Test Report

Company Name shown on Report	DONGGUAN AILLEN ELECTRONIC TECHNOLOGY CO., LTD.
Address	NO.28, JINGGANG ZHONG ROAD, SHATIAN TOWN, DONGGUAN CITY, GUANGDONG PROVINCE, P. R. CHINA

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

Sample Name	Dip Aluminum Eletrolytic Capacitor(low voltage)
Sample Received Date	Jul. 15, 2024
Testing Period	Jul. 15, 2024 to Jul. 24, 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) in the submitted sample(s).
Test Method/Test Result(s)	Please refer to the following page(s).

Approved by: Hill Zheng Date: Jul. 24, 2024

Hill Zheng
Technical Manager

No. R677502636

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

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Conclusion

Tested Sample	According to standard/directive	Result
Submitted Sample	RoHS Directive 2011/65/EU with amendment (EU) 2015/863	PASS

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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

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

Test Report

Test Result(s)

Tested Item(s)	Result			MDL	Limit
	1	2	3		
Lead (Pb)	N.D.	N.D.	N.D.	10 mg/kg	1000 mg/kg
Cadmium (Cd)	N.D.	N.D.	N.D.	10 mg/kg	100 mg/kg
Mercury (Hg)	N.D.	N.D.	N.D.	10 mg/kg	1000 mg/kg
Hexavalent Chromium (Cr(VI))	--	N.D.▼	--	0.10 μg/cm ² (LOQ)	1000 mg/kg
	N.D.	--	N.D.	20 mg/kg	1000 mg/kg

Tested Item(s)	Result			MDL	Limit
	4	5	6		
Lead (Pb)	N.D.	N.D.	N.D.	10 mg/kg	1000 mg/kg
Cadmium (Cd)	N.D.	N.D.	N.D.	10 mg/kg	100 mg/kg
Mercury (Hg)	N.D.	N.D.	N.D.	10 mg/kg	1000 mg/kg
Hexavalent Chromium (Cr(VI))	--	--	N.D.▼	0.10 μg/cm ² (LOQ)	1000 mg/kg
	N.D.	N.D.	--	20 mg/kg	1000 mg/kg

Tested Item(s)	Result			MDL	Limit
	7	8	9		
Lead (Pb)	N.D.	N.D.	N.D.	10 mg/kg	1000 mg/kg
Cadmium (Cd)	N.D.	N.D.	N.D.	10 mg/kg	100 mg/kg
Mercury (Hg)	N.D.	N.D.	N.D.	10 mg/kg	1000 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.▼	N.D.▼	N.D.▼	0.10 μg/cm ² (LOQ)	1000 mg/kg
	--	--	--	20 mg/kg	1000 mg/kg

Test Report

Tested Item(s)	Result			MDL	Limit
	2	8	9		
Polybrominated Biphenyls (PBBs)*					
Monobromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	1000 mg/kg
Dibromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Tribromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Tetrabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Pentabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Hexabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Heptabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Octabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Nonabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Decabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	

Tested Item(s)	Result		MDL	Limit
	6	7		
Polybrominated Biphenyls (PBBs)				
Monobromobiphenyl	N.D.	N.D.	100 mg/kg	1000 mg/kg
Dibromobiphenyl	N.D.	N.D.	100 mg/kg	
Tribromobiphenyl	N.D.	N.D.	100 mg/kg	
Tetrabromobiphenyl	N.D.	N.D.	100 mg/kg	
Pentabromobiphenyl	N.D.	N.D.	100 mg/kg	
Hexabromobiphenyl	N.D.	N.D.	100 mg/kg	
Heptabromobiphenyl	N.D.	N.D.	100 mg/kg	
Octabromobiphenyl	N.D.	N.D.	100 mg/kg	
Nonabromobiphenyl	N.D.	N.D.	100 mg/kg	
Decabromobiphenyl	N.D.	N.D.	100 mg/kg	

Test Report

Tested Item(s)	Result			MDL	Limit
	2	8	9		
Polybrominated Diphenyl Ethers (PBDEs)*					
Monobromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	1000 mg/kg
Dibromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Tribromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Tetrabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Pentabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Hexabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Heptabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Octabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Nonabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Decabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	

Tested Item(s)	Result		MDL	Limit
	6	7		
Polybrominated Diphenyl Ethers (PBDEs)				
Monobromodiphenyl ether	N.D.	N.D.	100 mg/kg	1000 mg/kg
Dibromodiphenyl ether	N.D.	N.D.	100 mg/kg	
Tribromodiphenyl ether	N.D.	N.D.	100 mg/kg	
Tetrabromodiphenyl ether	N.D.	N.D.	100 mg/kg	
Pentabromodiphenyl ether	N.D.	N.D.	100 mg/kg	
Hexabromodiphenyl ether	N.D.	N.D.	100 mg/kg	
Heptabromodiphenyl ether	N.D.	N.D.	100 mg/kg	
Octabromodiphenyl ether	N.D.	N.D.	100 mg/kg	
Nonabromodiphenyl ether	N.D.	N.D.	100 mg/kg	
Decabromodiphenyl ether	N.D.	N.D.	100 mg/kg	

