

## Test Report



Report No. A2230130009101001

Company Name shown on Report YANGZHOU J&V SEMICONDUCTOR CO. LTD

Address NO.26, MID PIONEER PARK ROAD,HAN JIANG DISTRICT ,YANGZHOU

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

Sample Name High Voltage Module Chip(AL)  
Part No. High Voltage Module Chip(AL)  
Sample Received Date Mar. 25, 2023  
Testing Period Mar. 25, 2023 to Mar. 30, 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, Arsenic(As), Beryllium(Be), Antimony(Sb), Hexabromocyclododecane (HBCDD), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I) Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA), Tetrabromobisphenol A (TBBP-A), Middle Chain Chlorinated Paraffins (MCCPs) 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

*Chen Kaimin*

Chen kaimin  
Lab Manager

Date

Apr. 3, 2023

No. R475312138

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

No.1351, Wanfang Road, Minhang District, Shanghai, 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 62321-7-2:2017 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:2018*	ICP-OES
Beryllium(Be)	Refer to US EPA 3052:1996 & US EPA 6010D:2018*	ICP-OES
Antimony(Sb)	Refer to US EPA 3052:1996 & US EPA 6010D:2018*	ICP-OES
Hexabromocyclododecane (HBCDD)	IEC 62321-9:2021	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	IEC 62321-8:2017	GC-MS
Perfluorooctane Sulfonates(PFOS)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007*	LC-MS-MS/LC-MS
Perfluorooctanoic Acid(PFOA)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007*	LC-MS-MS/LC-MS
Tetrabromobisphenol A (TBBP-A)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007*	LC-MS-MS/LC-MS
Middle Chain Chlorinated Paraffins (MCCPs)	Refer to US EPA 3550C:2007 & US EPA 8270E:2018*	GC-MS(NCI)

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**Test Result(s)**

Tested Item(s)	Result	MDL
	001	
Lead (Pb)	27671 mg/kg <sup>#</sup>	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
	001	
<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
	001	
<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
	001	
<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
	001	
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
	001	
Hexabromocyclododecane (HBCDD)	N.D.	20 mg/kg
Tested Item(s)	Result	MDL
	001	
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
	001	
<b>Phthalates</b>		
*Dipentyl phthalate (DPP/DPENP) CAS#:131-18-0	N.D.	50 mg/kg
Di-n-octyl phthalate (DNOP) CAS#:117-84-0	N.D.	50 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
Tested Item(s)	Result	MDL
	001	
Perfluorooctane Sulfonates (PFOS)	N.D.	0.010 mg/kg

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**Test Result(s)**

Tested Item(s)	Result	MDL
	001	
Perfluorooctanoic Acid (PFOA)	N.D.	0.010 mg/kg
Tested Item(s)	Result	MDL
	001	
Tetrabromobisphenol A (TBBP-A)	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
	001	
Middle Chain Chlorinated Paraffins (MCCPs)	N.D.	100 mg/kg

**Sample/Part Description**

No.	CTI Sample ID	Description
1	001	Chip

**Remark:** The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury, Arsenic, Beryllium, Antimony.  
 #=According to the client's statement, the material of the sample(s) fall into exemption items 7(c)-I according to EU Directive 2011/65/EU:Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL )

