

Test Report

Report No. A2230541185101001

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

Sample Name GPP Dice
Manufacturing Date 2023年9月
Sample Received Date Oct. 19, 2023
Testing Period Oct. 19, 2023 to Oct. 28, 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), Hexabromocyclododecane (HBCDD), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Perfluorooctanoic Acid(PFOA), Perfluorooctane Sulfonates(PFOS), 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).

Conclusion

Tested Sample	According to standard/directive	Result
Submitted Sample	RoHS Directive 2011/65/EU with amendment (EU) 2015/863	PASS

PASS means that the results shown on the report comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.



Approved by

Chen Kaimin

Chen kaimin
Lab Manager

Date

Oct. 28, 2023

No. R268851732

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
Perfluorooctanoic Acid(PFOA)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007*	LC-MS-MS/LC-MS
Perfluorooctane Sulfonates(PFOS)	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	Limit
	001		
Lead (Pb)	43853 mg/kg* ¹	2 mg/kg	1000 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg	100 mg/kg
Mercury (Hg)	N.D.	2 mg/kg	1000 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg	1000 mg/kg
Tested Item(s)	Result	MDL	Limit
	001		
Polybrominated Biphenyls (PBBs)			
Monobromobiphenyl	N.D.	5 mg/kg	1000 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	Limit
	001		
Polybrominated Diphenyl Ethers (PBDEs)			
Monobromodiphenyl ether	N.D.	5 mg/kg	1000 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	Limit
	001		
Phthalates (DBP, BBP, DEHP, DIBP)			
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg	1000 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg	1000 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg	1000 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg	1000 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		
Perfluorooctanoic Acid (PFOA)	N.D.		0.010 mg/kg
Tested Item(s)	Result	MDL	
	001		
Perfluorooctane Sulfonates (PFOS)	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

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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.
-*1= 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

-1000 mg/kg = 0.1%

Note: “*” indicates the method(s) is (are) not in CNAS accreditation scope.

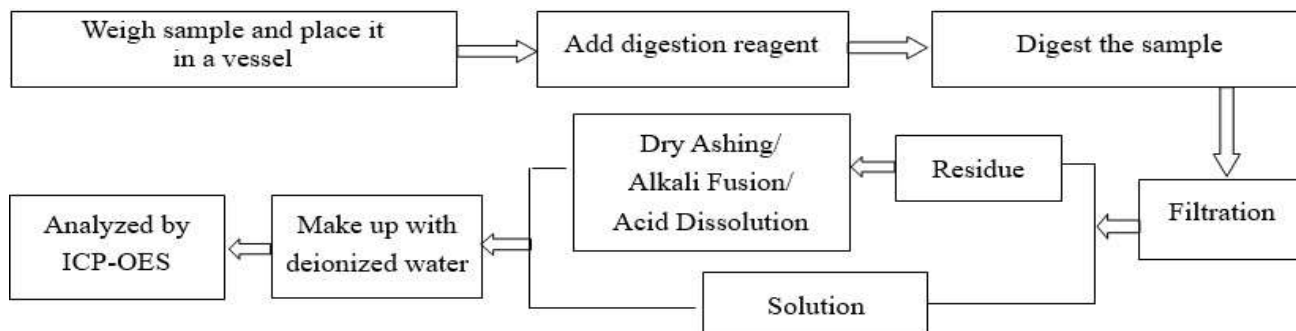
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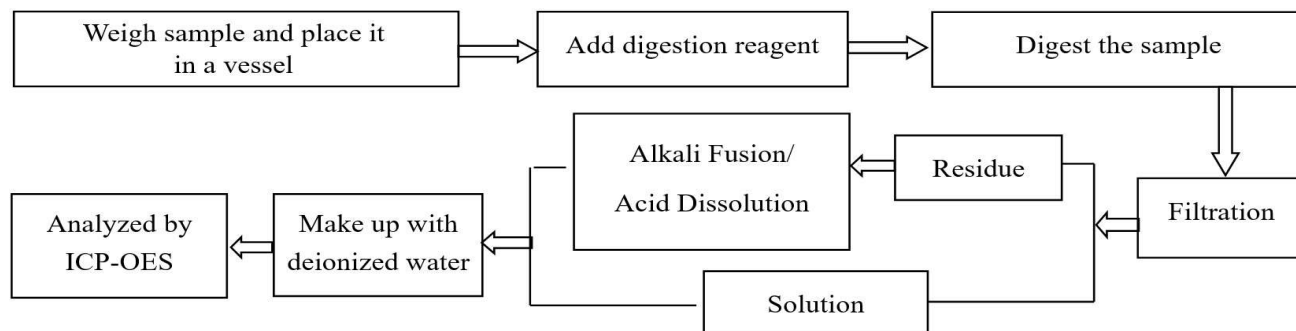
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Test Process

