



Test Report

Report No. A225025211710104

Page 1 of 11

Company Name HONGDA ELECTRONICS CO., LIMITED**shown on Report****Address** BUILDING NO 22, CHANGPING ZHU BAO YUAN INDUSTRIAL PARK,
CHANGPING, DONGGUAN, GUANGDONG, CHINA.**The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant**

CTI Sample ID	Sample Name(s)
001	Chip MLCC Multilayer Ceramic Capacitors
002	Axial & Radial Multilayer Ceramic Capacitors
003	Axial & Radial Multilayer Ceramic Capacitors
004	Color Ring Capacitors
005	Axial & Radial Monolithic Ceramic Capacitors

Sample Received Date Apr. 28, 2025

Testing Period Apr. 28, 2025 to May 7, 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) in the submitted sample(s).

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

Approved by

Ophelie Wen

Date

May 9, 2025

Ophelie Wen

Lab Authorized Signatory

No. R294341251

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. A225025211710104

Page 2 of 11

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

Test Report

Report No. A225025211710104

Page 3 of 11

Test Result(s)

Tested Item(s)	Result			MDL
	001	002	003	
Lead (Pb)	N.D.	N.D.	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	N.D.	N.D.	2 mg/kg
Mercury (Hg)	N.D.	N.D.	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	N.D.	--	8 mg/kg
	--	--	N.D.▼	0.10 µg/cm ² (LOQ)

Tested Item(s)	Result		MDL
	004	005	
Lead (Pb)	N.D.	N.D.	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.	N.D.	8 mg/kg
	--	--	0.10 µg/cm ² (LOQ)

Tested Item(s)	Result			MDL
	001	002	004	
Polybrominated Biphenyls (PBBs)				
Monobromobiphenyl	N.D.	N.D.	N.D.	25 mg/kg
Dibromobiphenyl	N.D.	N.D.	N.D.	25 mg/kg
Tribromobiphenyl	N.D.	N.D.	N.D.	25 mg/kg
Tetrabromobiphenyl	N.D.	N.D.	N.D.	25 mg/kg
Pentabromobiphenyl	N.D.	N.D.	N.D.	25 mg/kg
Hexabromobiphenyl	N.D.	N.D.	N.D.	25 mg/kg
Heptabromobiphenyl	N.D.	N.D.	N.D.	25 mg/kg
Octabromobiphenyl	N.D.	N.D.	N.D.	25 mg/kg
Nonabromobiphenyl	N.D.	N.D.	N.D.	25 mg/kg
Decabromobiphenyl	N.D.	N.D.	N.D.	25 mg/kg

Test Report

Report No. A225025211710104

Page 4 of 11

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
Hexabromobiphenyl	N.D.	25 mg/kg
Heptabromobiphenyl	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
	005	
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
Hexabromobiphenyl	N.D.	25 mg/kg
Heptabromobiphenyl	N.D.	25 mg/kg
Octabromobiphenyl	N.D.	25 mg/kg
Nonabromobiphenyl	N.D.	25 mg/kg
Decabromobiphenyl	N.D.	25 mg/kg

Test Report

Report No. A225025211710104

Page 5 of 11

Tested Item(s)	Result			MDL
	001	002	004	
Polybrominated Diphenyl Ethers (PBDEs)				
Monobromodiphenyl ether	N.D.	N.D.	N.D.	25 mg/kg
Dibromodiphenyl ether	N.D.	N.D.	N.D.	25 mg/kg
Tribromodiphenyl ether	N.D.	N.D.	N.D.	25 mg/kg
Tetrabromodiphenyl ether	N.D.	N.D.	N.D.	25 mg/kg
Pentabromodiphenyl ether	N.D.	N.D.	N.D.	25 mg/kg
Hexabromodiphenyl ether	N.D.	N.D.	N.D.	25 mg/kg
Heptabromodiphenyl ether	N.D.	N.D.	N.D.	25 mg/kg
Octabromodiphenyl ether	N.D.	N.D.	N.D.	25 mg/kg
Nonabromodiphenyl ether	N.D.	N.D.	N.D.	25 mg/kg
Decabromodiphenyl ether	N.D.	N.D.	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

Test Report

Report No. A225025211710104

Page 6 of 11

Tested Item(s)	Result	MDL
	005	
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

Tested Item(s)	Result			MDL
	001	002	004	
Phthalates (DBP, BBP, DEHP, DIBP)				
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	N.D.	N.D.	50 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	N.D.	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	N.D.	N.D.	50 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	N.D.	N.D.	50 mg/kg

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

Test Report

Report No. A225025211710104

Page 7 of 11

Tested Item(s)	Result	MDL
	005	
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

Sample/Part Description

No.	CTI Sample ID	Description
1	001 [#]	Capacitance(Tested as a whole)
2	002 ^{#1}	Mixed test, yellow body with brown printing
3	003 ^{#1}	Mixed test, metal pin with silvery plating
4	004 [#]	Yellow body with multicolor ink(Tested as a whole)
5	005 [#]	Yellow body with brown printing(Tested as a whole)

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.

