

# Test Report

Report No. A2180042778101012R1

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**Applicant** SHENGYI TECHNOLOGY(SUZHOU) CO.,LTD.

**Address** 288# XINGLONG STREET, SUZHOU INDUSTRIAL PARK, JIANGSU PROVINCE

**The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client**

|                      |   |
|----------------------|---|
| Sample Name(s)       | Prepreg                                       |
| Part No.             | S0401150                                      |
| Color                | Yellow  |
| Item No.             | 1833121794                                    |
| Material             | Epoxy Resin 、 Continuous Filament Fiber Glass |
| Sample Received Date | Apr. 4, 2018                                  |
| Testing Period       | Apr. 4, 2018 to Apr. 12, 2018                 |

**Test Requested**

As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Arsenic(As), Beryllium(Be), Antimony(Sb), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Phthalates, Perfluorooctanoic Acid (PFOA), Perfluorooctane Sulfonates (PFOS), Polyvinyl Chloride (PVC), Tetrabromobisphenol A (TBBP-A), Hexabromocyclododecane (HBCDD), Polycyclic Aromatic Hydrocarbons(PAHs) in the submitted sample(s).

**Test Method/Test Result(s)** Please refer to the following page(s).

Tested by

Ziu Jie

Reviewed by

Dong Yong min

Approved by

Su Hongwei

Date

Apr. 17, 2018

Su Hongwei

Senior Laboratory Manager

No. R198691944

Centre Testing International Pimiao(Shanghai) Co., Ltd.

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## Test Method

| Tested Item(s)   | Test Method   | Measured Equipment(s) |
|--|---|-----------------------|
| Lead(Pb)   | IEC 62321-5:2013  | ICP-OES               |
| Cadmium(Cd)  | IEC 62321-5:2013  | ICP-OES               |
| Mercury(Hg)  | IEC 62321-4:2013+AMD1:2017 CSV  | ICP-OES               |
| Hexavalent Chromium(Cr(VI))  | IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013 | UV-Vis/ICP-OES        |
| Polybrominated Biphenyls(PBBs)   | IEC 62321-6:2015  | GC-MS                 |
| Polybrominated Diphenyl Ethers (PBDEs)   | IEC 62321-6:2015  | GC-MS                 |
| Phthalates (DBP, BBP, DEHP, DIBP)  | IEC 62321-8:2017  | GC-MS                 |
| Arsenic(As)  | Refer to US EPA 3052:1996 & US EPA 6010D:2014                                 | ICP-OES               |
| Beryllium(Be)  | Refer to US EPA 3052:1996 & US EPA 6010D:2014                                 | ICP-OES               |
| Antimony(Sb)   | Refer to US EPA 3052:1996 & US EPA 6010D:2014                                 | ICP-OES               |
| Fluorine (F)   | Refer to EN 14582:2016  | IC                    |
| Chlorine (Cl)  | Refer to EN 14582:2016  | IC                    |
| Bromine (Br)   | Refer to EN 14582:2016  | IC                    |
| Iodine (I)   | Refer to EN 14582:2016  | IC                    |
| Phthalates (DNOP, DINP, DIDP, DMP, DEP, DPP, DCHP, DIOP, DNP, DNHP, DMEP, DIPP, DHNUP, DIHP) | Refer to EN 14372:2004(E)   | GC-MS                 |
| Perfluorooctanoic Acid (PFOA)  | Refer to US EPA 3550C:2007 & US EPA 8321B:2007                                | LC-MS-MS              |
| Perfluorooctane Sulfonates (PFOS)  | Refer to US EPA 3550C:2007 & US EPA 8321B:2007                                | LC-MS-MS              |
| Polyvinyl Chloride (PVC)   | JY/T 001:1996   | FT-IR                 |
| Tetrabromobisphenol A (TBBP-A)   | Refer to US EPA 3550C:2007 & US EPA 8270D:2014                                | LC-MS-MS              |
| Hexabromocyclododecane (HBCDD)   | Refer to US EPA 3550C:2007 & US EPA 8270D:2014                                | GC-MS                 |
| Polycyclic Aromatic Hydrocarbons (PAHs)  | AfPS GS 2014:01 PAK   | GC-MS                 |

