

## Test Report



Report No. A2230425566101002

Company Name ASAHI SOLDER TECHNOLOGY (WUXI) CO. LTD.  
shown on Report

Address NO. 6 CHANGJIANG ROAD WUXI NATIONAL NEW DISTRICT

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

Sample Name Anode Ball  
Part No. Sn 99.99%  
Sample Received Date Aug. 21, 2023  
Testing Period Aug. 21, 2023 to Aug. 24, 2023

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), Phthalates (DBP, BBP, DEHP, DIBP), Arsenic(As), Beryllium(Be), Antimony(Sb), Phosphorus(P), Hexabromocyclododecane (HBCDD), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Phthalates, Polychlorinated Biphenyls(PCBs), Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA) in the submitted sample(s).

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

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



Approved by

*Hill Zheng*

Date

Aug. 24, 2023

Hill Zheng

Technical Manager

No. R294341553

CTI Testing International Group Co., Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

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## Test Method

Test 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 62321-7-1:2015	UV-Vis
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 3050B:1996 & US EPA 6010D:2018	ICP-OES
Beryllium(Be)	Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP-OES
Antimony(Sb)	Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP-OES
Phosphorus(P)	Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP-OES
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2018	GC-MS
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	Refer to EN 14372:2004(E)	GC-MS
Polychlorinated Biphenyls(PCBs)	Refer to US EPA 3550C:2007 & US EPA 8270E:2018	GC-MS
Perfluorooctane Sulfonates(PFOS)	Refer to DIN CEN/TS 15968:2010	LC-MS-MS
Perfluorooctanoic Acid(PFOA)	Refer to DIN CEN/TS 15968:2010	LC-MS-MS

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## Test Result(s)

Tested Item(s)	Result	MDL
	002	
Lead (Pb)	16 mg/kg	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D. ▼	0.10 µg/cm <sup>2</sup> (LOQ)
Tested Item(s)	Result	MDL
	002	
<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
	002	
<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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**Test Result(s)**

Tested Item(s)	Result	MDL
	002	
<b>Phthalates (DBP, BBP, DEHP, DIBP)</b>		
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
	002	
Arsenic (As)	N.D.	10 mg/kg
Beryllium (Be)	N.D.	2 mg/kg
Antimony (Sb)	N.D.	5 mg/kg
Phosphorus (P)	N.D.	20 mg/kg
Tested Item(s)	Result	MDL
	002	
Hexabromocyclododecane (HBCDD)	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
	002	
Fluorine (F)	N.D.	10 mg/kg
Chlorine (Cl)	N.D.	10 mg/kg
Bromine (Br)	N.D.	10 mg/kg
Iodine (I)	N.D.	10 mg/kg
Tested Item(s)	Result	MDL
	002	
<b>Phthalates</b>		
Di-n-octyl phthalate (DNOP) CAS#:117-84-0	N.D.	30 mg/kg
Di-isononyl phthalate (DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg
Di-iso-decyl phthalate (DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg
Dipentyl phthalate (DPP/DPENP) CAS#:131-18-0	N.D.	30 mg/kg

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**Test Result(s)**

Tested Item(s)	Result	MDL
	002	
<b>Polychlorinated Biphenyls(PCBs)</b>		
Monochlorobiphenyl	N.D.	5 mg/kg
Dichlorobiphenyl	N.D.	5 mg/kg
Trichlorobiphenyl	N.D.	5 mg/kg
Tetrachlorobiphenyl	N.D.	5 mg/kg
Pentachlorobiphenyl	N.D.	5 mg/kg
Hexachlorobiphenyl	N.D.	5 mg/kg
Heptachlorobiphenyl	N.D.	5 mg/kg
Octachlorobiphenyl	N.D.	5 mg/kg
Nonachlorobiphenyl	N.D.	5 mg/kg
Decachlorobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
	002	
Perfluorooctane Sulfonates (PFOS)	N.D.	0.010 mg/kg
Tested Item(s)	Result	MDL
	002	
Perfluorooctanoic Acid (PFOA)	N.D.	0.010 mg/kg

**Sample/Part Description**

No.	CTI Sample ID	Description
1	002	Silvery white metal

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

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL or LOQ)
- mg/kg = ppm = parts per million
- LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 µg/cm<sup>2</sup>
- ▼The sample is negative for Cr(VI) – The Cr(VI) concentration is below 0.10 µg/cm<sup>2</sup>. The coating is considered a non-Cr(VI) based coating.

