

Test Report

Report No. A2240315076101001

Company Name ZHANHUA ELECTRONIC MATERIAL(CHANGSHU)CO LTD

shown on Report

Address YUSHAN NEW &HIGH TECH INDUSTRIAL PARK,CHANGSHU JIANGSU,CHINA

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

Sample Name leadframe
Model No. TO-252B-4R
Material KFC/C19210/TFe0.1
Sample Received Date May 31, 2024
Testing Period May 31, 2024 to Jun. 5, 2024

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), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Polychlorinated Biphenyls(PCBs), Perfluorooctanoic Acid(PFOA), Perfluorooctane Sulfonates(PFOS) 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

Song Yan

Date

Jun. 5, 2024

Song Yan

Technical Manager

No. R375305396

Centre Testing International(Suzhou) Co.,Ltd

No.3286Chengyang Road, Xiangcheng District, Suzhou, Jiangsu

Test Report

Report No. A2240315076101001

Page 2 of 9

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
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
Polychlorinated Biphenyls(PCBs)	Refer to US EPA 3550C:2007 & US EPA 8270E:2018	GC-MS
Perfluorooctanoic Acid(PFOA)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS
Perfluorooctane Sulfonates(PFOS)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS



Test Report

Report No. A2240315076101001

Page 4 of 9

Test Result(s)

Tested Item(s)	Result	MDL
	001	
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
	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	
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	
Polychlorinated Biphenyls(PCBs)		
Monochlorobiphenyl	N.D.	5 mg/kg
Dichlorobiphenyl	N.D.	5 mg/kg
Trichlorobiphenyl	N.D.	5 mg/kg
Tetrachlorobiphenyl	N.D.	5 mg/kg
Pentachlorobiphenyl	N.D.	5 mg/kg
Hexachlorobiphenyl	N.D.	5 mg/kg
Heptachlorobiphenyl	N.D.	5 mg/kg
Octachlorobiphenyl	N.D.	5 mg/kg
Nonachlorobiphenyl	N.D.	5 mg/kg
Decachlorobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
	001	
Perfluorooctanoic Acid (PFOA)	N.D.	5 mg/kg

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Test Report

Report No. A2240315076101001

Page 5 of 9

Test Result(s)

Tested Item(s)	Result	MDL
	001	
Perfluorooctane Sulfonates (PFOS)	N.D.	5 mg/kg

Sample/Part Description

No.	CTI Sample ID	Description
1	001	Cupreous metal

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury, Arsenic, Beryllium, Antimony.

-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 $\mu\text{g}/\text{cm}^2$

-▼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.

