



# Test Report

Report No. A226042892110104

Page 1 of 9

**Company Name** TAK CHEONG ELECTRONICS SHANWEI CO., LTD.  
**shown on Report**

**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-220F HF Plastic Package  
Model No. TO-220FP/TO220F-2L  
Lot No. D/C2619  
Material Epoxy molding compound、 Tin, Copper  
Sample Received Date May 27, 2026  
Testing Period May 27, 2026 to Jun. 2, 2026

**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

*Helen Liu*

Date

Jun. 2, 2026

Helen Liu

Lab Authorized Signatory

No. R393383221

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

# Test Report

Report No. A226042892110104

Page 2 of 9

\*\*\*\*\*

## Conclusion

<b>Tested Sample</b>	<b>According to standard/directive</b>	<b>Result</b>
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.

# Test Report

Report No. A226042892110104

Page 3 of 9

**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 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Fluorine (F)	EN 14582:2016	IC
Chlorine (Cl)	EN 14582:2016	IC
Bromine (Br)	EN 14582:2016	IC
Iodine (I)	EN 14582:2016	IC

# Test Report

Report No. A226042892110104

Page 4 of 9

## Test Result(s)

Tested Item(s)	Result		MDL	Limit
	008	009		
Lead (Pb)	4012 mg/kg <sup>#</sup>	N.D.	2 mg/kg	1000 mg/kg
Cadmium (Cd)	N.D.	N.D.	2 mg/kg	100 mg/kg
Mercury (Hg)	N.D.	N.D.	2 mg/kg	1000 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	--	8 mg/kg	1000 mg/kg
	--	N.D. ▼	0.10 µg/cm <sup>2</sup> (LOQ)	1000 mg/kg

Tested Item(s)	Result		MDL	Limit
	008			
<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
	008			
<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	

# Test Report

Report No. A226042892110104

Page 5 of 9

Tested Item(s)	Result	MDL	Limit
	008		
<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

Tested Item(s)	Result	MDL
	008	
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

## Sample/Part Description

No.	CTI Sample ID	Description
1	008	Black body(Tested as a whole)*
2	009	Metal pin with silvery white plating

# Test Report

Report No. A226042892110104

Page 6 of 9

- 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.
  - 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. 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.
  - #According to the client's statement, the material of the sample(s) fall into exemption items 7(a) according to EU Directive 2011/65/EU: Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).

