

## Test Report

No.: SHAEC23020929201

Date: Dec 18, 2023

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Client Name: JCET SEMICONDUCTOR (SUQIAN) CO., LTD.

Client Address: NO.5 PU TUOSHAN RD.SUZHOU SUQIAN INDUSTRIAL PARK,SUQIAN JIANGSU,CHINA

Sample Name: SOP Green Epoxy

Client Ref. Information: Include(SOP6/7/8/12/14/16/20/24/28/30,SOP8/PP,SOP16/PP,SSOP14/PP,SSOP16/PP,SSOP9/10/16/20/24/28,HSOP6/28/32/34/38,HSOP28/PP,HSSOP32/PP,MSOP8/10/20,MSOP8/PP,MSOP10/PP,TSSOP8/14/16/20/24/28/30/38,TSSOP16/PP,TSSOP20/PP,TSSOP24/PP,TSSOP28/PP,TSSOP38/PP,SOP8(FC),CSOP10,VSOP8,USOP8(8R))

Composition: Silvery Metal Part Black Plastic Part

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

SGS Job No.: SHP23-021886

Sample Receiving Date: Dec 12, 2023

Testing Period: Dec 12, 2023 ~ Dec 18, 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 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 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 |            |

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



Jenny Lan  
Approved Signatory



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| Test Requirement                                                                                      | Conclusion  |
|-------------------------------------------------------------------------------------------------------|-------------|
| Phthalates                                                                                            | See Results |
| Perfluorooctane Sulfonates (PFOS) and its derivatives and Perfluorooctanoic Acid (PFOA) and its salts | See Results |
| AfPS GS 2019:01 PAK-Polycyclic Aromatic Hydrocarbons (PAHs)                                           | See Results |

## Test Result(s):

### Test Part Description

| SN ID | Sample No. | SGS Sample ID           | Description            |
|-------|------------|-------------------------|------------------------|
| SN1   | A1         | SHA23-0209292-0001.C001 | Black body part        |
| SN2   | A2         | SHA23-0209292-0001.C002 | Silvery metal pin part |

### 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 (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, AAS, UV-Vis and GC-MS.

| Test Item(s)                       | Limit | Unit(s) | MDL | A1 |
|------------------------------------|-------|---------|-----|----|
| 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 |

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| Test Item(s)                       | Limit | Unit(s) | MDL | A1 |
|------------------------------------|-------|---------|-----|----|
| 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 |
| 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.

### **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)**

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015 and IEC 62321-6:2015, analysis was performed by ICP-OES, AAS, 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    | 8  |
| Mercury(Hg)                    | 1000  | mg/kg              | 2    | ND |
| Hexavalent Chromium (Cr(VI)) ▼ | -     | µg/cm <sup>2</sup> | 0.10 | 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 |

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| Test Item(s)                     | Limit | Unit(s) | MDL | A2 |
|----------------------------------|-------|---------|-----|----|
| Nonabromodiphenylether (NonaBDE) | -     | mg/kg   | 5   | ND |
| Decabromodiphenylether (DecaBDE) | -     | mg/kg   | 5   | ND |

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| Test Item(s)                       | CAS No.                   | Unit(s) | MDL | A1 |
|------------------------------------|---------------------------|---------|-----|----|
| Diisononyl Phthalate (DINP)        | 28553-12-0<br>/68515-48-0 | mg/kg   | 50  | ND |
| Di-n-Octyl Phthalate(DNOP)         | 117-84-0                  | mg/kg   | 50  | ND |
| Diisodecyl Phthalate (DIDP)        | 26761-40-0<br>/68515-49-1 | mg/kg   | 50  | ND |
| Bis(2-methoxyethyl)phthalate(DMEP) | 117-82-8                  | mg/kg   | 50  | ND |
| Di-n-Hexyl Phthalate(DnHP)         | 84-75-3                   | mg/kg   | 50  | ND |
| Dipentyl Phthalate                 | 131-18-0                  | mg/kg   | 50  | 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   | A1 |
|---------------------------------------------------------------|------------|---------|-------|----|
| 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 |
| 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-NH<sub>4</sub> (CAS No. 29081-56-9), PFOS-N(C<sub>10</sub>H<sub>21</sub>)<sub>2</sub>(CH<sub>3</sub>)<sub>2</sub> (CAS No. 251099-16-8), PFOS-NH<sub>2</sub>(C<sub>2</sub>H<sub>4</sub>OH)<sub>2</sub> (CAS No. 70225-14-8), PFOS-Li (CAS No. 29457-72-5), PFOS-N(C<sub>2</sub>H<sub>5</sub>)<sub>4</sub> (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.

