

# Test Report



**Report No.** A2200404793101001

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

**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 Nov. 13, 2020  
Testing Period Nov. 13, 2020 to Nov. 16, 2020

**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, 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).

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**Conclusion**

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

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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.



Tested by Ada Zhang

Approved by Hill Zheng

Hill Zheng  
Technical Manager

Reviewed by

Jori Xia

Date

Nov. 16, 2020

No. R187211639

Inspection and 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
Perfluorooctane Sulfonates(PFOS)	Refer to CEN/TS 15968:2010	LC-MS-MS
Perfluorooctanoic Acid(PFOA)	Refer to CEN/TS 15968:2010	LC-MS-MS

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**Test Result(s)**

Tested Item(s)	Result	MDL	Limit
Lead(Pb)	38 mg/kg	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. ▼	0.10 µg/cm <sup>2</sup> (LOQ)	1000 mg/kg
Tested Item(s)	Result	MDL	Limit
<b>Polybrominated Biphenyls(PBBs)</b>			
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
<b>Polybrominated Diphenyl Ethers (PBDEs)</b>			
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
<b>Phthalates (DBP, BBP, DEHP, DIBP)</b>			
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
<b>Tested Item(s)</b>	<b>Result</b>	<b>MDL</b>	
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	
<b>Tested Item(s)</b>	<b>Result</b>	<b>MDL</b>	
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg	
<b>Tested Item(s)</b>	<b>Result</b>	<b>MDL</b>	
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	
<b>Tested Item(s)</b>	<b>Result</b>	<b>MDL</b>	
<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) CAS#:131-18-0	N.D.	30 mg/kg	
<b>Tested Item(s)</b>	<b>Result</b>	<b>MDL</b>	
Perfluorooctane Sulfonates(PFOS)	N.D.	0.01 mg/kg	
<b>Tested Item(s)</b>	<b>Result</b>	<b>MDL</b>	
Perfluorooctanoic Acid(PFOA)	N.D.	0.01 mg/kg	

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**Sample/Part Description** Silvery 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

-1000 mg/kg = 0.1%

-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10  $\mu\text{g}/\text{cm}^2$

-▼The sample is negative for Cr(VI) – The Cr(VI) concentration is below 0.10  $\mu\text{g}/\text{cm}^2$ . The coating is considered a non-Cr(VI) based coating.

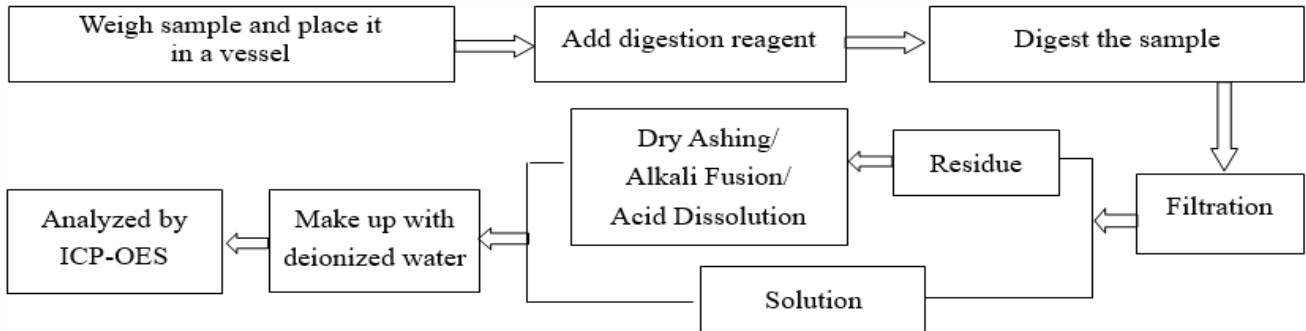
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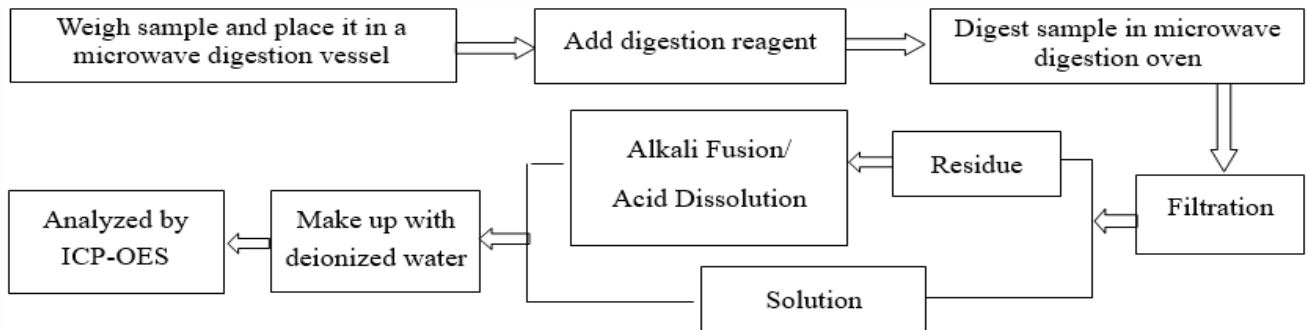
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## Test Process

