



## Test Report

Report No. A221017248910101

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**Company Name** UF CAPACITORS FACTORY  
**shown on Report**

**Address** SHAHU ROAD NO.28, ZHAOQING CITY, GUANGDONG, CHINA

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

Sample No.	Sample Name(s)
001	Chip MLCC Multilayer Ceramic Capacitors
002	Axial & Radial Multilayer Ceramic Capacitors
003	Axial & Radial Monolithic Ceramic Capacitors
004	Axial & Radial Monolithic Ceramic Capacitors

Sample Received Date May 11, 2021  
Testing Period May 11, 2021 to May 20, 2021

**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).

Tested by Grace Sun

Reviewed by Tim Yu

Approved by Hill Zheng  
Hill Zheng  
Technical Manager

Date May 20, 2021

No. R294346758



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 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS

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## 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.	N.D.	8 mg/kg
	--	--	--	0.10 µg/cm <sup>2</sup> (LOQ)

Tested Item(s)	Result	MDL
	004	
Lead (Pb)	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	--	8 mg/kg
	N.D.▼	0.10 µg/cm <sup>2</sup> (LOQ)

Tested Item(s)	Result			MDL
	001	002	003	
<b>Polybrominated Biphenyls (PBBs)</b>				
Monobromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg

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Tested Item(s)	Result		MDL
	004		
<b>Polybrominated Biphenyls (PBBs)*</b>			
Monobromobiphenyl	N.D.		5 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
	001	002	003	
<b>Polybrominated Diphenyl Ethers (PBDEs)</b>				
Monobromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg

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Tested Item(s)	Result		MDL
	004		
<b>Polybrominated Diphenyl Ethers (PBDEs)*</b>			
Monobromodiphenyl ether	N.D.		5 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

Tested Item(s)	Result			MDL
	001	002	003	
<b>Phthalates (DBP, BBP, DEHP, DIBP)</b>				
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
	004		
<b>Phthalates (DBP, BBP, DEHP, DIBP)*</b>			
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

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## Sample/Part Description

- 001 SMD capacitors(Tested as a whole)#
- 002 Brown-yellow body with brown printing(Tested as a whole)#
- 003 Brown-yellow body with brown printing(Tested as a whole)#
- 004 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.  
-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.  
-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 A2210172489101.

**Note:** \*indicates the item(s)/method(s) is (are) not in CNAS accreditation scope.

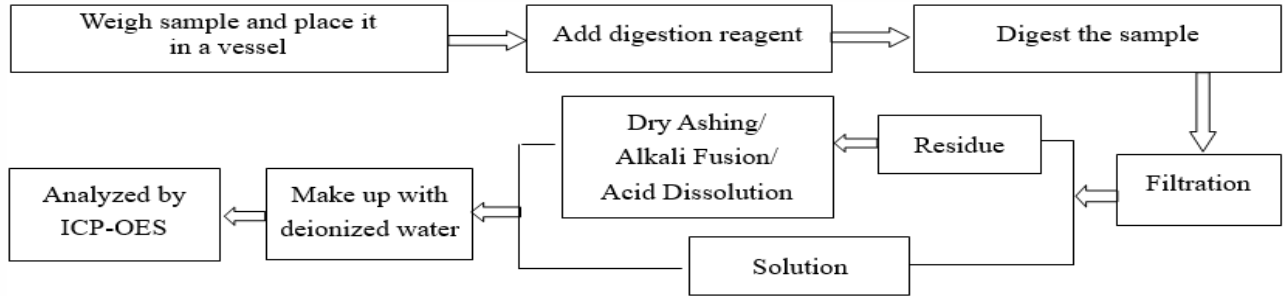
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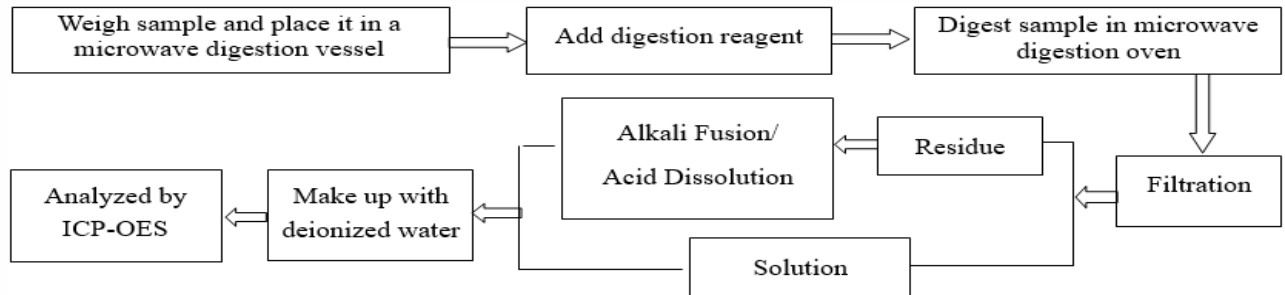
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**Test Process**

