Test Report

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Company Name shown on Report	TAK CHEONG ELECTRONICS SHANWEI CO., LTD.
Address	TAK CHEONG INDUSTRIAL ZONE, BUBIAN, SHANWEI, GUANGDONG, PRC

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

Sample Name(s)	TO-220AB HF Plastic Package
Model No.	TO220/TO220-2L
Lot No.	D/C2521
Material	Epoxy molding compound、Tin、Copper
Sample Received Date	Jun. 11, 2025
Testing Period	Jun. 11, 2025 to Jun. 14, 2025

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), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I) in the submitted sample(s).

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

Approved by: Hill Zheng Date Nov. 25, 2025

Hill Zheng
Technical Manager

No. R338851840

Centre 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

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 62321-7-1:2015	UV-Vis
	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls (PBBs)	IEC 62321-12:2023	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-12:2023	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-12:2023	GC-MS
Fluorine (F)	EN 14582:2016	IC
Chlorine (Cl)	EN 14582:2016	IC
Bromine (Br)	EN 14582:2016	IC
Iodine (I)	EN 14582:2016	IC

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Test Result(s)

Tested Item(s)	Result		MDL
	003	007	
Lead (Pb)	4510 mg/kg	10 mg/kg	2 mg/kg
Cadmium (Cd)	N.D.	N.D.	2 mg/kg
Mercury (Hg)	N.D.	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	--	8 mg/kg
	--	N.D.▼	0.10 μg/cm²(LOQ)

Tested Item(s)	Result	MDL
	003	
Polybrominated Biphenyls (PBBs)		
Monobromobiphenyl	N.D.	25 mg/kg
Dibromobiphenyl	N.D.	25 mg/kg
Tribromobiphenyl	N.D.	25 mg/kg
Tetrabromobiphenyl	N.D.	25 mg/kg
Pentabromobiphenyl	N.D.	25 mg/kg
Heptabromobiphenyl	N.D.	25 mg/kg
Hexabromobiphenyl	N.D.	25 mg/kg
Octabromobiphenyl	N.D.	25 mg/kg
Nonabromobiphenyl	N.D.	25 mg/kg
Decabromobiphenyl	N.D.	25 mg/kg

Tested Item(s)	Result	MDL
	003	
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	25 mg/kg
Dibromodiphenyl ether	N.D.	25 mg/kg
Tribromodiphenyl ether	N.D.	25 mg/kg
Tetrabromodiphenyl ether	N.D.	25 mg/kg
Pentabromodiphenyl ether	N.D.	25 mg/kg
Hexabromodiphenyl ether	N.D.	25 mg/kg
Heptabromodiphenyl ether	N.D.	25 mg/kg
Octabromodiphenyl ether	N.D.	25 mg/kg
Nonabromodiphenyl ether	N.D.	25 mg/kg
Decabromodiphenyl ether	N.D.	25 mg/kg

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Tested Item(s)	Result	MDL
	003	
Phthalates (DBP, BBP, DEHP, DIBP)		
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
	003	
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

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Sample/Part Description

No.	CTI Sample ID	Description
1	003	Black body(Tested as a whole) #
2	007	Metal pin with silvery plating

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

-#The sample(s) was tested as a whole, because it's impossible to disassemble or separate it by current equipment and technology. The result(s) shown on this report may be different from the content of any homogeneous material.

-Information Statement: Different Model No. with different buyer.

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

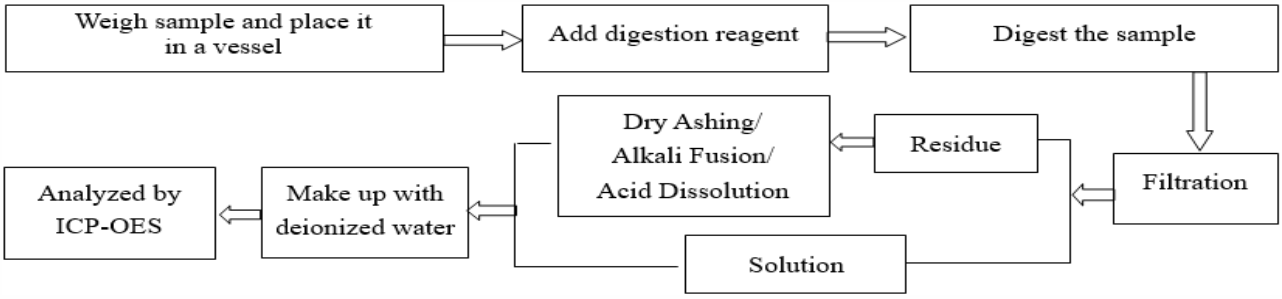
-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 μg/cm^2

-▼The sample is negative for Cr(VI) − The Cr(VI) concentration is below 0.10 μg/cm^2. The coating is considered a non-Cr(VI) based coating. Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