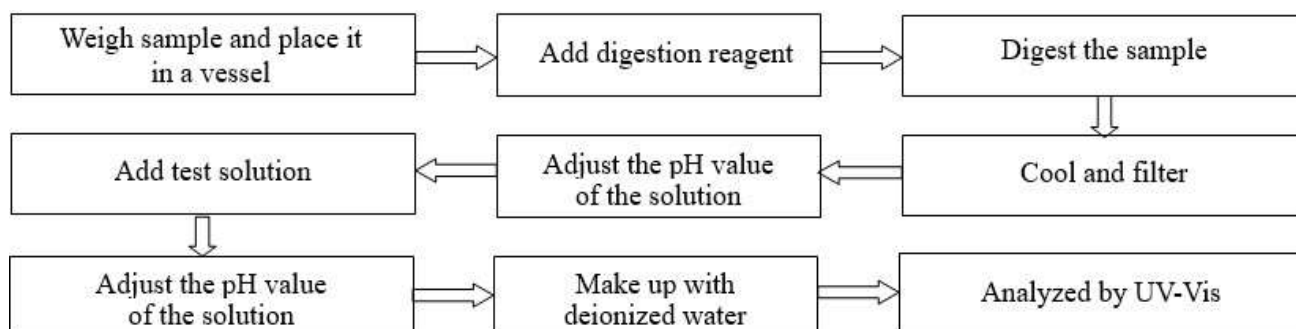
1. Lead (Pb), Cadmium (Cd), Chromium (Cr)



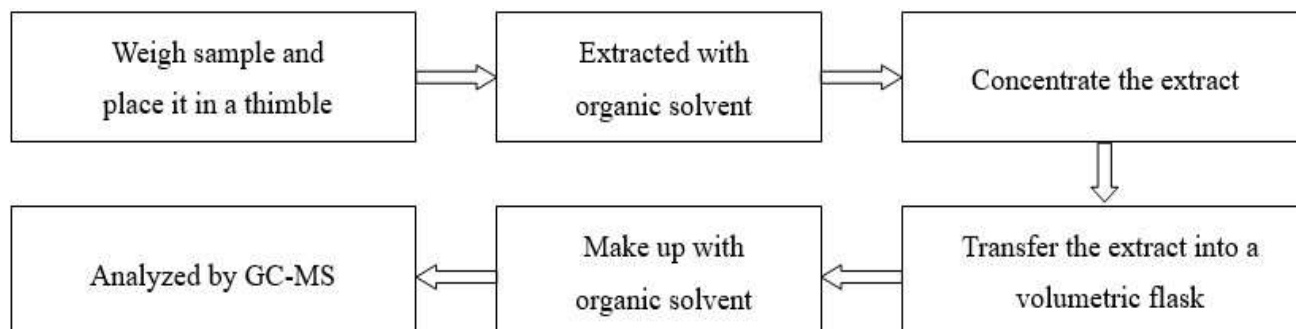
2. Mercury (Hg)