-mg/kg = ppm = parts per million

**Note:** "\*" indicates the item(s)/method(s) is (are) not in CNAS accreditation scope.

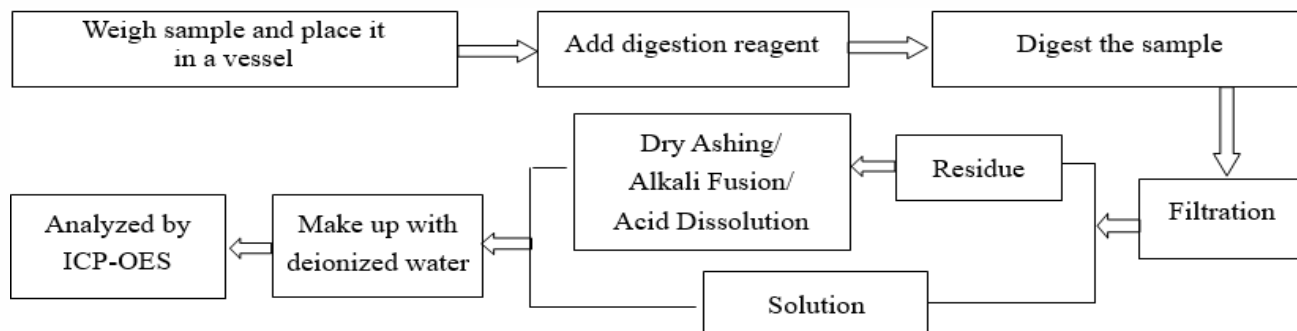
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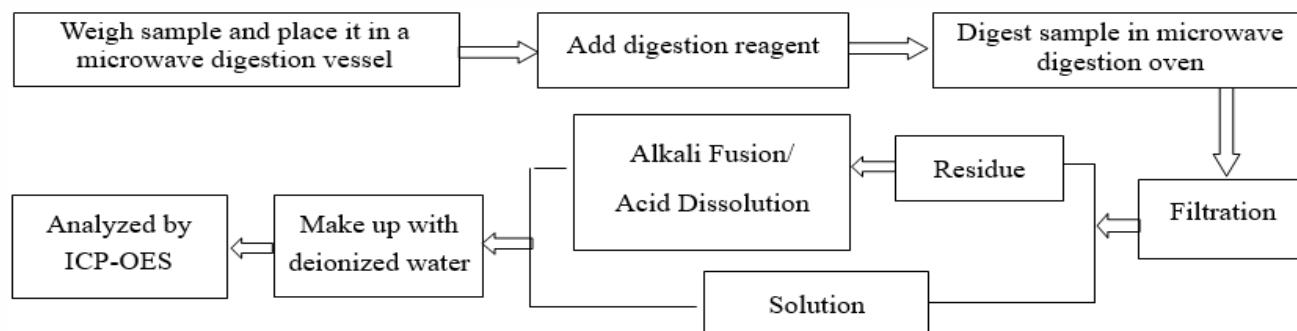
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## Test Process

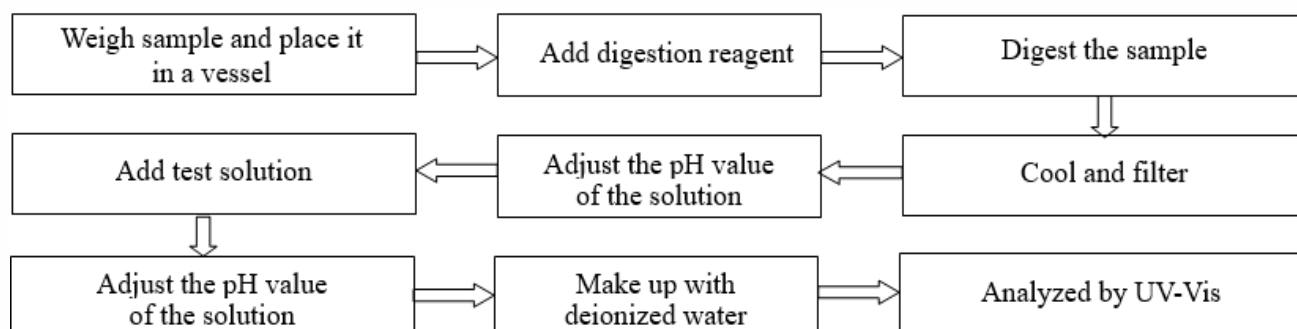
### 1. Lead (Pb), Cadmium (Cd), Chromium (Cr)



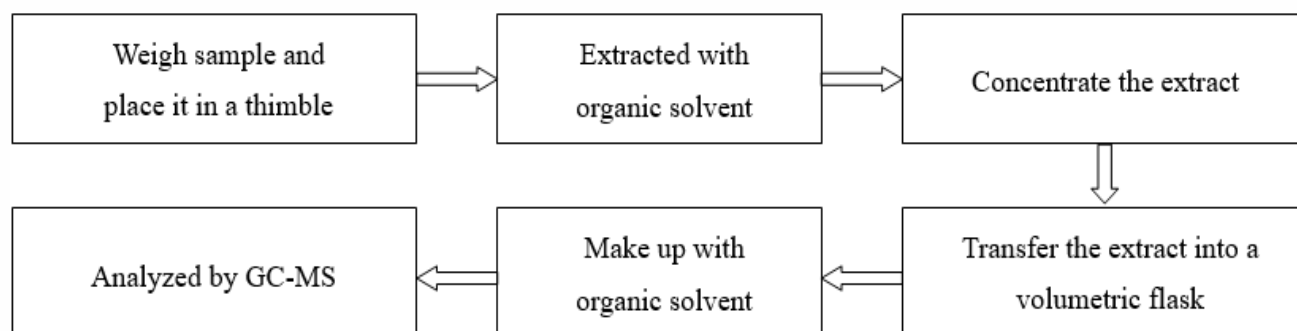
### 2. Mercury (Hg)