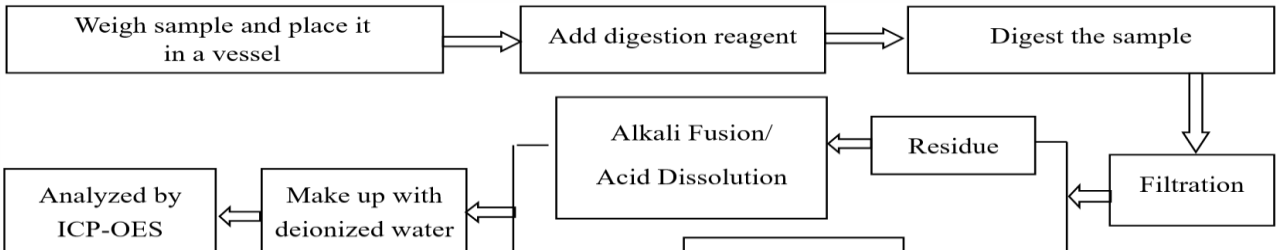
Note: **This testing report revised "Company Name shown on Report / Address" based on the original report of No. A225040053810102. This testing report displaces the original one which was invalid since the date of this testing report released.**

Test Process

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

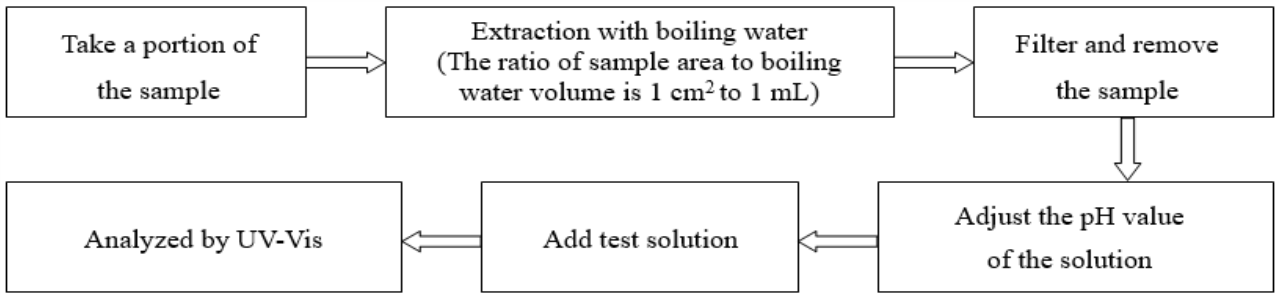


2. Mercury (Hg)

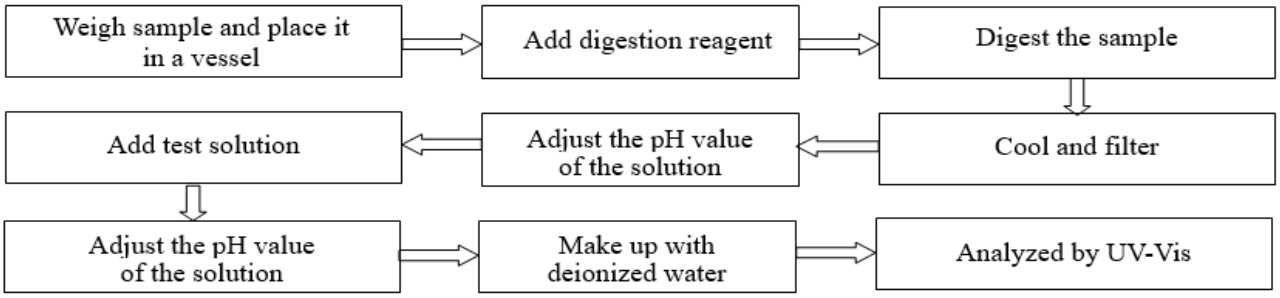


3. Hexavalent Chromium (Cr(VI))

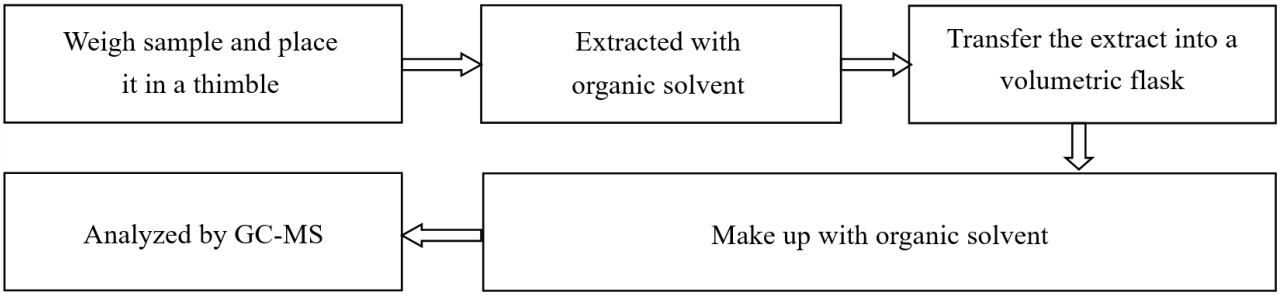
(1) IEC 62321-7-1:2015



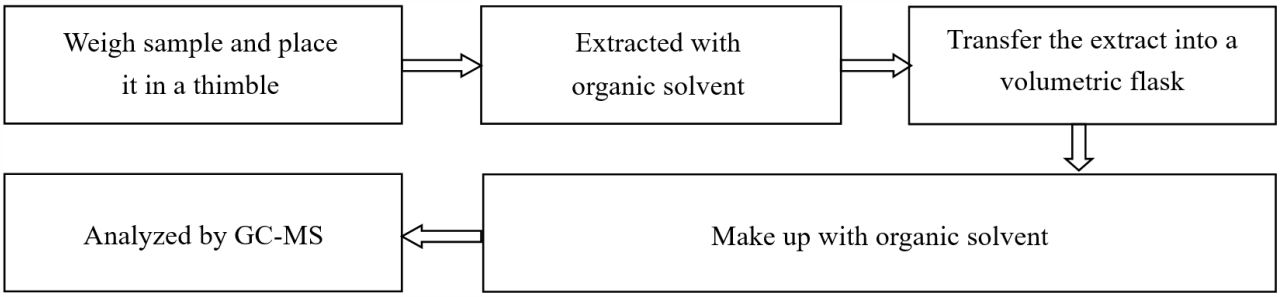