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

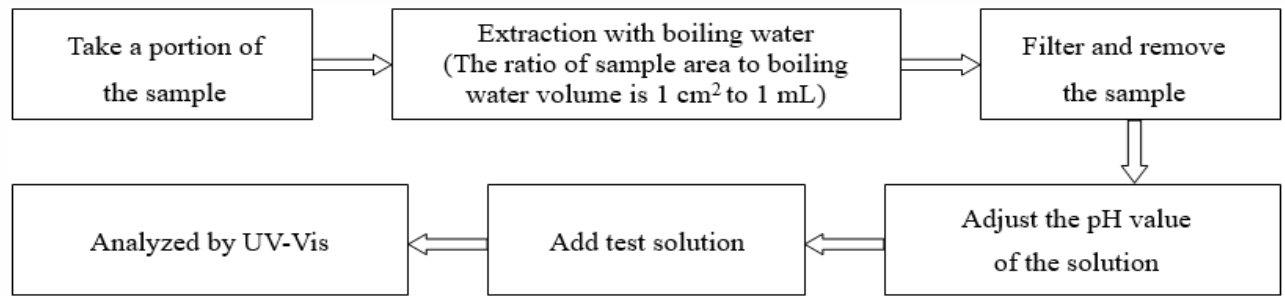


**2. Mercury (Hg)**

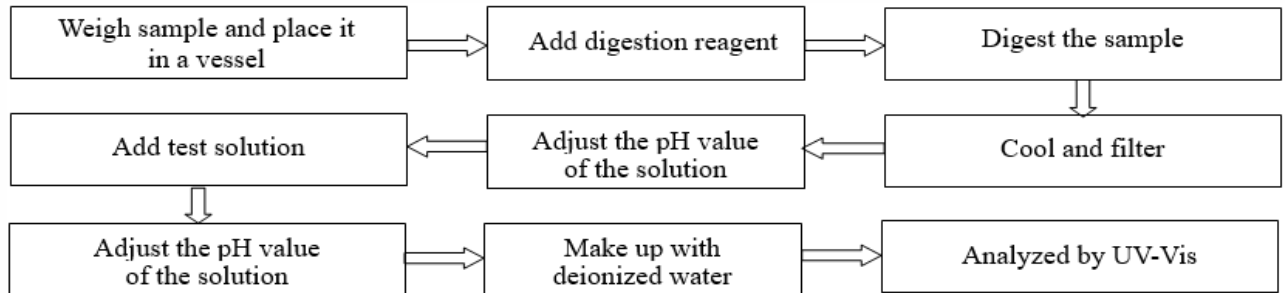


**3. Hexavalent Chromium (Cr(VI))**

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



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

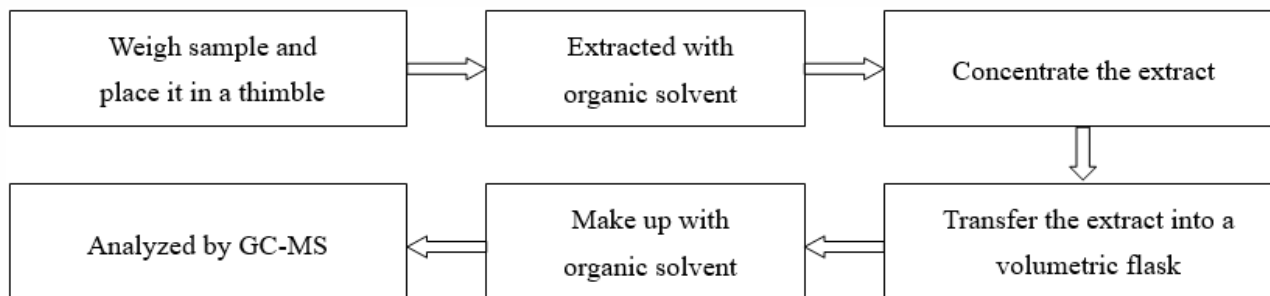


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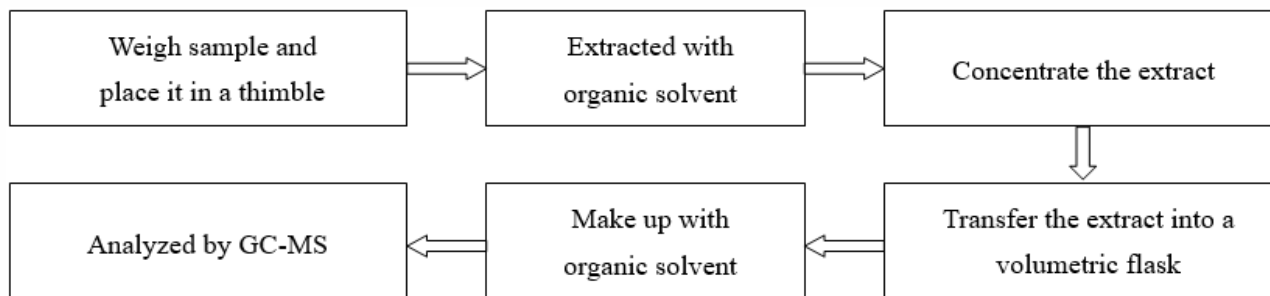