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## Test Result(s)

| Tested Item(s)               | Result | MDL     |
|------------------------------|--------|---------|
| Lead (Pb)                    | N.D.   | 2 mg/kg |
| Cadmium (Cd)                 | N.D.   | 2 mg/kg |
| Mercury (Hg)                 | N.D.   | 2 mg/kg |
| Hexavalent Chromium (Cr(VI)) | N.D.   | 8 mg/kg |

| Tested Item(s)                        | Result | MDL     |
|---------------------------------------|--------|---------|
| <b>Polybrominated Biphenyls(PBBs)</b> |        |         |
| Monobromobiphenyl                     | N.D.   | 5 mg/kg |
| Dibromobiphenyl                       | N.D.   | 5 mg/kg |
| Tribromobiphenyl                      | N.D.   | 5 mg/kg |
| Tetrabromobiphenyl                    | N.D.   | 5 mg/kg |
| Pentabromobiphenyl                    | N.D.   | 5 mg/kg |
| Hexabromobiphenyl                     | N.D.   | 5 mg/kg |
| Heptabromobiphenyl                    | N.D.   | 5 mg/kg |
| Octabromobiphenyl                     | N.D.   | 5 mg/kg |
| Nonabromobiphenyl                     | N.D.   | 5 mg/kg |
| Decabromobiphenyl                     | N.D.   | 5 mg/kg |

| Tested Item(s)                                | Result | MDL     |
|---|--------|---------|
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |        |         |
| Monobromodiphenyl ether                       | N.D.   | 5 mg/kg |
| Dibromodiphenyl ether                         | N.D.   | 5 mg/kg |
| Tribromodiphenyl ether                        | N.D.   | 5 mg/kg |
| Tetrabromodiphenyl ether                      | N.D.   | 5 mg/kg |
| Pentabromodiphenyl ether                      | N.D.   | 5 mg/kg |
| Hexabromodiphenyl ether                       | N.D.   | 5 mg/kg |
| Heptabromodiphenyl ether                      | N.D.   | 5 mg/kg |
| Octabromodiphenyl ether                       | N.D.   | 5 mg/kg |
| Nonabromodiphenyl ether                       | N.D.   | 5 mg/kg |
| Decabromodiphenyl ether                       | N.D.   | 5 mg/kg |

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| Tested Item(s)                                      | Result | MDL      |
|---|--------|----------|
| <b>Phthalates (DBP, BBP, DEHP, DIBP)</b>            |        |          |
| Dibutyl phthalate (DBP)<br>CAS#:84-74-2             | N.D.   | 50 mg/kg |
| Butyl benzyl phthalate<br>(BBP) CAS#:85-68-7        | N.D.   | 50 mg/kg |
| Di-(2-ethylhexyl) phthalate<br>(DEHP) CAS#:117-81-7 | N.D.   | 50 mg/kg |
| Diisobutyl phthalate (DIBP)<br>CAS#:84-69-5         | N.D.   | 50 mg/kg |

| Tested Item(s) | Result | MDL      |
|----------------|--------|----------|
| Arsenic (As)   | N.D.   | 10 mg/kg |
| Beryllium (Be) | N.D.   | 10 mg/kg |
| Antimony (Sb)  | N.D.   | 10 mg/kg |

| Tested Item(s) | Result      | MDL      |
|----------------|-------------|----------|
| Fluorine (F)   | 1090 mg/kg  | 10 mg/kg |
| Chlorine (Cl)  | 534 mg/kg   | 10 mg/kg |
| Bromine (Br)   | 70417 mg/kg | 10 mg/kg |
| Iodine (I)     | N.D.        | 10 mg/kg |