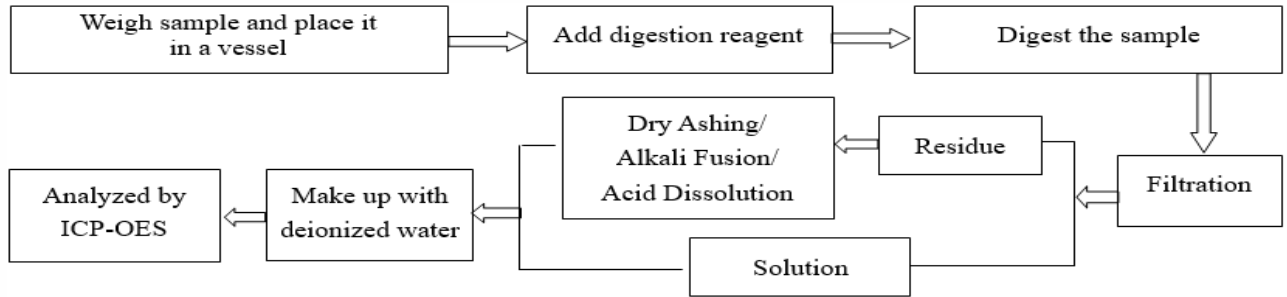
# Test Report

Report No. A226042892110104

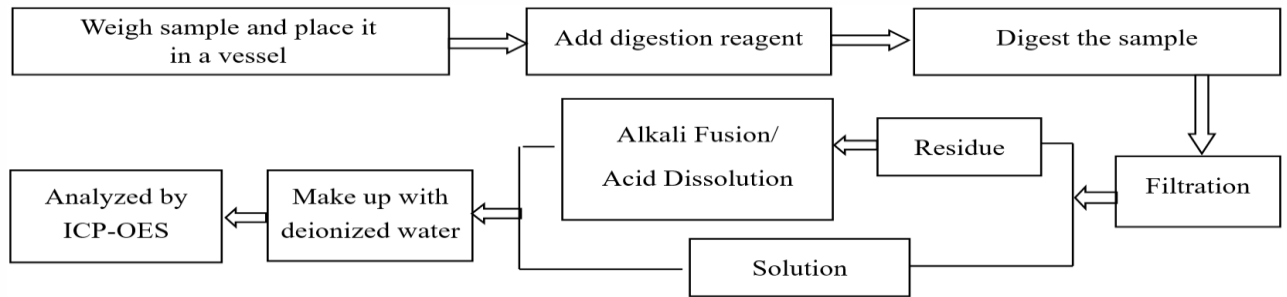
Page 7 of 9

**Test Process**

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

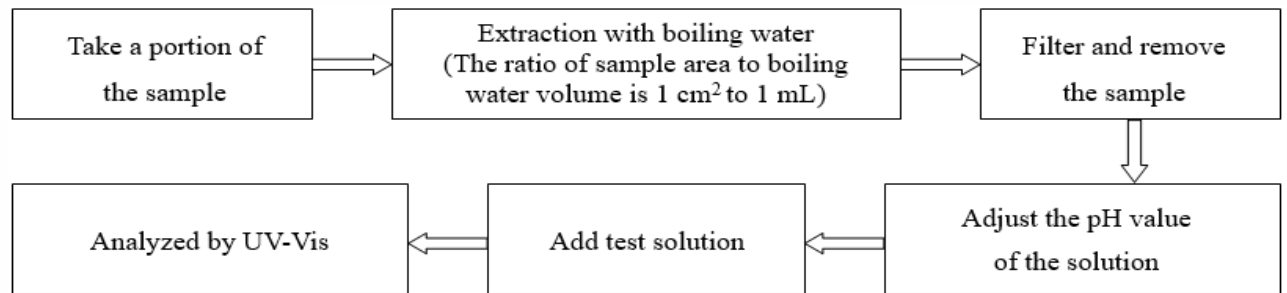


**2. Mercury (Hg)**

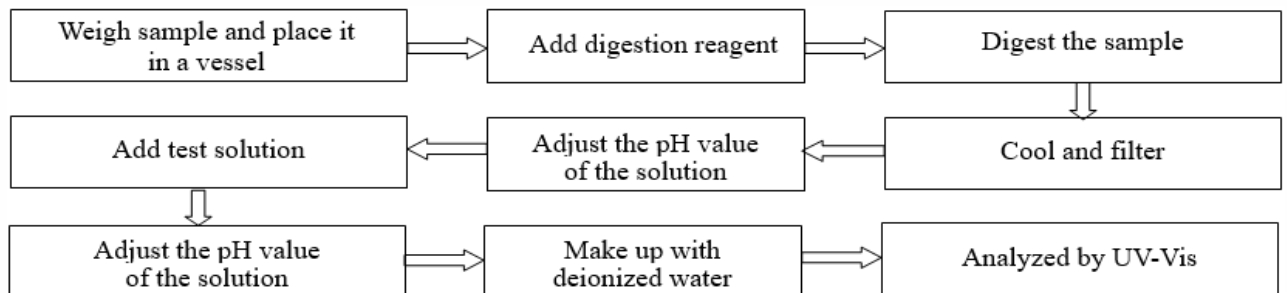


**3. Hexavalent Chromium (Cr(VI))**

**(1) IEC 62321-7-1:2015**



**(2) IEC 62321-7-2:2017**

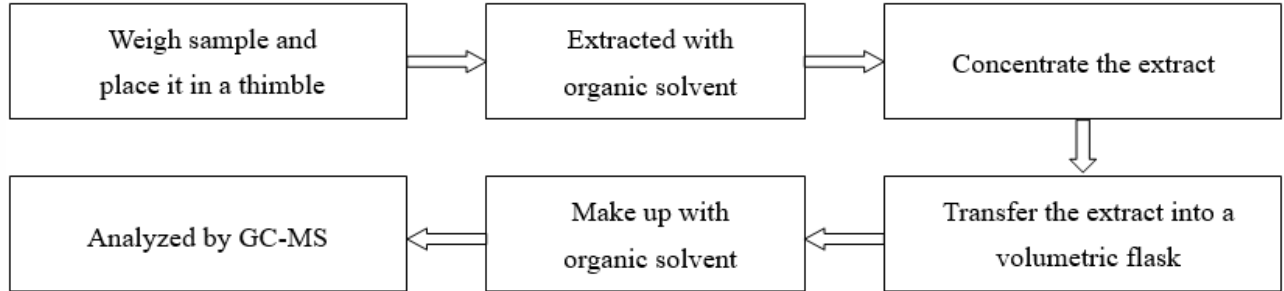


# Test Report

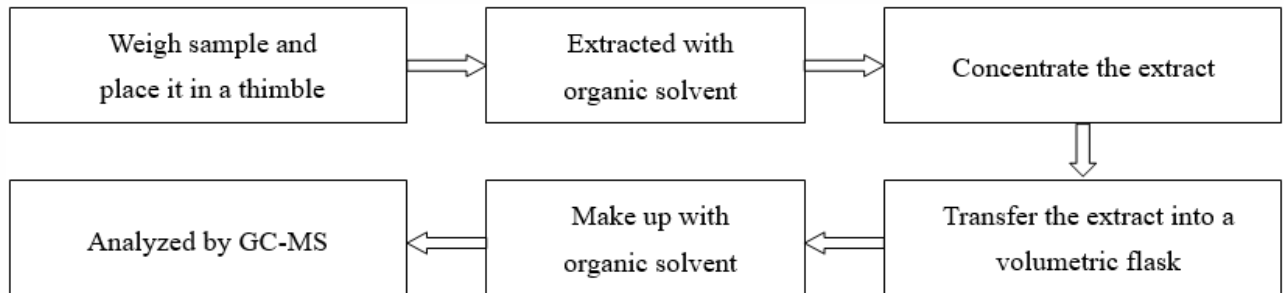
Report No. A226042892110104

Page 8 of 9