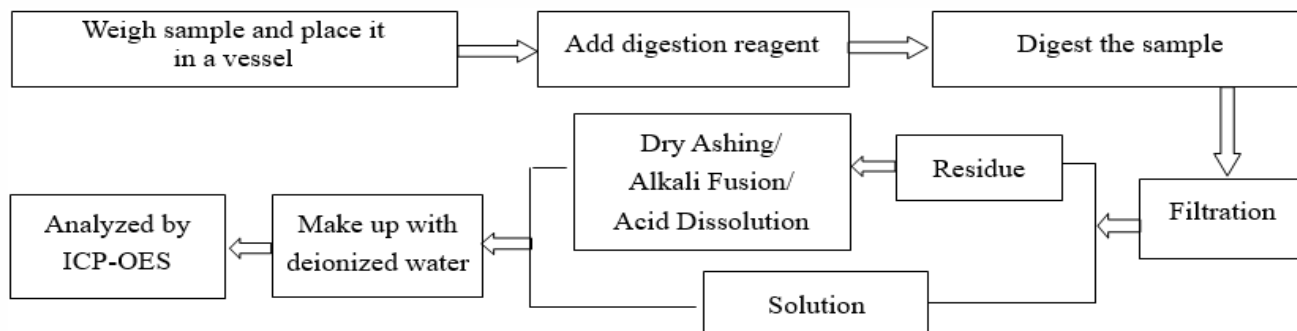
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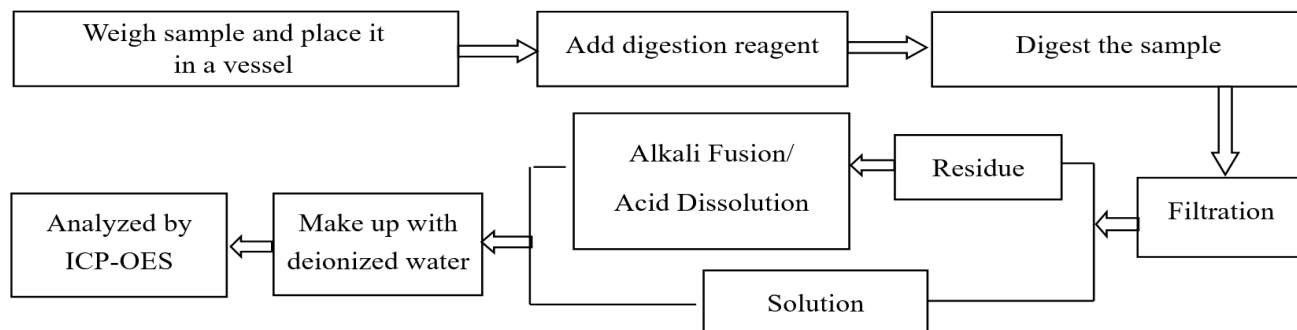
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## Test Process

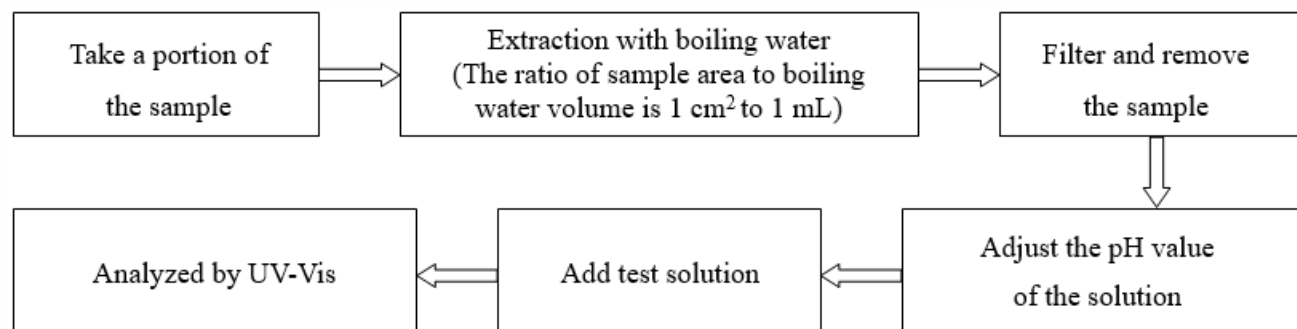
### 1. Lead (Pb), Cadmium (Cd)