### **AfPS GS 2019:01 PAK-Polycyclic Aromatic Hydrocarbons (PAHs)**

Test Method: With reference to AfPS GS 2019:01 PAK, analysis was performed by GC-MS.

| Test Item(s)        | CAS No.  | Unit(s) | MDL | A1 |
|---------------------|----------|---------|-----|----|
| Benzo(a)pyrene(BaP) | 50-32-8  | mg/kg   | 0.1 | ND |
| Benzo(e)pyrene(BeP) | 192-97-2 | mg/kg   | 0.1 | ND |

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| Test Item(s)                                                                    | CAS No.  | Unit(s) | MDL | A1 |
|---------------------------------------------------------------------------------|----------|---------|-----|----|
| Benzo(a)anthracene(BaA)                                                         | 56-55-3  | mg/kg   | 0.1 | ND |
| Benzo(b)Fluoranthene(BbF)                                                       | 205-99-2 | mg/kg   | 0.1 | ND |
| Benzo(j)fluoranthene(BjF)                                                       | 205-82-3 | mg/kg   | 0.1 | ND |
| Benzo(k)Fluoranthene(BkF)                                                       | 207-08-9 | mg/kg   | 0.1 | ND |
| Chrysene(CHR)                                                                   | 218-01-9 | mg/kg   | 0.1 | ND |
| Dibenzo(a,h)Anthracene(DBA)                                                     | 53-70-3  | mg/kg   | 0.1 | ND |
| Benzo(g,h,i)perylene(BPE)                                                       | 191-24-2 | mg/kg   | 0.1 | ND |
| Indeno(1,2,3-c,d)pyrene(IPY)                                                    | 193-39-5 | mg/kg   | 0.1 | ND |
| Phenanthrene(PHE)                                                               | 85-01-8  | mg/kg   | 0.1 | ND |
| Pyrene(PYR)                                                                     | 129-00-0 | mg/kg   | 0.1 | ND |
| Anthracene(ANT)                                                                 | 120-12-7 | mg/kg   | 0.1 | ND |
| Fluoranthene(FLT)                                                               | 206-44-0 | mg/kg   | 0.1 | ND |
| Sum of Phenanthrene(PHE),<br>Pyrene(PYR), Anthracene(ANT),<br>Fluoranthene(FLT) | -        | mg/kg   | -   | ND |

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|                                                                               |         |         |          |          |          |
|-------------------------------------------------------------------------------|---------|---------|----------|----------|----------|
| Benzo(b)fluoranthene (BbF) mg/kg                                              | < 0.2   | < 0.2   | < 0.5    | < 0.5    | < 1      |
| Benzo(j)fluoranthene (BjF) mg/kg                                              | < 0.2   | < 0.2   | < 0.5    | < 0.5    | < 1      |
| Benzo(k)fluoranthene (BkF)mg/kg                                               | < 0.2   | < 0.2   | < 0.5    | < 0.5    | < 1      |
| Chrysene (CHR) mg/kg                                                          | < 0.2   | < 0.2   | < 0.5    | < 0.5    | < 1      |
| Dibenzo(a,h)anthracene (DBA) mg/kg                                            | < 0.2   | < 0.2   | < 0.5    | < 0.5    | < 1      |
| Benzo(g,h,i)perylene (BPE) mg/kg                                              | < 0.2   | < 0.2   | < 0.5    | < 0.5    | < 1      |
| Indeno(1,2,3-cd)pyrene (IPY) mg/kg                                            | < 0.2   | < 0.2   | < 0.5    | < 0.5    | < 1      |
| Phenanthrene (PHE), pyrene (PYR), anthracene (ANT), fluoranthene (FLT), mg/kg | < 1 Sum | < 5 Sum | < 10 Sum | < 20 Sum | < 50 Sum |
| Naphthalene (NAP) mg/kg                                                       | < 1     | < 2     |          | < 10     |          |
| <b>Sum of 15 PAHs</b>                                                         | <1      | < 5     | < 10     | < 20     | < 50     |