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| Tested Item(s)   | Result | MDL       |
|--|--------|-----------|
| <b>Phthalates</b>  |        |           |
| Di-n-octyl phthalate (DNOP) CAS#:117-84-0  | N.D.   | 50 mg/kg  |
| Di-isononyl phthalate (DINP)<br>CAS#:28553-12-0,68515-48-0   | N.D.   | 50 mg/kg  |
| Di-iso-decyl phthalate (DIDP)<br>CAS#:26761-40-0,68515-49-1  | N.D.   | 50 mg/kg  |
| Dimethyl phthalate (DMP) CAS#:131-11-3   | N.D.   | 50 mg/kg  |
| Diethyl phthalate (DEP) CAS#:84-66-2   | N.D.   | 50 mg/kg  |
| Dipentyl phthalate (DPP) CAS#:131-18-0   | N.D.   | 50 mg/kg  |
| Dicyclohexyl phthalate (DCHP) CAS#:84-61-7   | N.D.   | 50 mg/kg  |
| Diisooctyl phthalate (DIOP) CAS#:27554-26-3  | N.D.   | 50 mg/kg  |
| Dinonyl phthalate (DNP) CAS#:84-76-4   | N.D.   | 50 mg/kg  |
| Di-n-hexyl phthalate (DNHP) CAS#:84-75-3   | N.D.   | 50 mg/kg  |
| Bis(2-methoxyethyl) phthalate (DMEP)<br>CAS#:117-82-8  | N.D.   | 50 mg/kg  |
| Diisopentylphthalate (DIPP) CAS#:605-50-5  | N.D.   | 50 mg/kg  |
| *1,2-Benzenedicarboxylic acid,<br>di-(C7-11)-branched and linear alkyl esters<br>(DHNUP) CAS#:68515-42-4 | N.D.   | 100 mg/kg |
| *1,2-Benzenedicarboxylic acid, di-C6-8-branched<br>alkyl esters, C7-rich (DIHP) CAS#:71888-89-6          | N.D.   | 100 mg/kg |

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| Tested Item(s)                    | Result   | MDL     |
|-----------------------------------|----------|---------|
| Perfluorooctanoic Acid (PFOA)     | N.D.     | 5 mg/kg |
| Perfluorooctane Sulfonates (PFOS) | N.D.     | 5 mg/kg |
| Polyvinyl Chloride(PVC)           | Negative | /       |
| Hexabromocyclododecane (HBCDD)    | N.D.     | 5 mg/kg |
| Tetrabromobisphenol A(TBBP-A)     | N.D.     | 5 mg/kg |



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**Limits for PAHs content (mg/kg) for material of (grip) surfaces, which are to be categorized on account of the results of the risk analysis.**

| Parameters   | Category 1  | Category 2  |                | Category 3  |                |
|--|---|---|----------------|---|----------------|
|  | Materials intended to be put in the mouth or materials of toys with foreseeable long-term skin contact (longer than 30 seconds) | Materials not covered by category 1, with foreseeable skin contact for longer than 30 seconds (long-term skin contact) or repeated short-term skin contact <sup>#</sup> |                | Materials not covered by category 1 or 2 with foreseeable skin contact up to 30 seconds (short term skin contact) |                |
|  |   | Toys covered by Directive 2009/48/EC  | Other products | Toys covered by Directive 2009/48/EC  | Other products |
| Benzo[a]pyrene   | <0.2  | <0.2  | <0.5           | <0.5  | <1             |
| Benzo[e]pyrene   | <0.2  | <0.2  | <0.5           | <0.5  | <1             |
| Benzo[a]anthracene   | <0.2  | <0.2  | <0.5           | <0.5  | <1             |
| Benzo[b]fluoranthene   | <0.2  | <0.2  | <0.5           | <0.5  | <1             |
| Benzo[j]fluoranthene   | <0.2  | <0.2  | <0.5           | <0.5  | <1             |
| Benzo[k]fluoranthene   | <0.2  | <0.2  | <0.5           | <0.5  | <1             |
| Chrysene   | <0.2  | <0.2  | <0.5           | <0.5  | <1             |
| Dibenz[a,h]anthracene  | <0.2  | <0.2  | <0.5           | <0.5  | <1             |
| Benzo[g,h,i]perylene   | <0.2  | <0.2  | <0.5           | <0.5  | <1             |
| Indeno[1,2,3-cd]pyrene   | <0.2  | <0.2  | <0.5           | <0.5  | <1             |
| Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene | <1 Sum  | <5 Sum  | <10 Sum        | <20 Sum   | <50 Sum        |
| Naphthalene  | <1  | <2  |                | <10   |                |
| Sum 18 PAHs  | <1  | <5  | <10            | <20   | <50            |

<sup>#</sup> Formulation “of repeated short-term skin contact” REACH Annex XVII No. 50 supplement (REGULATION (EU) No.1272/2013)