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## 4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



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





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

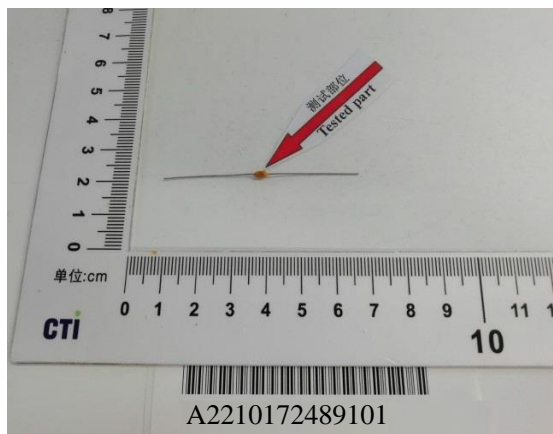
001



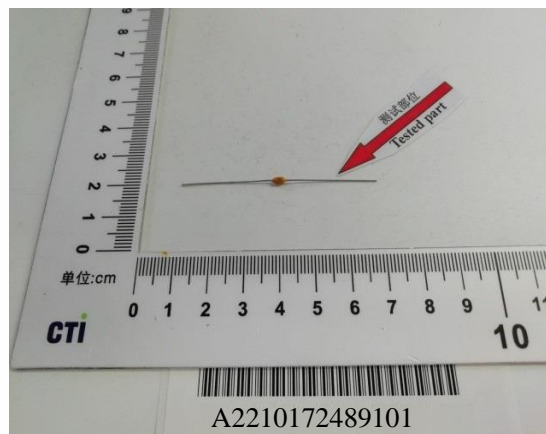
002



003



004



### 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 \*\*\*