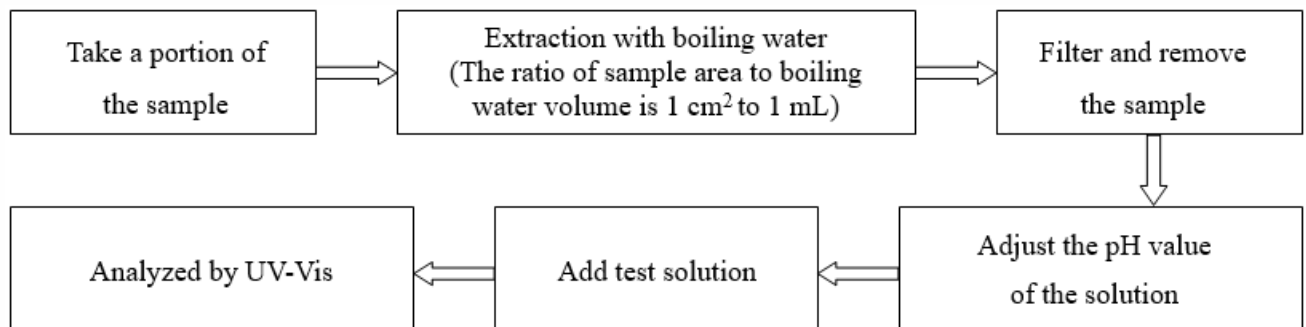
### 1. Lead(Pb), Cadmium(Cd)



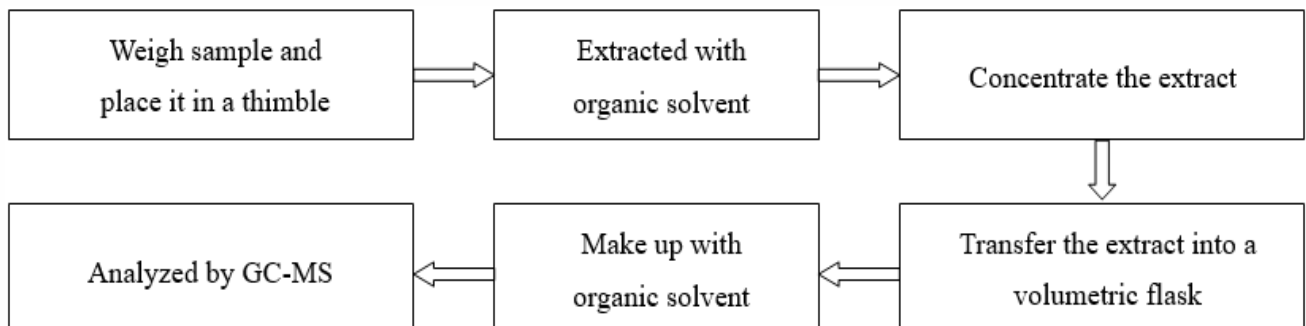
### 2. Mercury(Hg)