-^{#1}As specified by client, the test was conducted by mixing several samples together. 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

-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 µg/cm²

-▼The sample is negative for Cr(VI) – The Cr(VI) concentration is below 0.10 µg/cm². 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 for company relations, the test result(s) of this report is/are presented in reference to the result(s) that reported in A2250252117101R1.

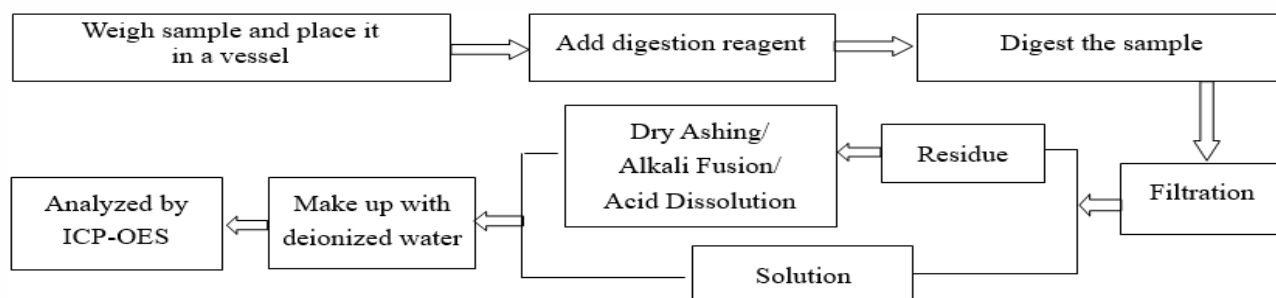
Test Report

Report No. A225025211710104

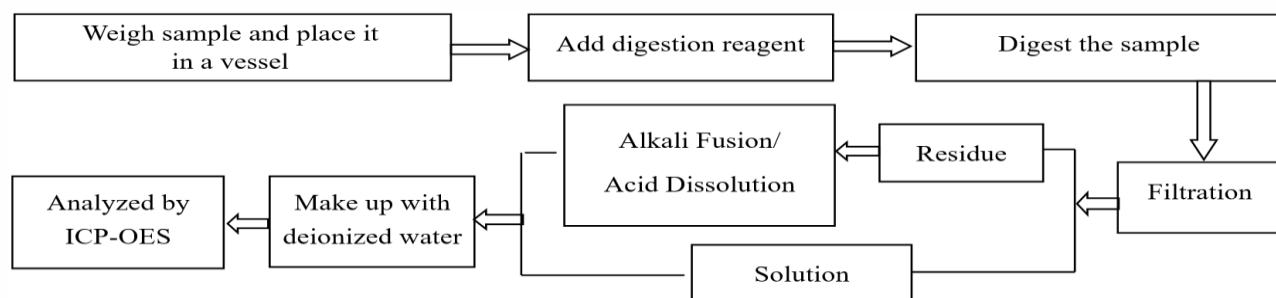
Page 8 of 11

Test Process

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