3. Hexavalent Chromium (Cr(VI))



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

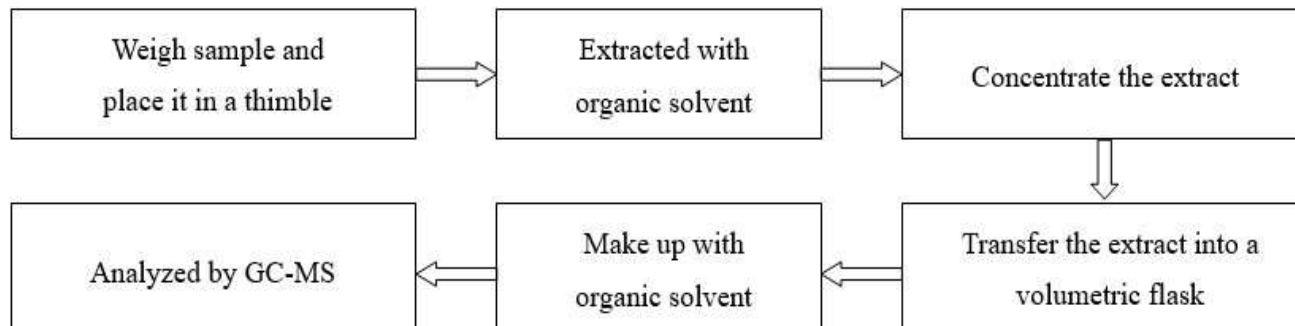


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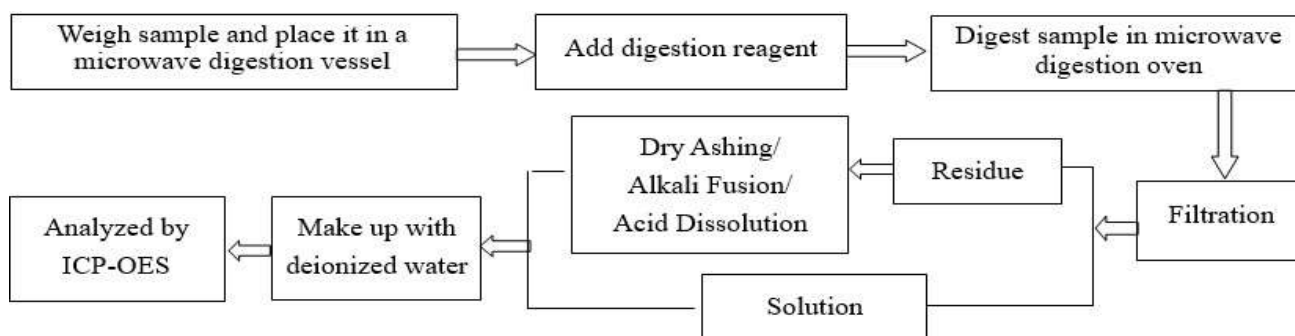
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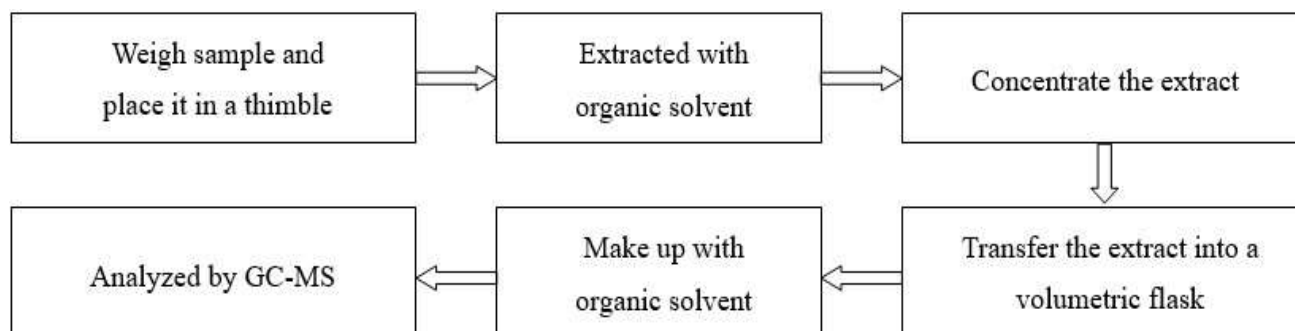
5. Phthalates (DBP, BBP, DEHP, DIBP)