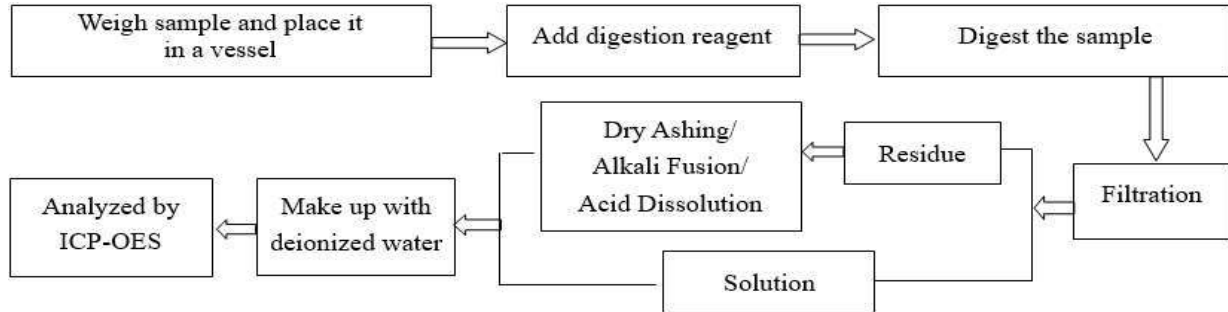
Test Report

Report No. A2240315076101001

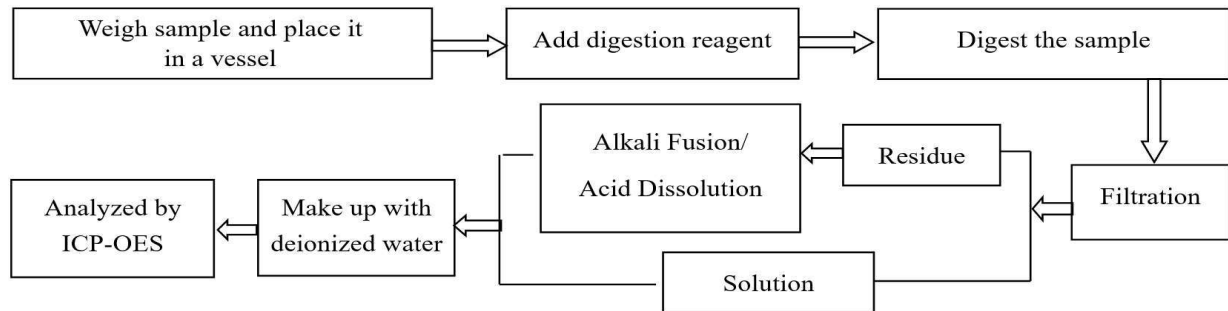
Page 6 of 9

Test Process

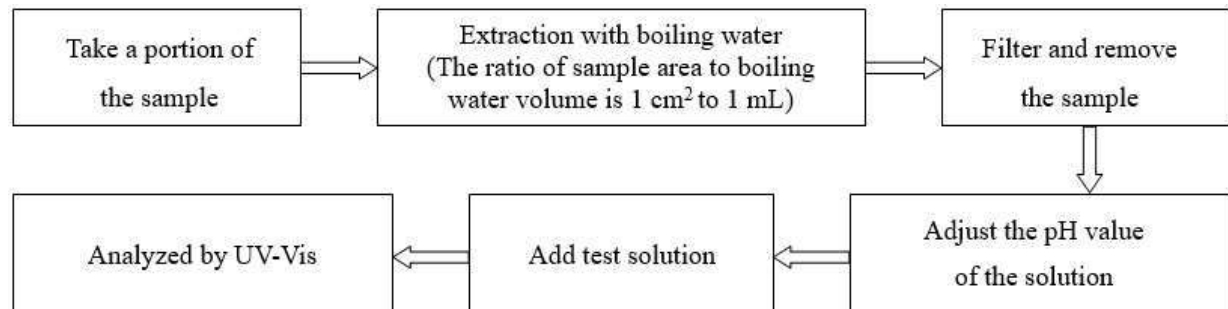
1. Lead (Pb), Cadmium (Cd)



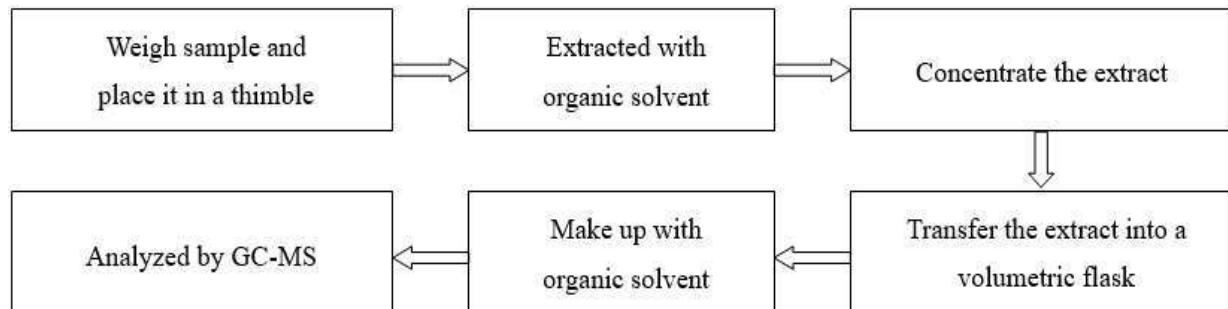
2. Mercury (Hg)