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



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

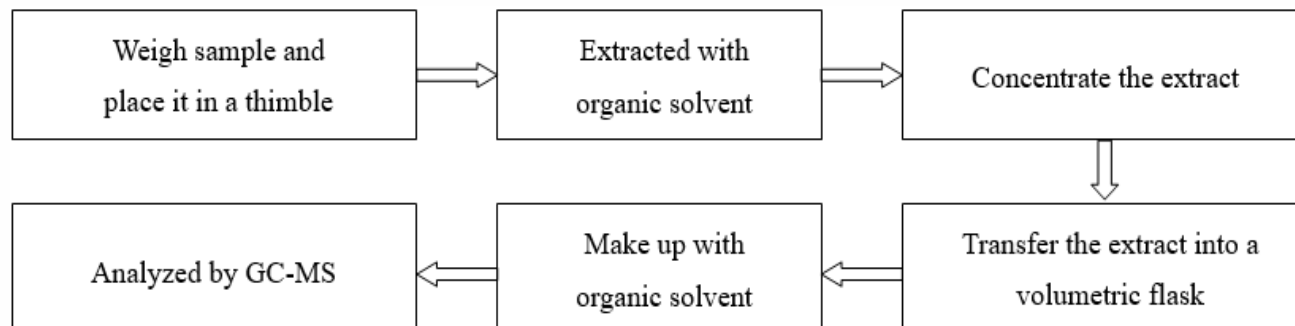


# Test Report

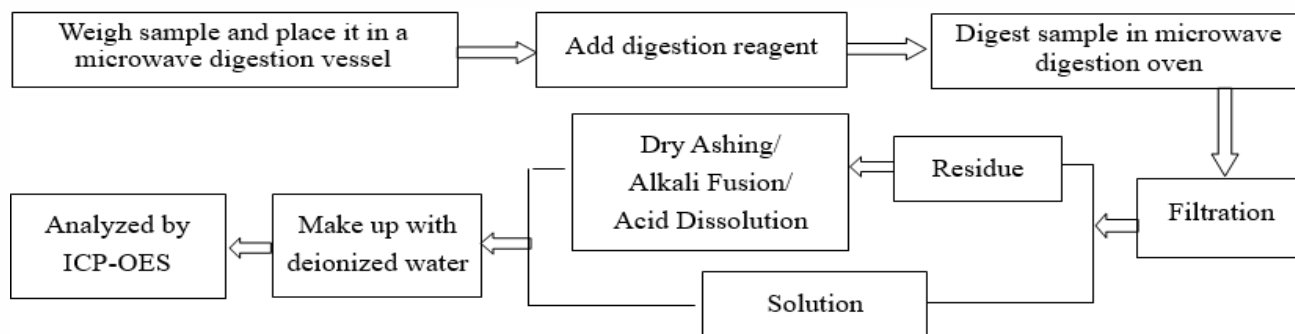
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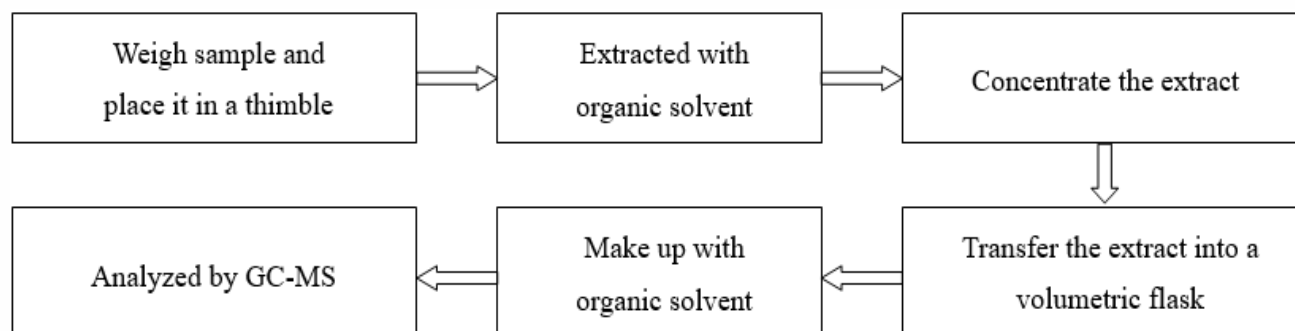
## 5. Phthalates