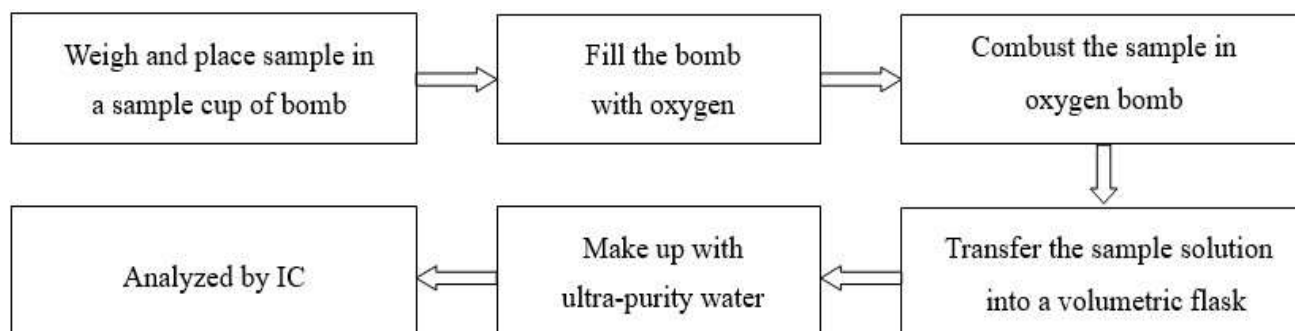
6. Arsenic(As), Beryllium(Be), Antimony(Sb)