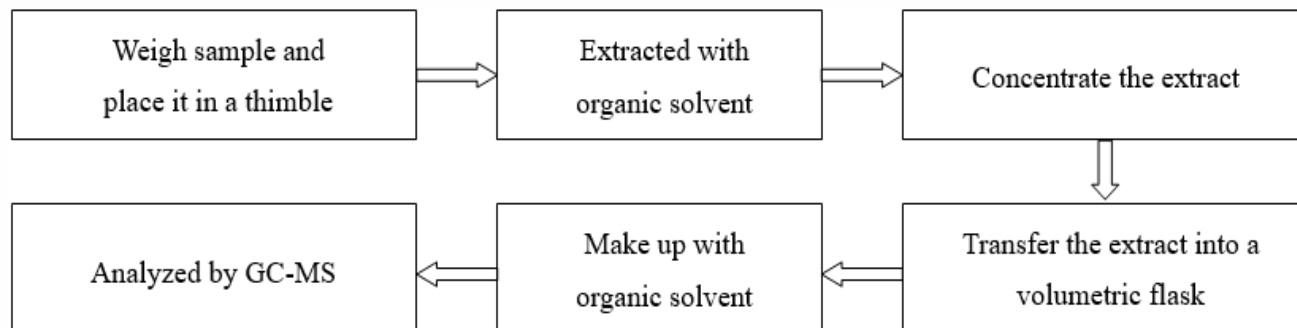
### 2. Mercury (Hg)