Notes:

<sup>a</sup> A "Child" is legal

all

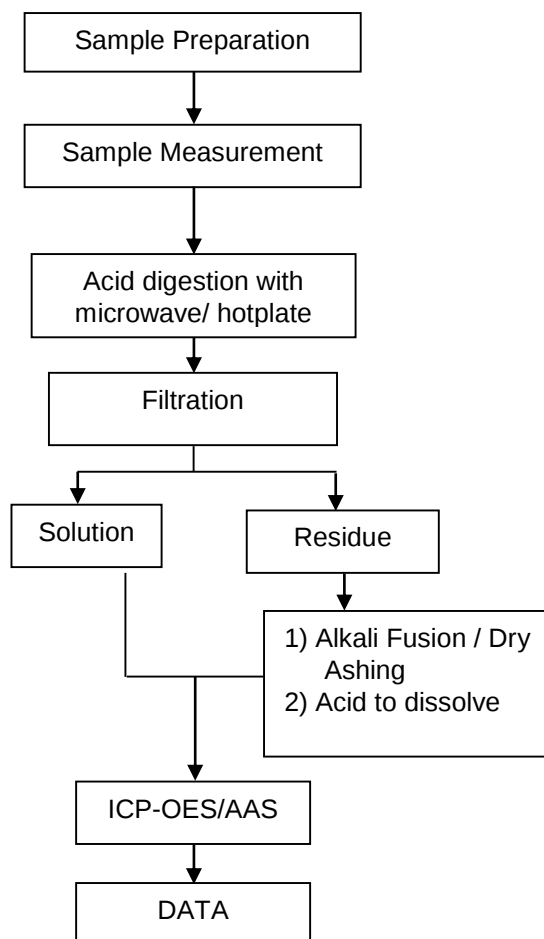
## ATTACHMENTS

### Elements Testing Flow Chart

Name of the person who made testing: Meria Jin/Sielina Song

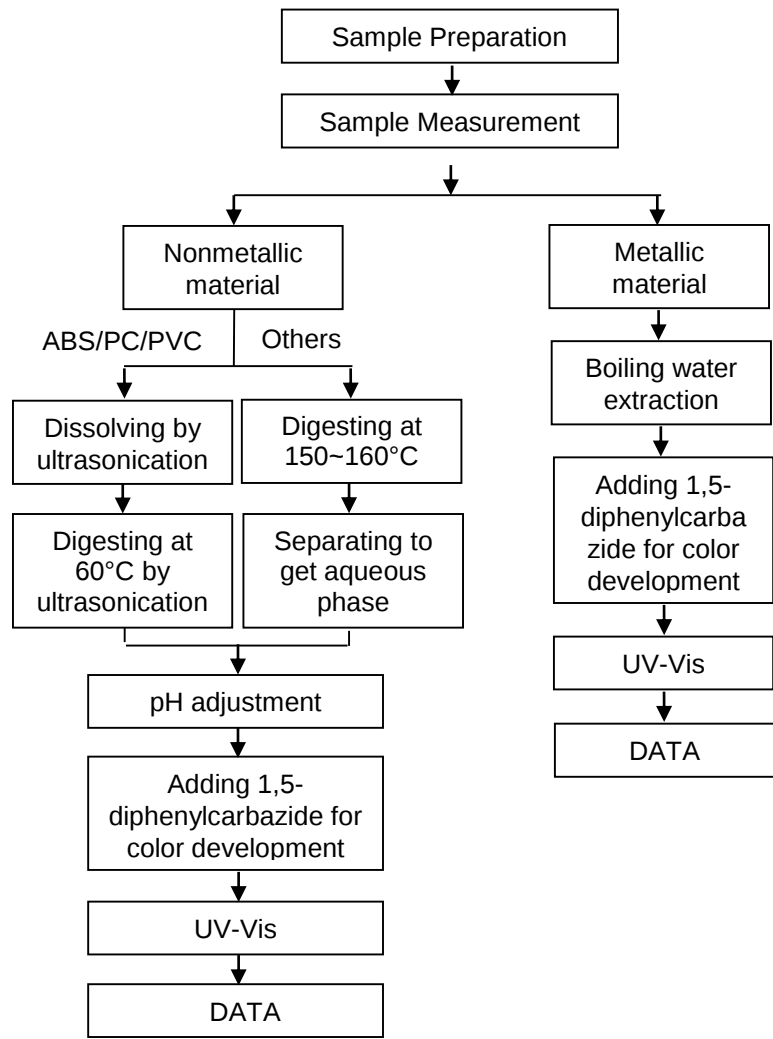
Name of the person in charge of testing: Luna Xu/Bob Zhang