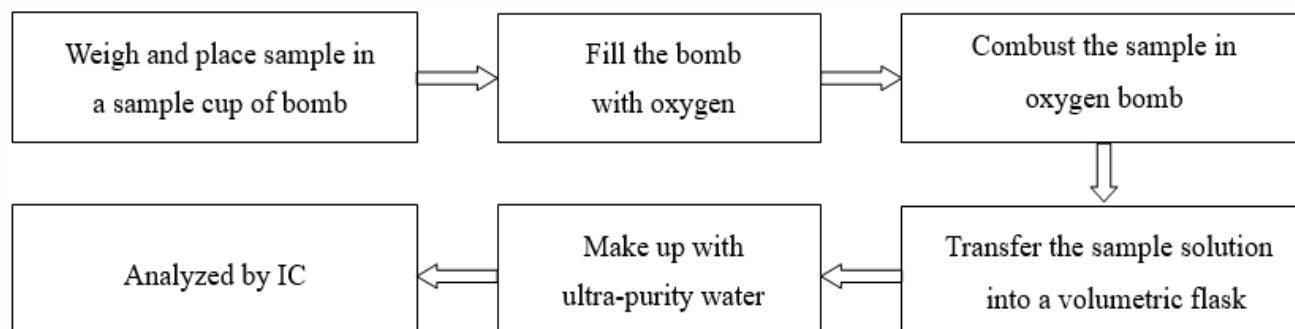
## 6. Arsenic(As), Beryllium(Be), Antimony(Sb)