3. Hexavalent Chromium (Cr(VI))



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



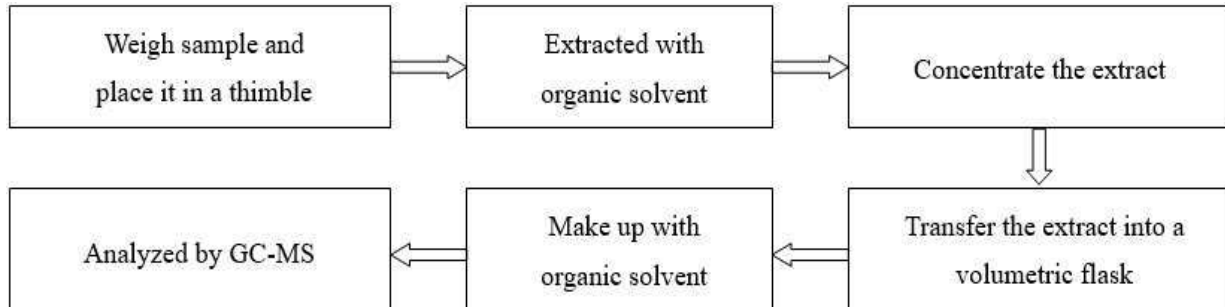
CTI 华测检测

Test Report

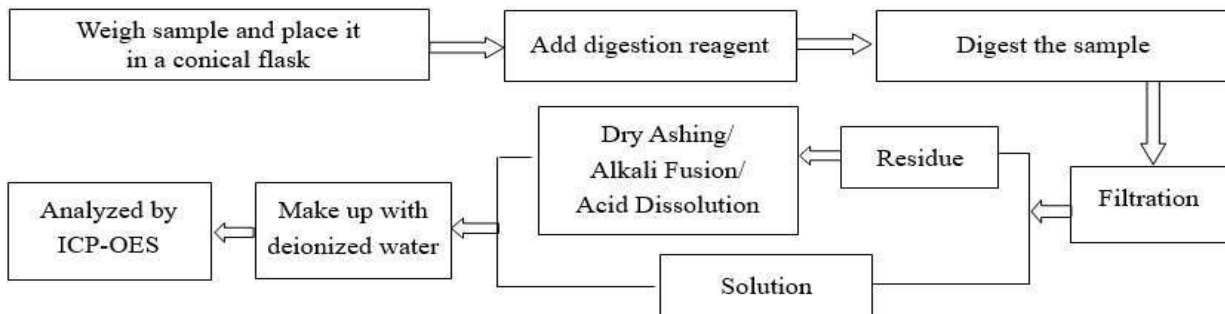
Report No. A2240315076101001

Page 7 of 9

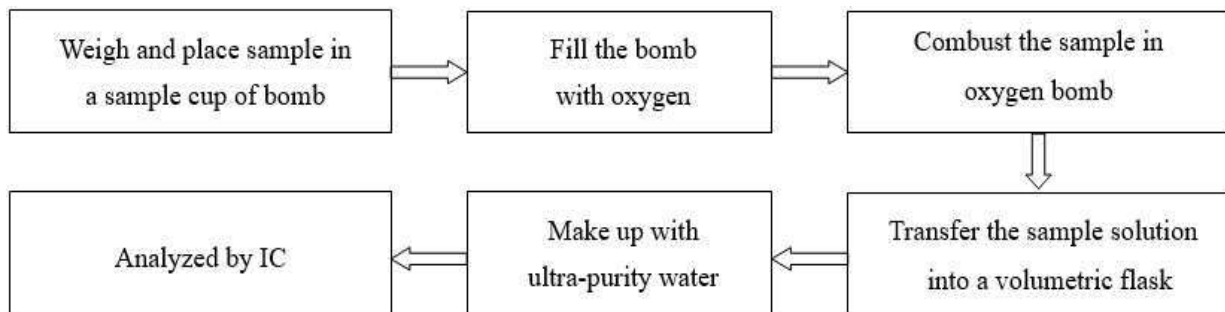
5. Phthalates (DBP, BBP, DEHP, DIBP)



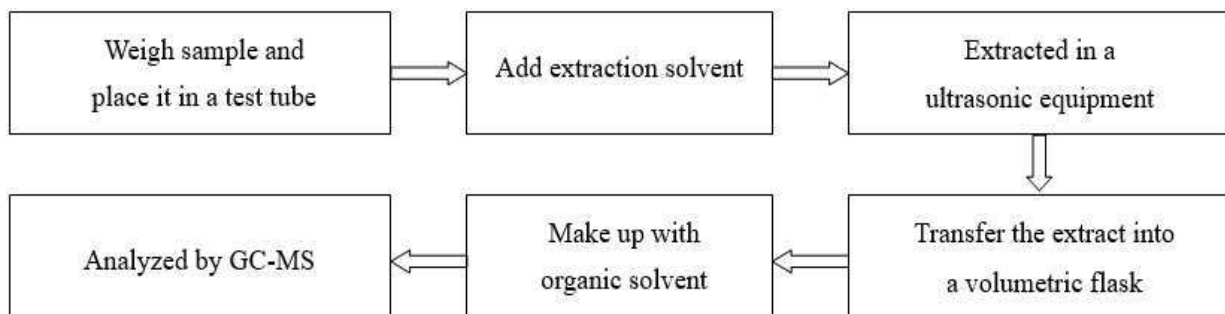
6. Arsenic(As), Beryllium(Be), Antimony(Sb)



