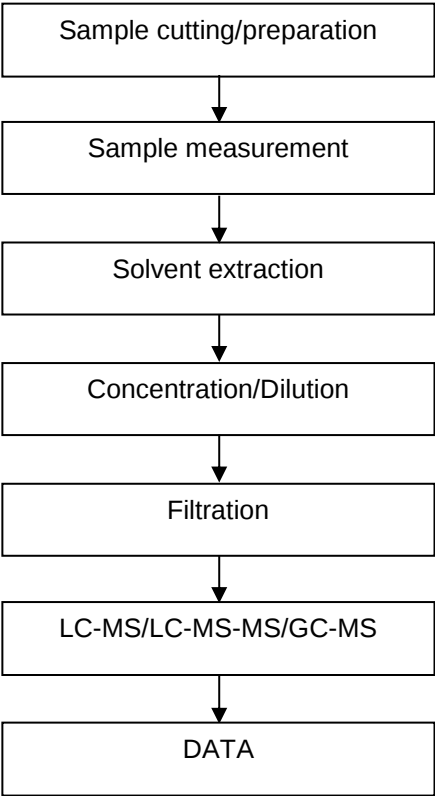
Name of the person in charge of testing: Carol Cui





PFASs/ PFOS/PFOA Testing Flow Chart

Name of the person who made testing: Ance Chen  
Name of the person in charge of testing: Liyas Wang



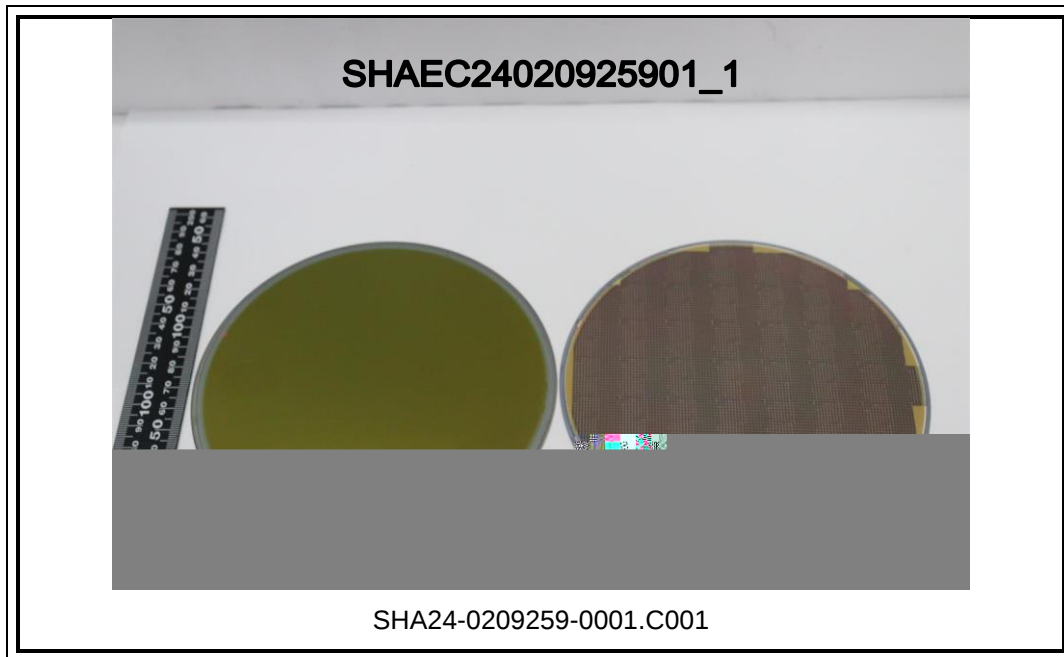
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Sample Photo:



SGS authenticate the photo on original report only  
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