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



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

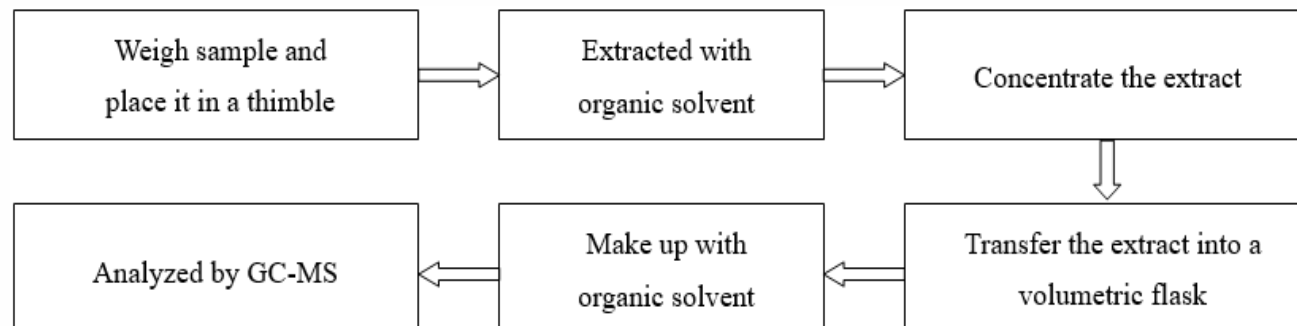


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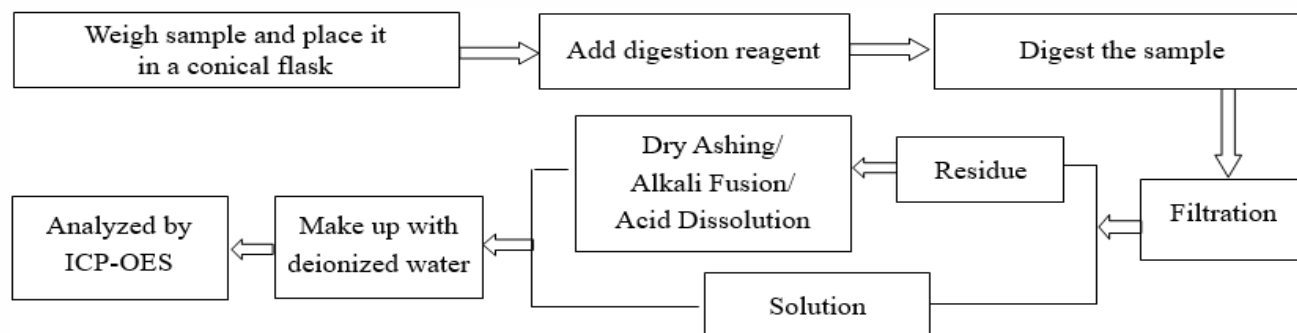
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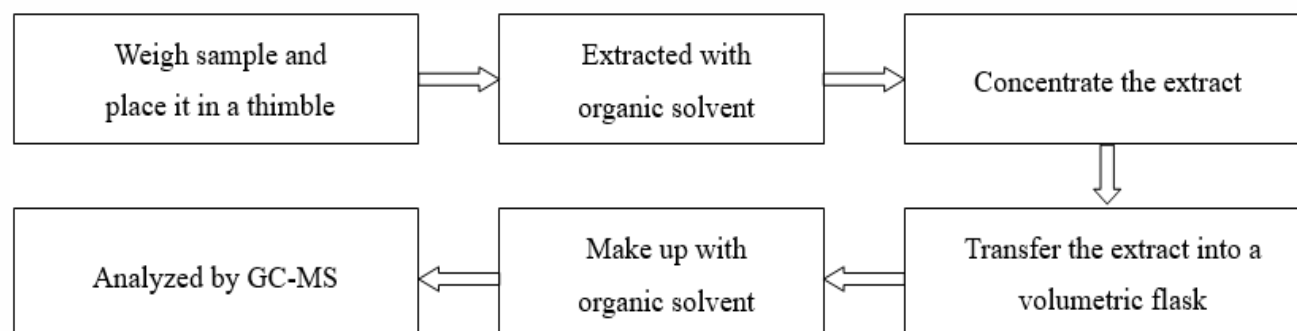
## 5. Phthalates (DBP, BBP, DEHP, DIBP)



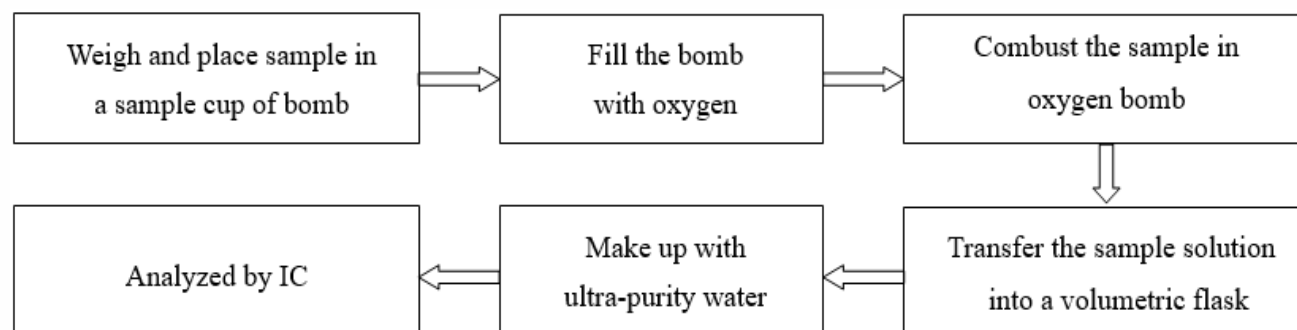
## 6. Arsenic(As), Beryllium(Be), Antimony(Sb), Phosphorus(P)