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



8. Polychlorinated Biphenyls(PCBs)



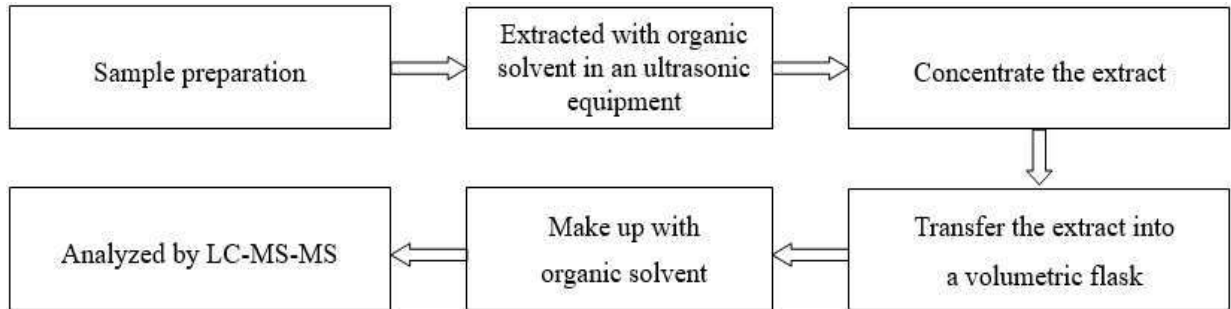
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Test Report

Report No. A2240315076101001

Page 8 of 9

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



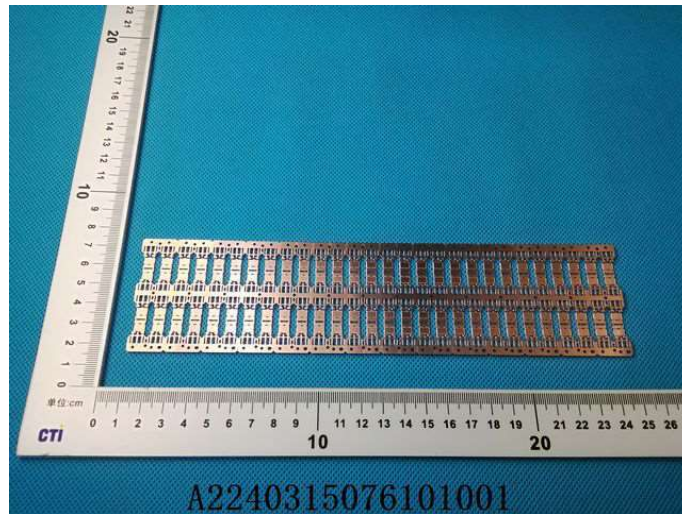
CTI 华测检测

Test Report

Report No. A2240315076101001

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 testing reports (if generated), the Chinese version shall prevail.

*** End of report ***

Appendix

Client Reference Information

TO-252-4R/TO-251A/TO-251B/TO-251C/TO-251DL/TO-252/TO-126/TO-92/TO-220DFB/TO-220HW/TO-220E/T
O-220C/TO-220CB/TO-220R/TO-263S/TO-220S/TO-255/TO-220AB/TO-263LF/TO-220F/TO-220FT/TO-220H/TO
-263H/SMAF/TO-3PB/TO-251LFS(H)/IPAKDPAK/ITO-220/TO-220HD/D2PAK/TO-263HW/ITO-220OP1/ITO-220
OP1AC/GBJ-12/GBU/RBU/RXB/GBP/GBJ3#/GBJ4#/TO-220MF/TO-220FP/IPAKM/DPAKM/TO-2203A/ITO-220AB
/TO-263/T0-247/T0-3PH/T0-220F-3L/TO-263HC/TO-3PL

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 A2240315076101001.