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| Tested Item(s)   | Result | MDL       |
|--|--------|-----------|
| <b>Polycyclic Aromatic Hydrocarbons(PAHs)</b>  |        |           |
| Naphthalene  | N.D.   | 0.2 mg/kg |
| Acenaphthylene   | N.D.   | 0.2 mg/kg |
| Acenaphthene   | N.D.   | 0.2 mg/kg |
| Fluorene   | N.D.   | 0.2 mg/kg |
| Phenanthrene   | N.D.   | 0.2 mg/kg |
| Anthracene   | N.D.   | 0.2 mg/kg |
| Fluoranthene   | N.D.   | 0.2 mg/kg |
| Pyrene   | N.D.   | 0.2 mg/kg |
| Benzo[a]anthracene   | N.D.   | 0.2 mg/kg |
| Chrysene   | N.D.   | 0.2 mg/kg |
| Benzo[b]fluoranthene   | N.D.   | 0.2 mg/kg |
| Benzo[k]fluoranthene   | N.D.   | 0.2 mg/kg |
| Benzo[a]pyrene   | N.D.   | 0.2 mg/kg |
| Indeno[1,2,3-cd]pyrene   | N.D.   | 0.2 mg/kg |
| Dibenzo[a,h]anthracene   | N.D.   | 0.2 mg/kg |
| Benzo[g,h,i]perylene   | N.D.   | 0.2 mg/kg |
| Benzo[j]fluoranthene   | N.D.   | 0.2 mg/kg |
| Benzo[e]pyrene   | N.D.   | 0.2 mg/kg |
| Sum (Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene) | N.D.   | /         |
| Sum 18 PAHs  | N.D.   | /         |

**Tested Sample/Part Description** Yellow resin board

**Remark:** The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury, Arsenic, Beryllium, Antimony.

-MDL = Method Detection Limit

-N.D. = Not Detected (&lt;MDL)

-mg/kg = ppm = parts per million

-\*= In view of the substances are established as UVCB substances

(substances of unknown or variable composition, complex reaction products or biological materials) consisting of different and variable constituents, the test results are calculated based on the main constituents of the representative compounds for substances.

-Negative = Not contained Polyvinyl Chloride (PVC)

**Note:** This testing report displaces the original report of No. A2180042778101012, and the original one No. A2180042778101012 was invalid since the date of this testing report released.



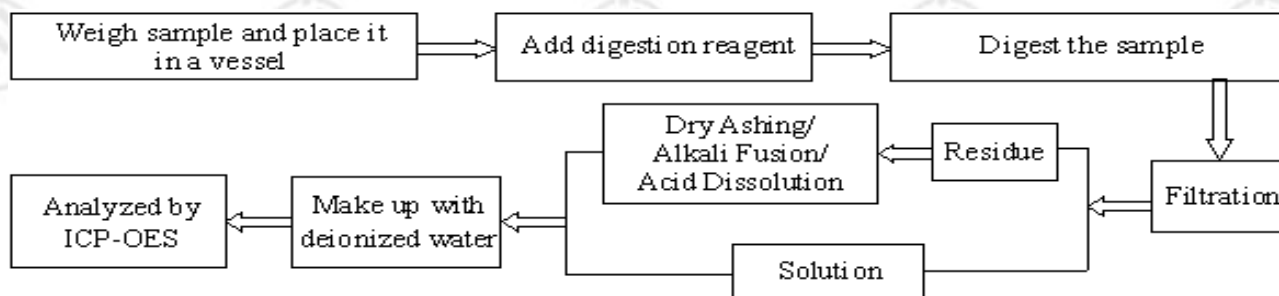
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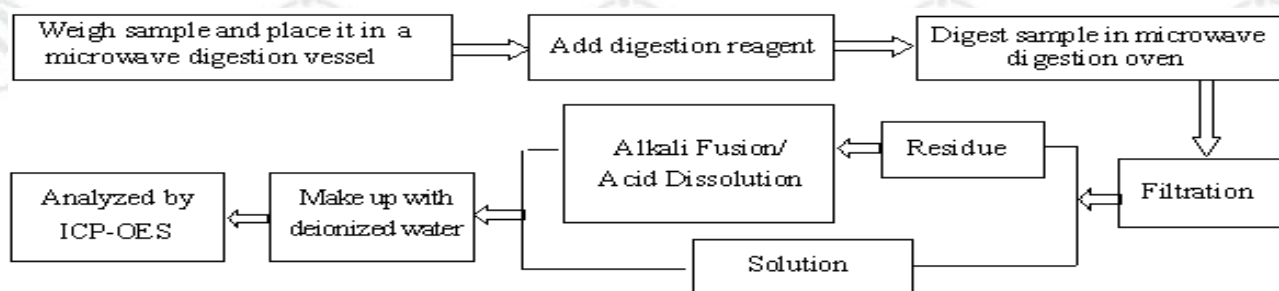
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## Test Process