(2) IEC 62321-7-2:2017



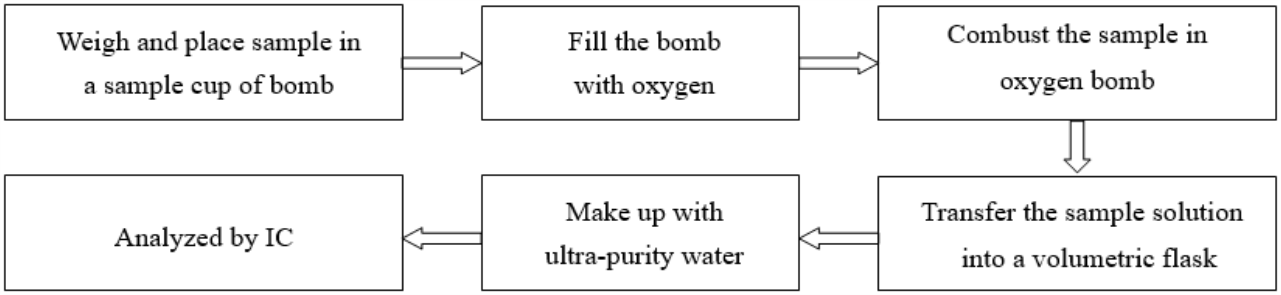
4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



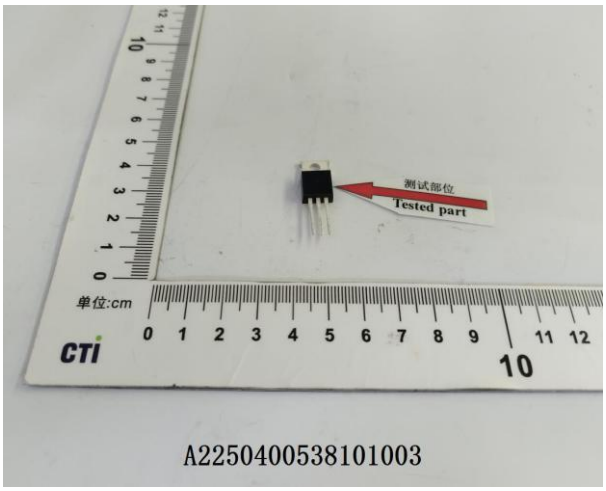
5. Phthalates (DBP, BBP, DEHP, DIBP)

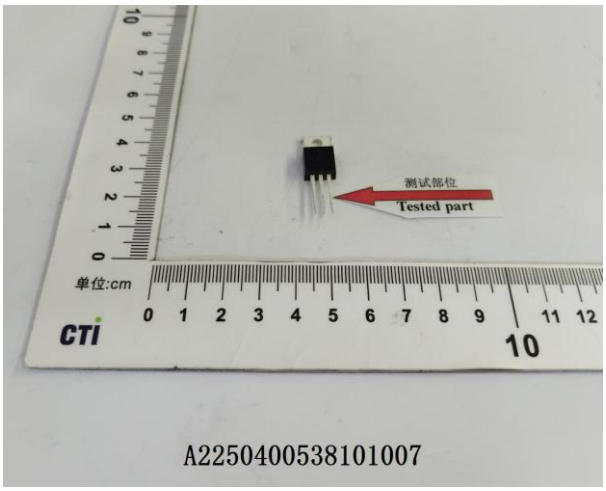


6. Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)



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. Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019 / CNAS-GL015:2022;
5. Without written approval of CTI, this report can't be reproduced except in full;
6. 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 ***