## 7. Hexabromocyclododecane (HBCDD)



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

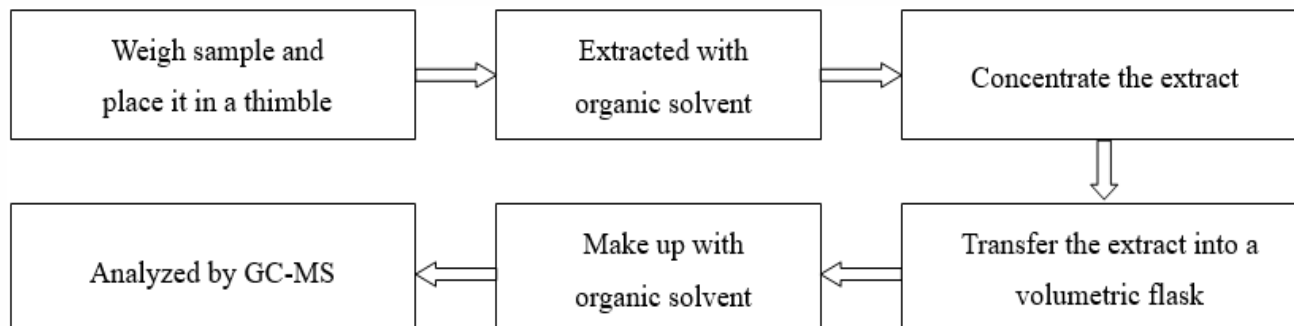


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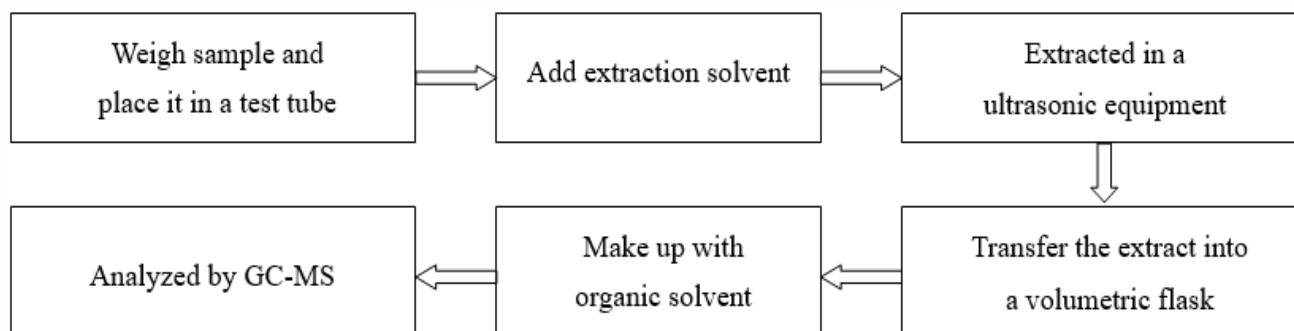
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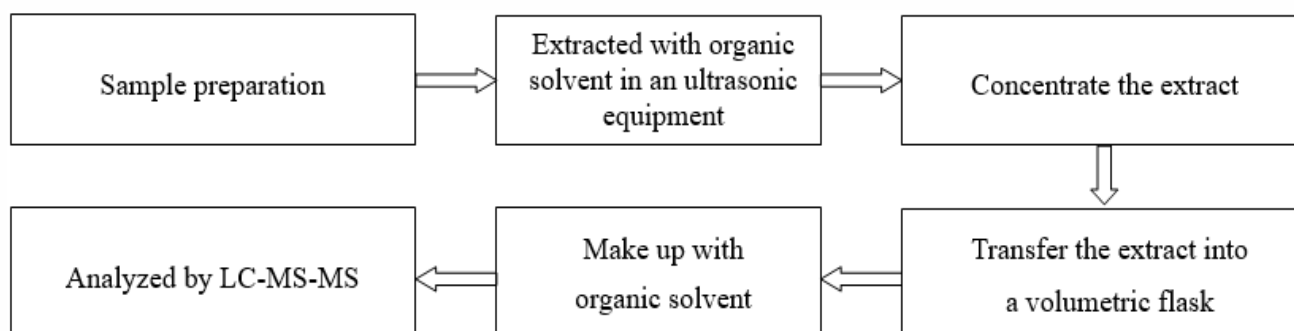
## 9. Phthalates



## 10. Polychlorinated Biphenyls(PCBs)



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





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



### Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant 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.

\*\*\* End of report \*\*\*