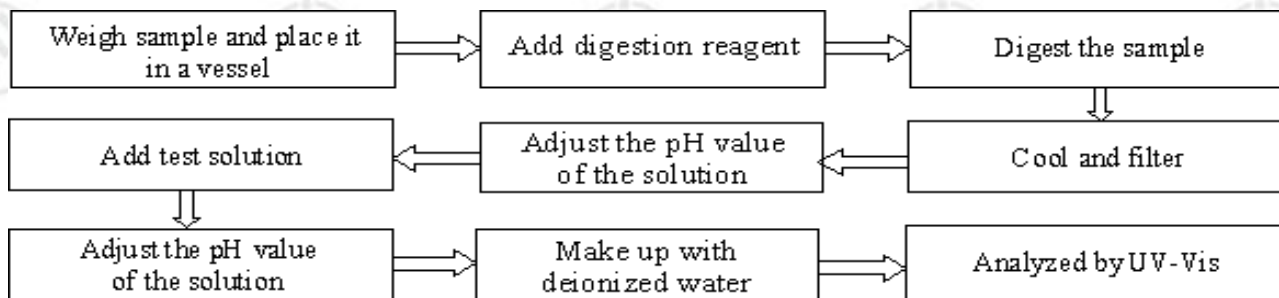
### 1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



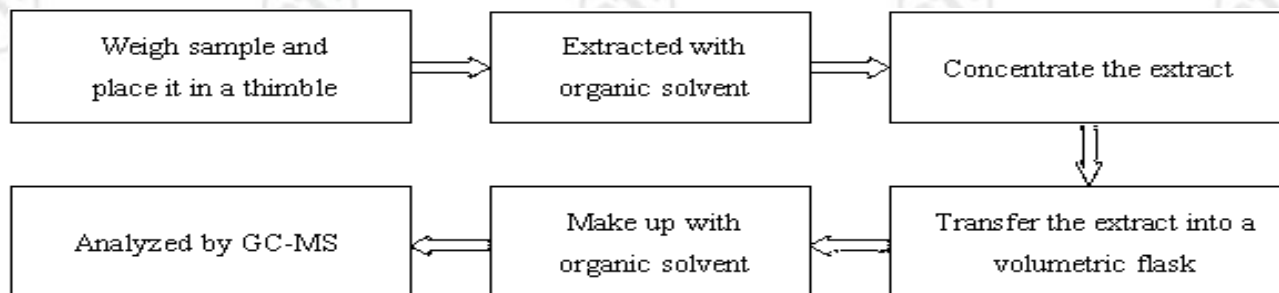
### 2. Mercury(Hg)