7. Hexabromocyclododecane (HBCDD)



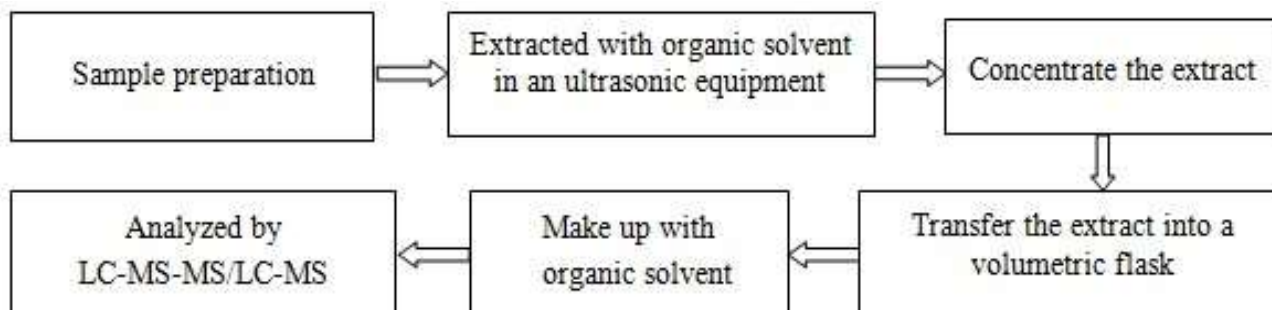
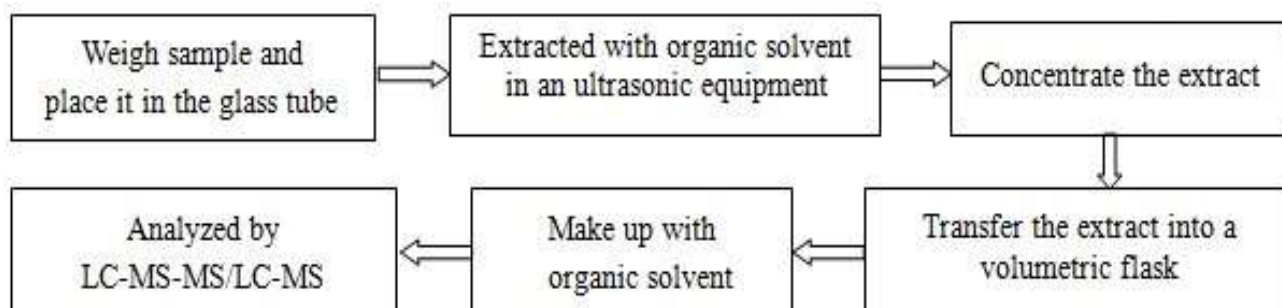
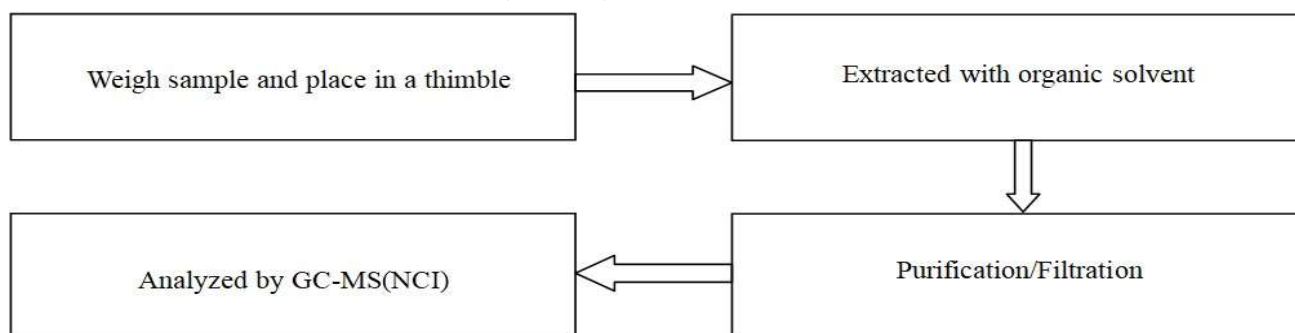
8. Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)



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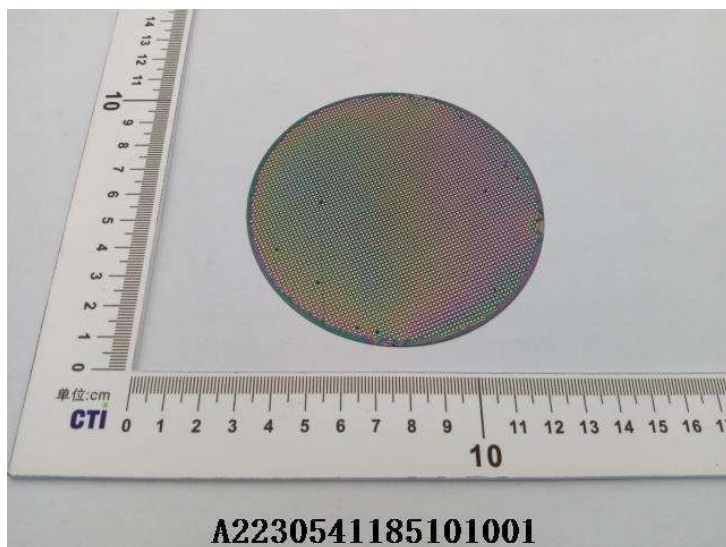
9. Perfluorooctanoic Acid(PFOA), Perfluorooctane Sulfonates(PFOS)**10. Tetrabromobisphenol A (TBBP-A)****11. Middle Chain Chlorinated Paraffins (MCCPs)**

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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 A2230541185101001.