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



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

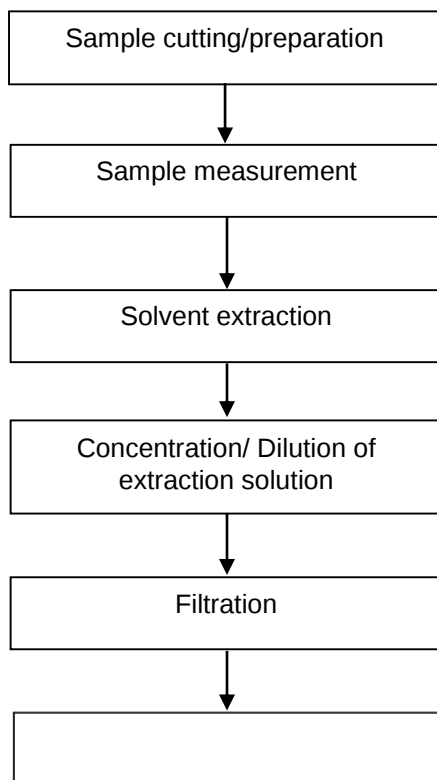


ATTACHMENTS

**PBBs/PBDEs Testing Flow Chart**

Name of the person who made testing: Lucky Liu

Name of the person in charge of testing: Sherry Shi

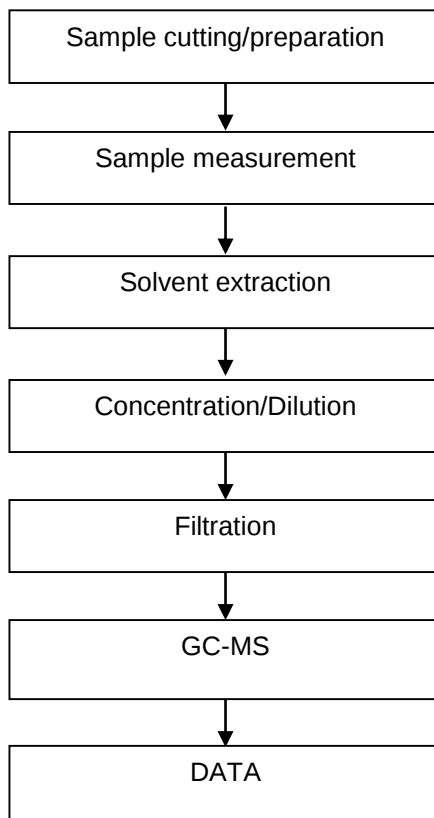


## ATTACHMENTS

### Phthalates Testing Flow Chart

Name of the person who made testing: Lucky Liu

Name of the person in charge of testing: Sherry Shi