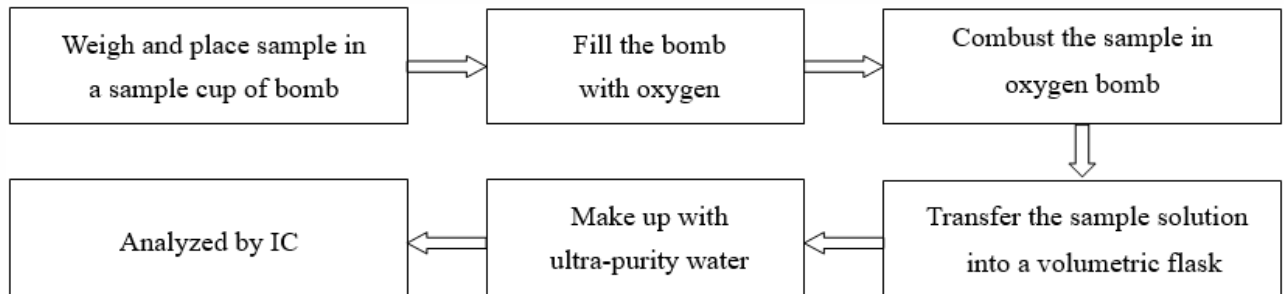
## 4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



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



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

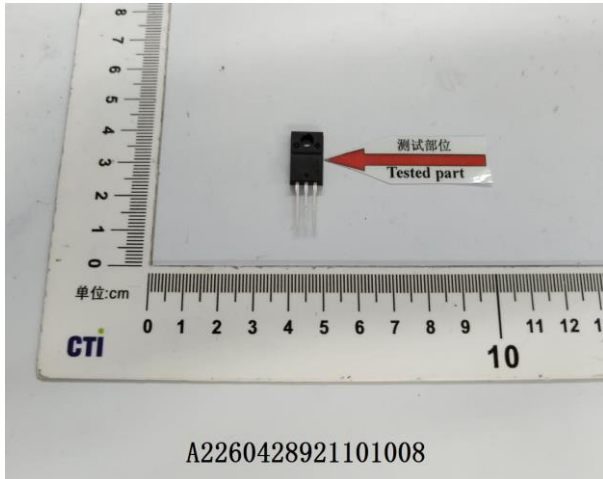


# Test Report

Report No. A226042892110104

Page 9 of 9

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



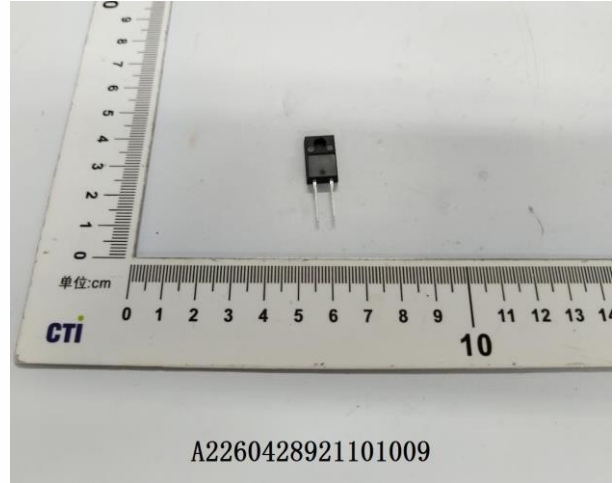
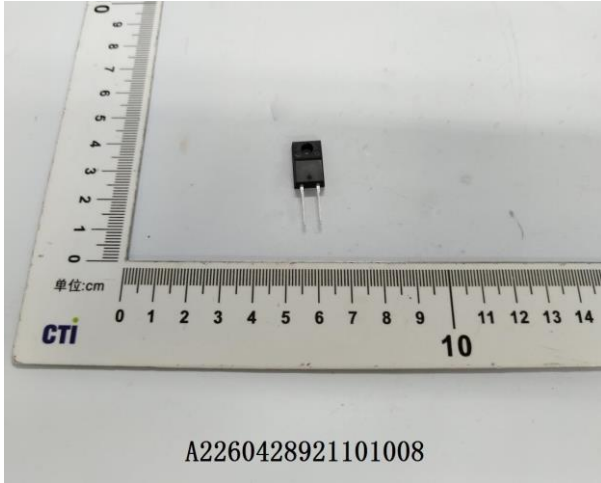
### Statement:

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 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 A226042892110104.