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



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

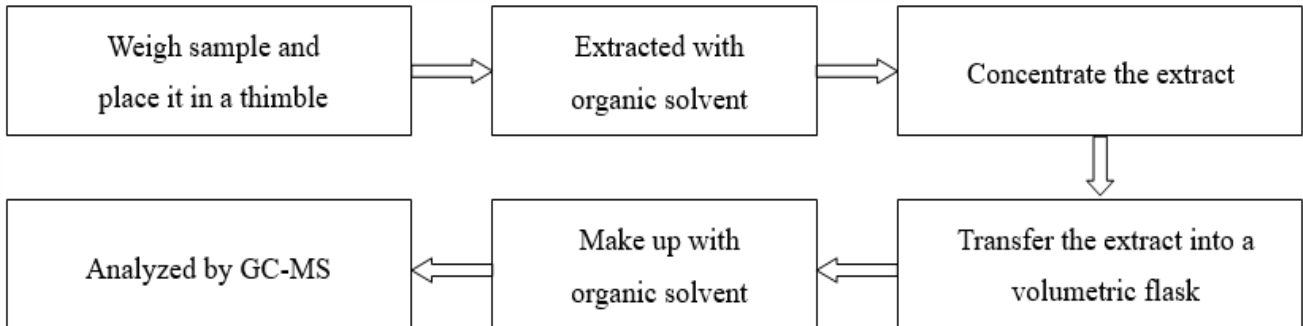


# Test Report

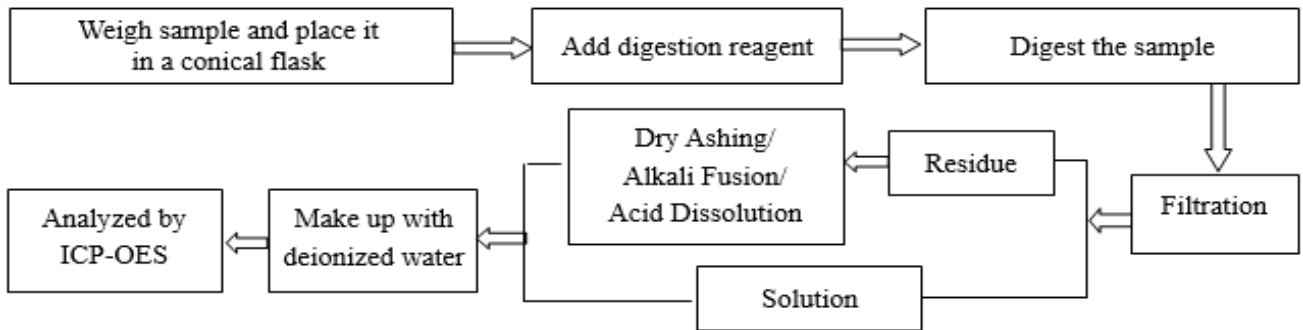
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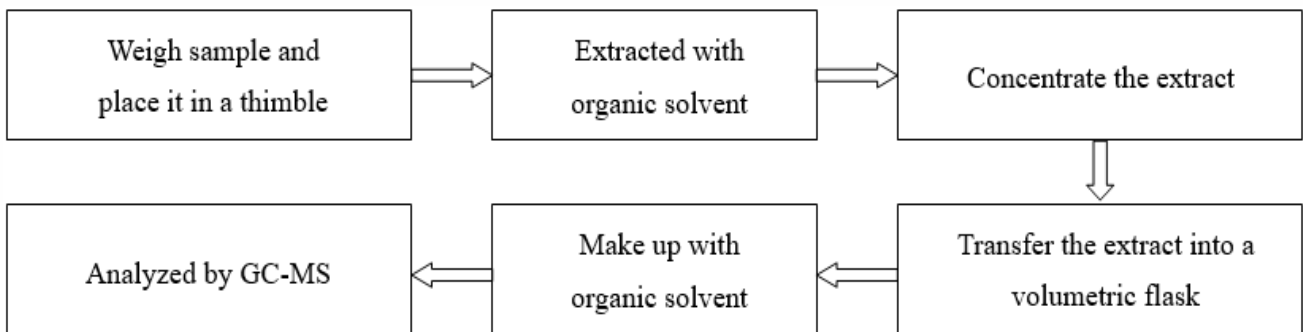
## 5. Phthalates (DBP, BBP, DEHP, DIBP)