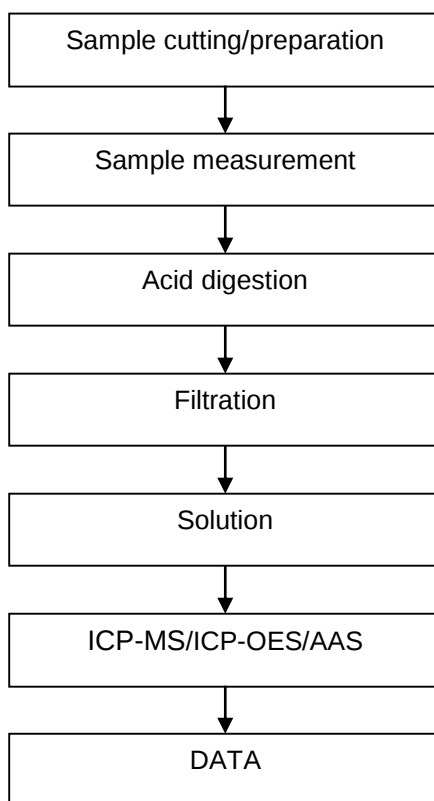


ATTACHMENTS

Elements Testing Flow Chart

Name of the person who made testing: Meria Jin/Sielina Song

Name of the person in charge of testing: Luna Xu/Bob Zhang

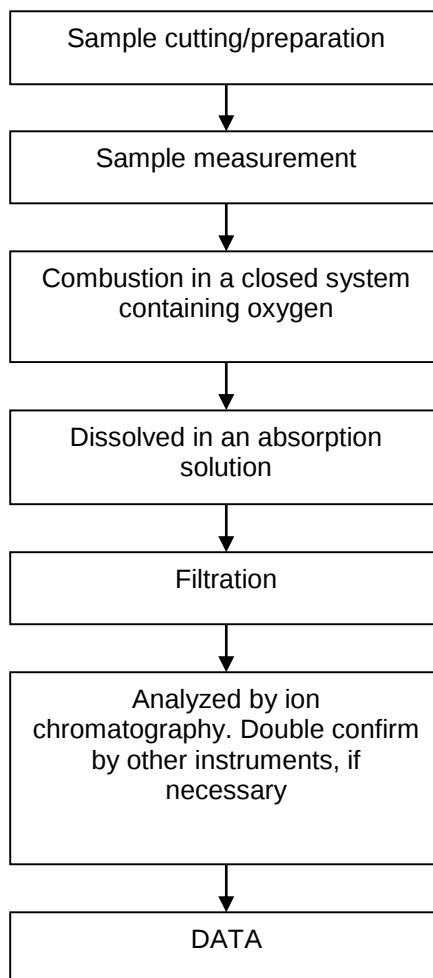


ATTACHMENTS

**Halogen Testing Flow Chart**

Name of the person who made testing: Andy Zhang

Name of the person in charge of testing: Allen Chen

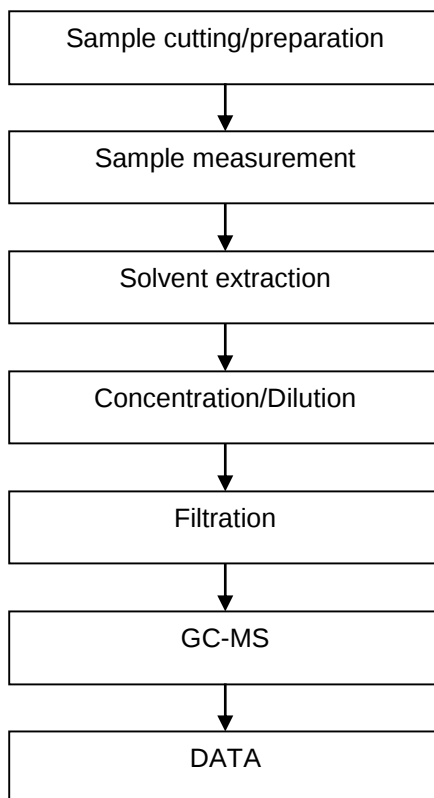


## ATTACHMENTS

### HBCDD Testing Flow Chart

Name of the person who made testing: Lucky Liu