## 7. Hexabromocyclododecane (HBCDD)



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

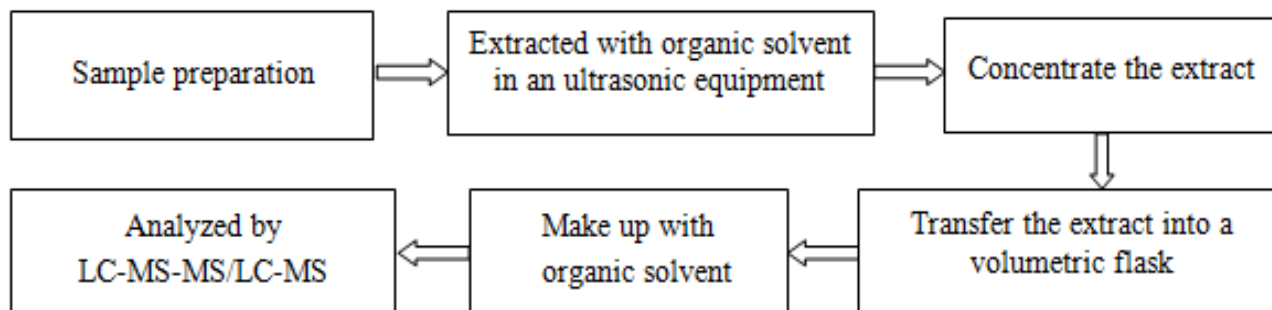


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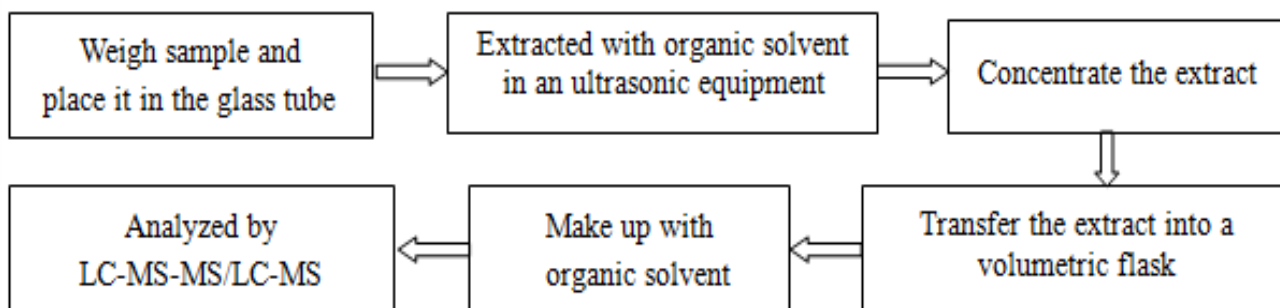
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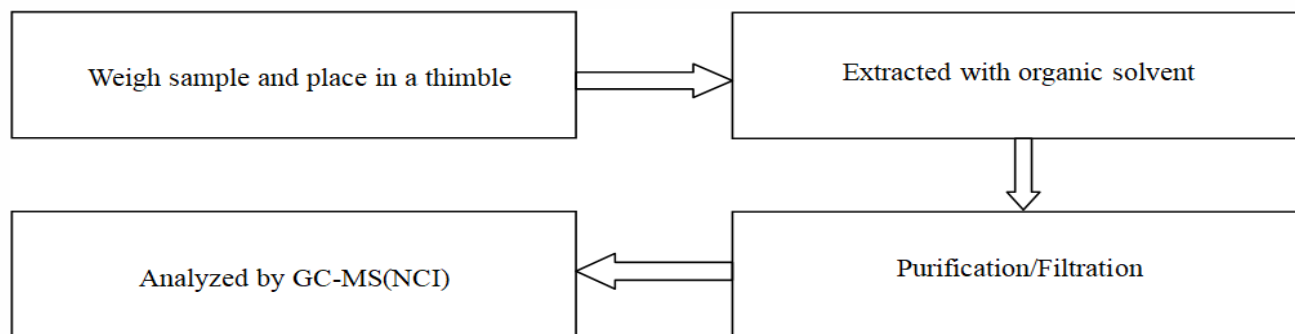
## 9. Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA)



## 10. Tetrabromobisphenol A (TBBP-A)



## 11. Middle Chain Chlorinated Paraffins (MCCPs)



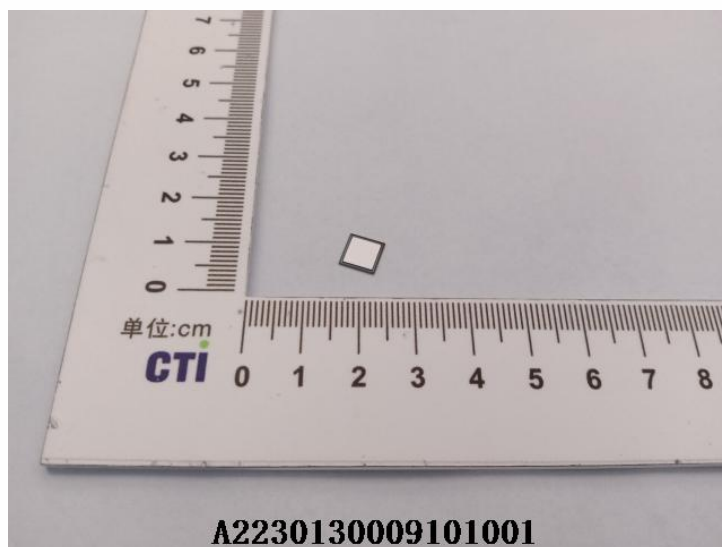


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## Photo(s) of the sample(s)



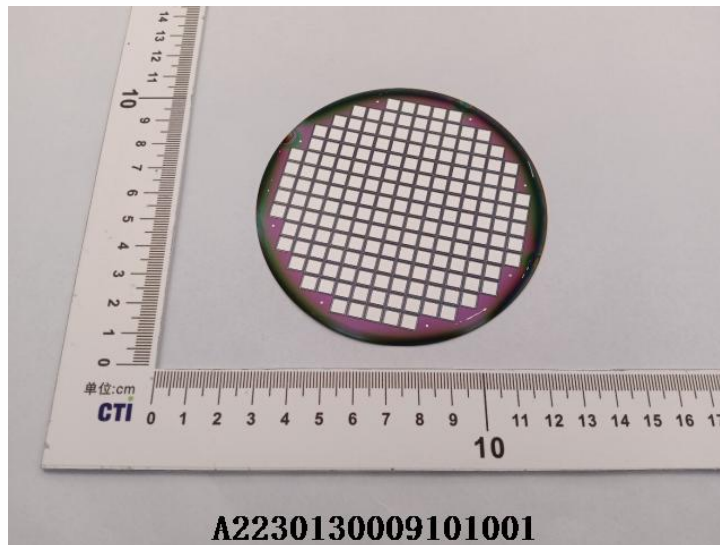
### Statement:

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 \*\*\*

## Appendix

### Client Reference Photo (Non-tested sample)



#### Statement:

1. The Appendix Information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.
2. The Appendix Information is/are the supplement(s) for the Report A2230130009101001.