### 3. Hexavalent Chromium(Cr(VI))



### 4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Hexabromocyclododecane (HBCDD)

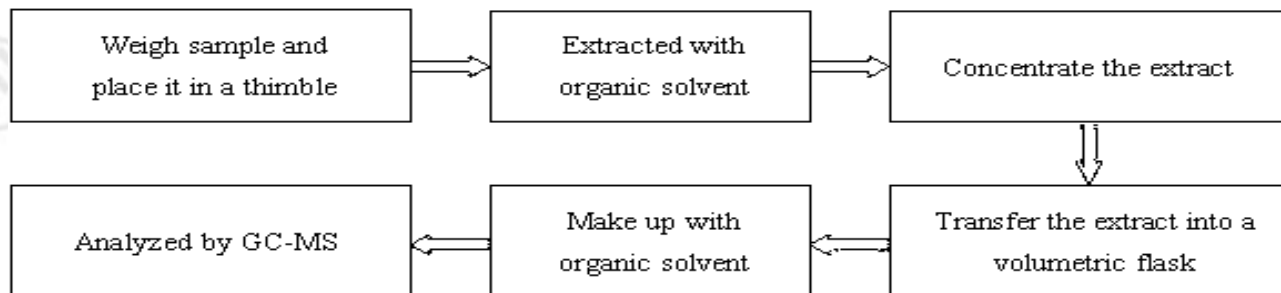


# Test Report

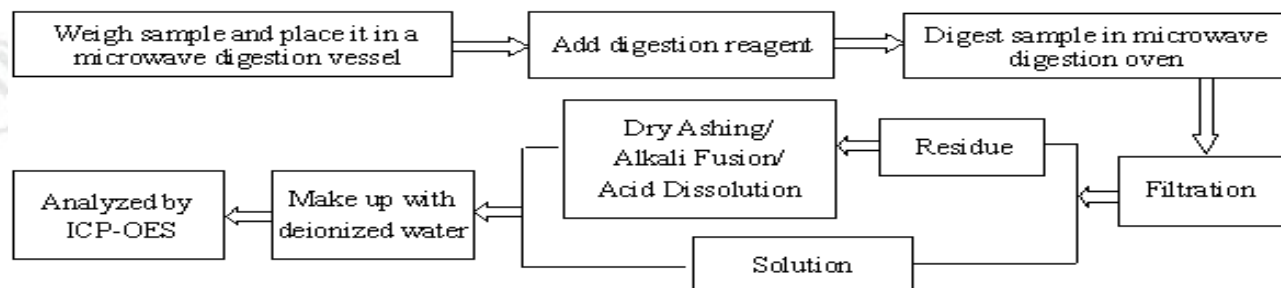
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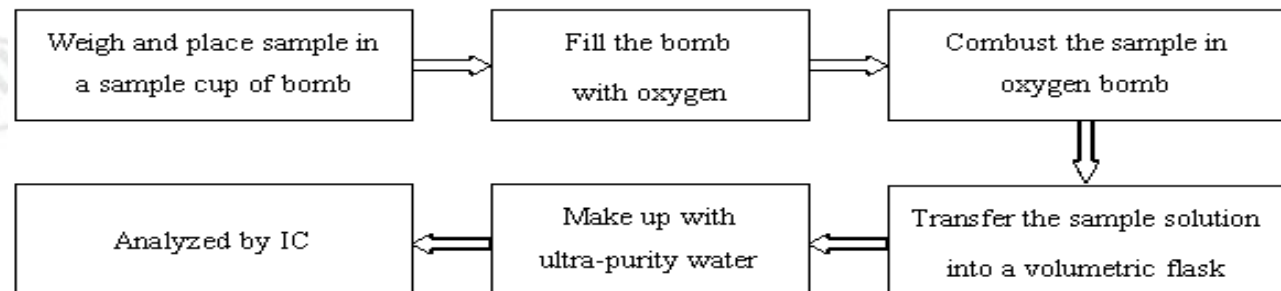
## 5. Phthalates



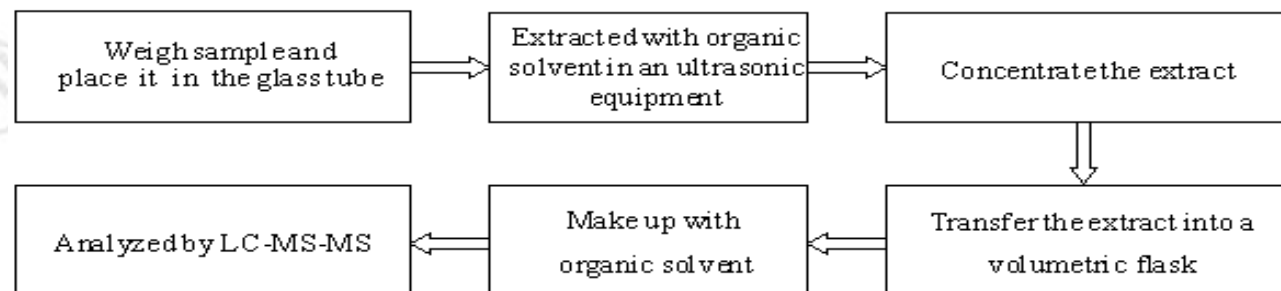
## 6. Arsenic(As),Beryllium(Be),Antimony(Sb)