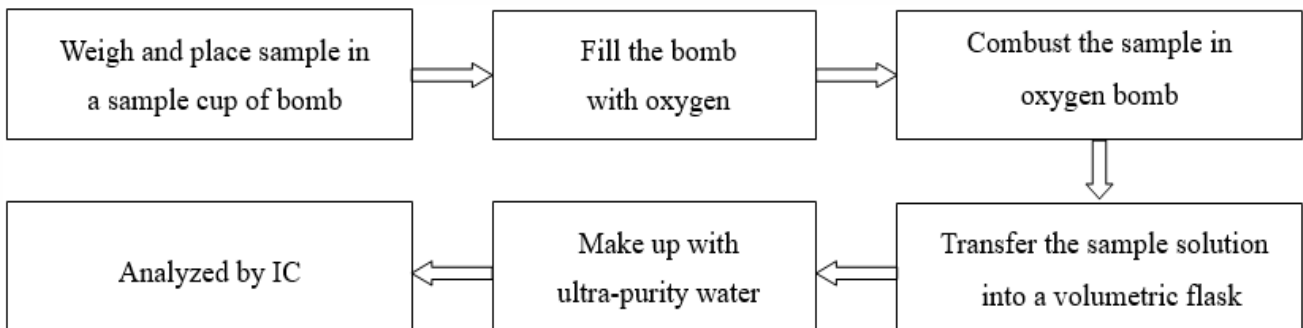
## 6. Arsenic(As), Beryllium(Be), Antimony(Sb), Phosphorus(P)



## 7. Hexabromocyclododecane (HBCDD)



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

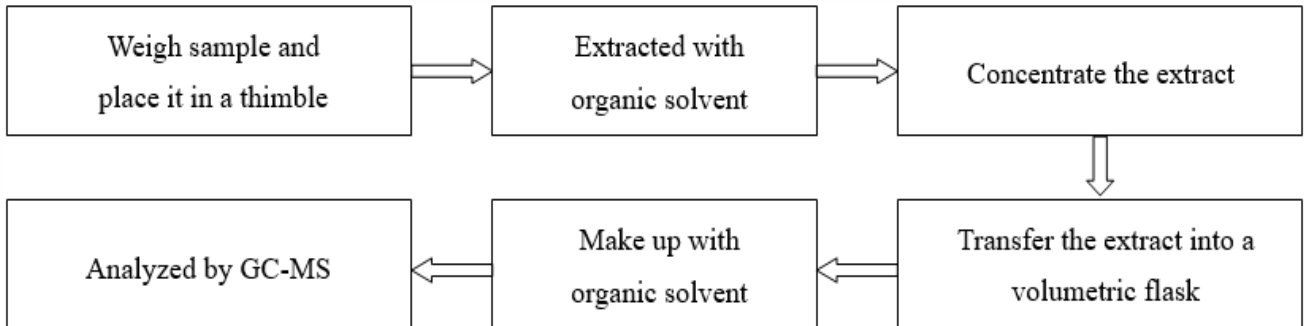


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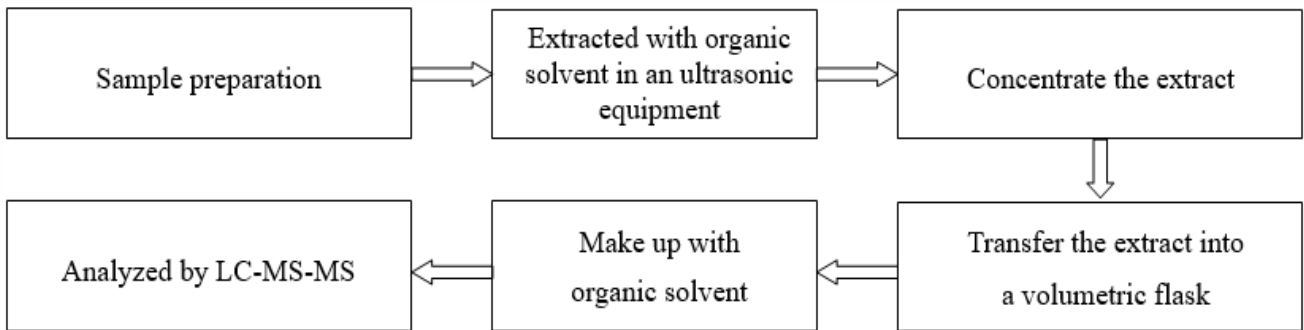
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## 9. Phthalates



## 10. 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 \*\*\*