Name of the person in charge of testing: Sherry Shi

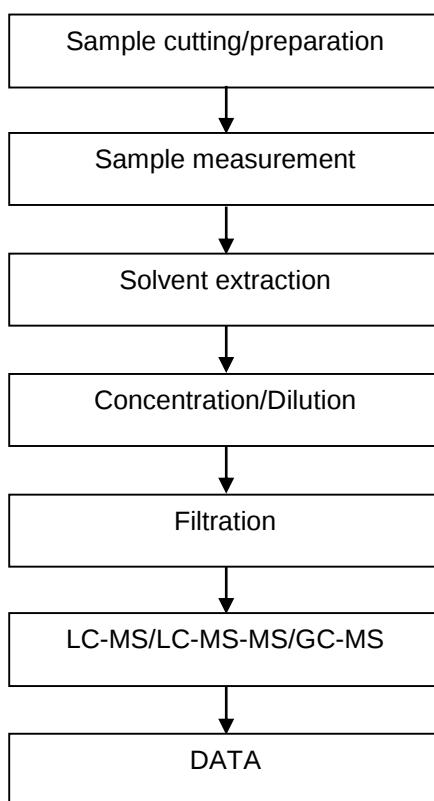


ATTACHMENTS

**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

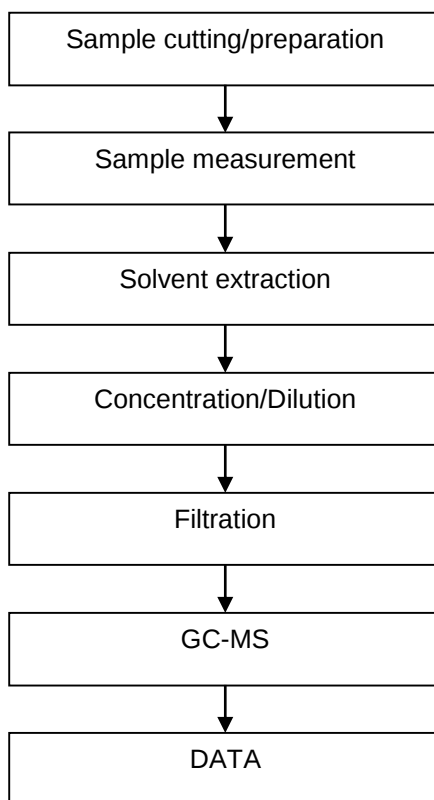


**ATTACHMENTS**

**PAHs Testing Flow Chart**

Name of the person who made testing: Nina Fang

Name of the person in charge of testing: Liyas Wang



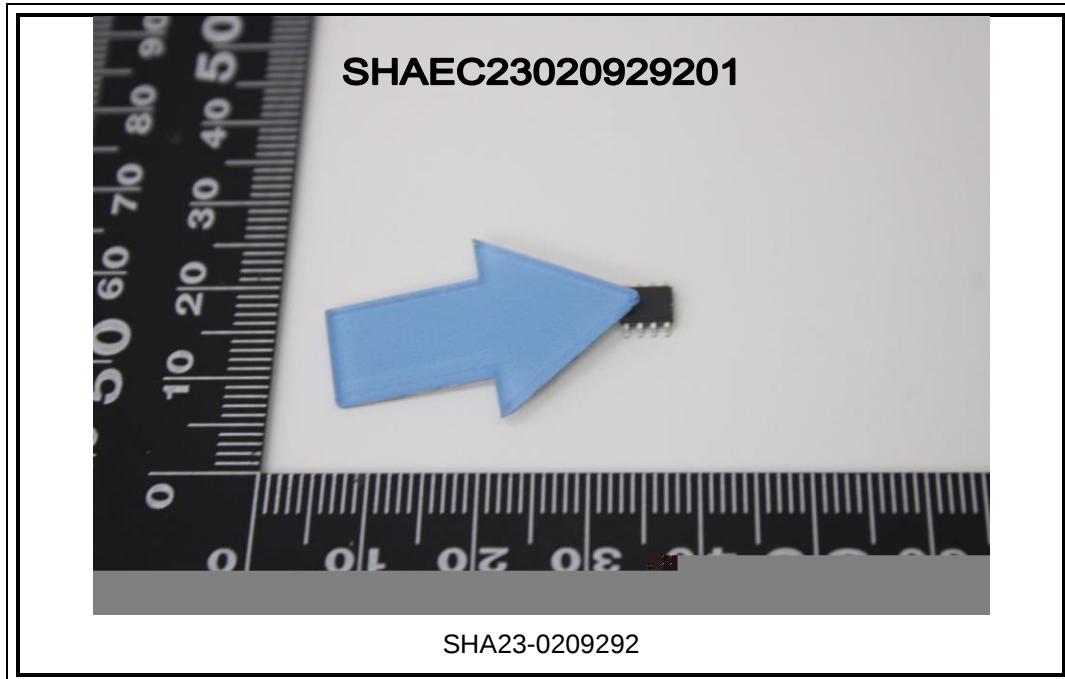
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Sample Photo:



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