## 7. Fluorine (F),Chlorine (Cl), Bromine (Br),Iodine (I)



## 8. Perfluorooctanoic Acid (PFOA),Perfluorooctane Sulfonates (PFOS)

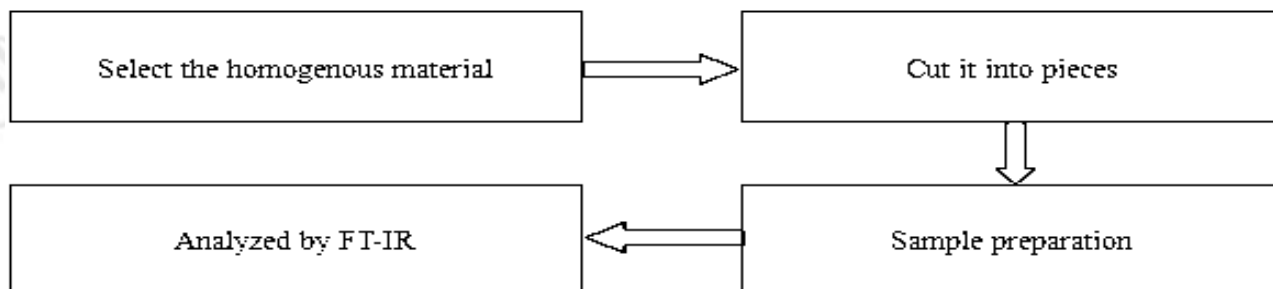


# Test Report

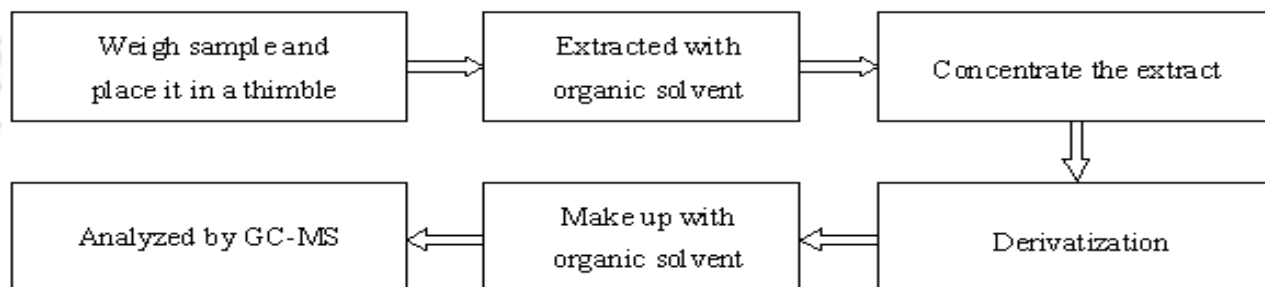
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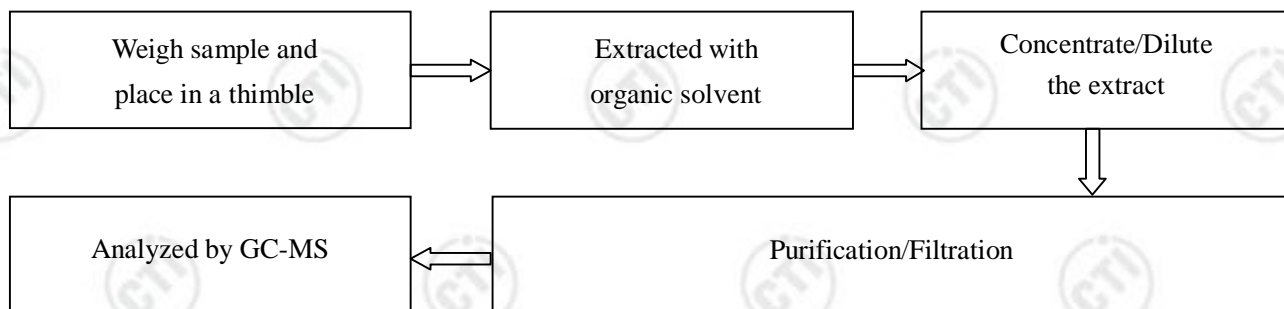
## 9. Polyvinyl Chloride (PVC)



## 10. Tetrabromobisphenol A (TBBP-A)



## 11. Polycyclic Aromatic Hydrocarbons (PAHs)



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## Photo(s) of the sample(s)



\*\*\* End of Report \*\*\*

### Statement:

1. This report is considered invalidated without approval signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.