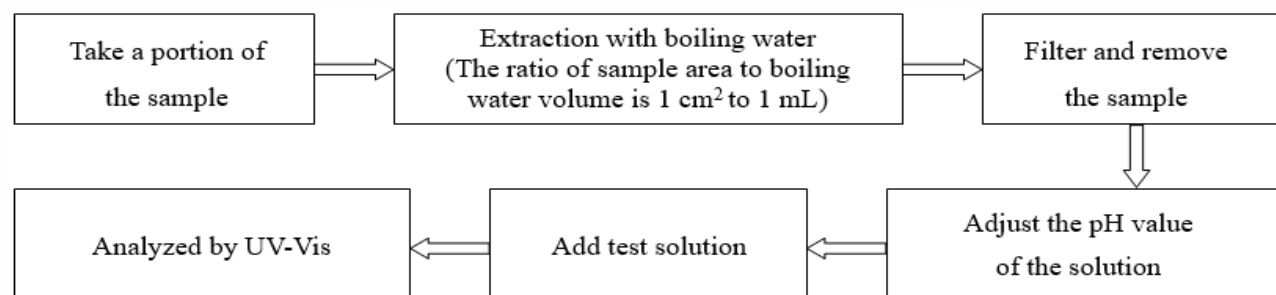


2. Mercury (Hg)

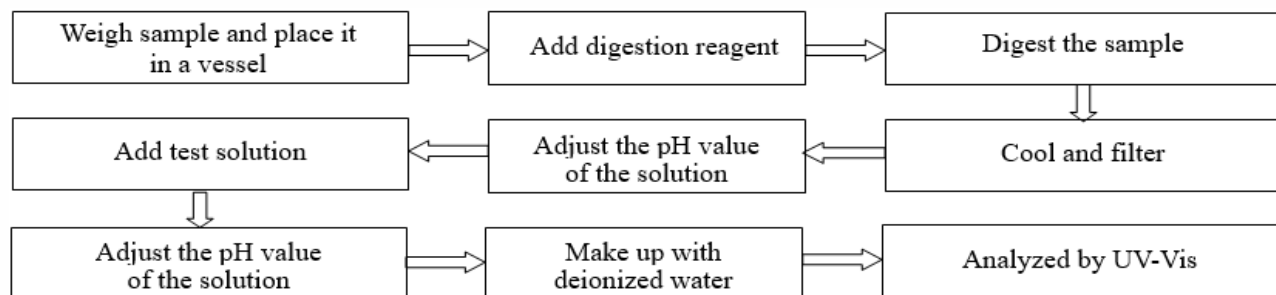


3. Hexavalent Chromium (Cr(VI))

(1) IEC 62321-7-1:2015



(2) IEC 62321-7-2:2017

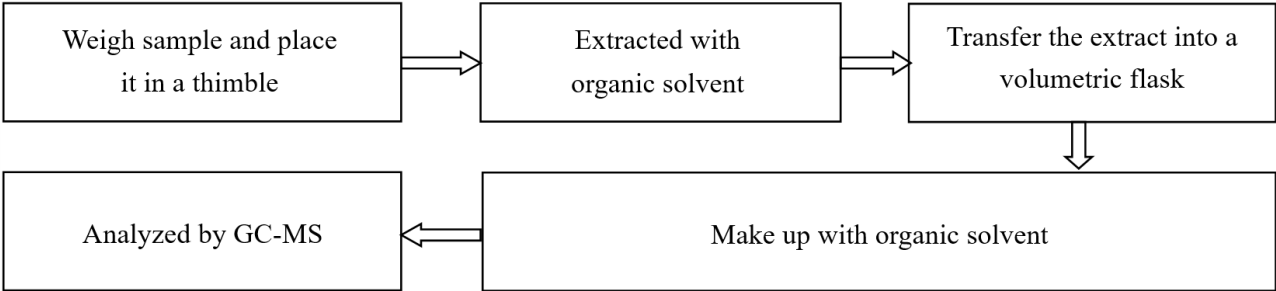


Test Report

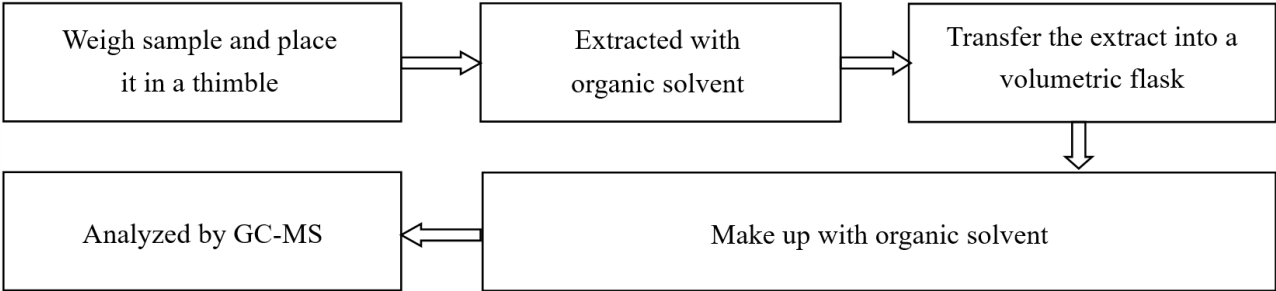
Report No. A225025211710104

Page 9 of 11

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



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

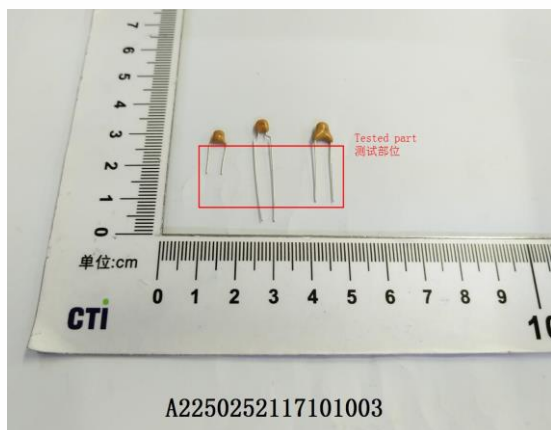
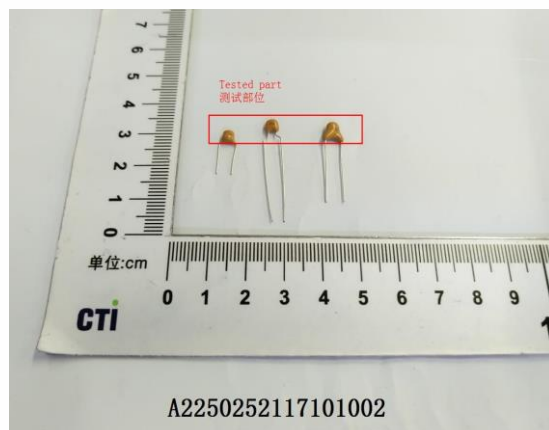


Test Report

Report No. A225025211710104

Page 10 of 11

Photo(s) of the sample(s)



Test Report

Report No. A225025211710104

Page 11 of 11

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 ***