Test Report

Tested Item(s)	Result			MDL	Limit
	2	8	9		
Phthalates (DBP, BBP, DEHP, DIBP)					
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	N.D.	N.D.	50 mg/kg	1000 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	N.D.	N.D.	50 mg/kg	1000 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	N.D.	N.D.	50 mg/kg	1000 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	N.D.	N.D.	50 mg/kg	1000 mg/kg

Tested Item(s)	Result		MDL	Limit
	6	7		
Phthalates (DBP, BBP, DEHP, DIBP)				
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	N.D.	50 mg/kg	1000 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	N.D.	50 mg/kg	1000 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	N.D.	50 mg/kg	1000 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	N.D.	50 mg/kg	1000 mg/kg

Test Report

Tested Item(s)	Result			MDL	Limit
	1	3	4		
Polybrominated Biphenyls (PBBs)					
Monobromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	1000 mg/kg
Dibromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Tribromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Tetrabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Pentabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Hexabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Heptabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Octabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Nonabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	
Decabromobiphenyl	N.D.	N.D.	N.D.	100 mg/kg	

Tested Item(s)	Result	MDL	Limit
	5		
Polybrominated Biphenyls (PBBs)			
Monobromobiphenyl	N.D.	100 mg/kg	1000 mg/kg
Dibromobiphenyl	N.D.	100 mg/kg	
Tribromobiphenyl	N.D.	100 mg/kg	
Tetrabromobiphenyl	N.D.	100 mg/kg	
Pentabromobiphenyl	N.D.	100 mg/kg	
Hexabromobiphenyl	N.D.	100 mg/kg	
Heptabromobiphenyl	N.D.	100 mg/kg	
Octabromobiphenyl	N.D.	100 mg/kg	
Nonabromobiphenyl	N.D.	100 mg/kg	
Decabromobiphenyl	N.D.	100 mg/kg	

Test Report

Tested Item(s)	Result			MDL	Limit
	1	3	4		
Polybrominated Diphenyl Ethers (PBDEs)					
Monobromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	1000 mg/kg
Dibromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Tribromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Tetrabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Pentabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Hexabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Heptabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Octabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Nonabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	
Decabromodiphenyl ether	N.D.	N.D.	N.D.	100 mg/kg	

Tested Item(s)	Result	MDL	Limit
	5		
Polybrominated Diphenyl Ethers (PBDEs)			
Monobromodiphenyl ether	N.D.	100 mg/kg	1000 mg/kg
Dibromodiphenyl ether	N.D.	100 mg/kg	
Tribromodiphenyl ether	N.D.	100 mg/kg	
Tetrabromodiphenyl ether	N.D.	100 mg/kg	
Pentabromodiphenyl ether	N.D.	100 mg/kg	
Hexabromodiphenyl ether	N.D.	100 mg/kg	
Heptabromodiphenyl ether	N.D.	100 mg/kg	
Octabromodiphenyl ether	N.D.	100 mg/kg	
Nonabromodiphenyl ether	N.D.	100 mg/kg	
Decabromodiphenyl ether	N.D.	100 mg/kg	

Test Report

Tested Item(s)	Result			MDL	Limit
	1	3	4		
Phthalates (DBP, BBP, DEHP, DIBP)					
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	N.D.	N.D.	50 mg/kg	1000 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	N.D.	N.D.	50 mg/kg	1000 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	N.D.	N.D.	50 mg/kg	1000 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	N.D.	N.D.	50 mg/kg	1000 mg/kg

Tested Item(s)	Result	MDL	Limit
	5		
Phthalates (DBP, BBP, DEHP, DIBP)			
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

Sample/Part Description

No.	CTI Sample ID	Description
1	1	Brown plastic with white printing
2	2	Silvery white metal
3	3	Black rubber
4	4	Transparent adhesive tape
5	5	Brown paper
6	6	Silvery grey metal foil
7	7	Silvery metal foil
8	8	Silvery white metal
9	9	Silvery metal pin

Test Report

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

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

-1000 mg/kg = 0.1%

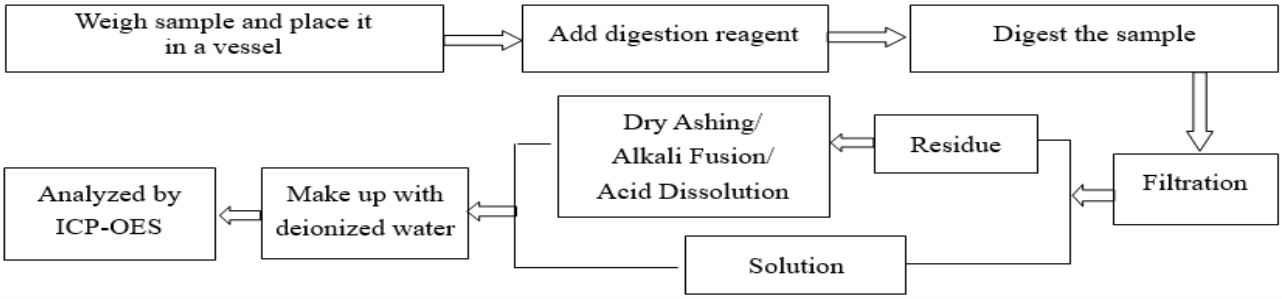
-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 μg/cm^2

-▼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.

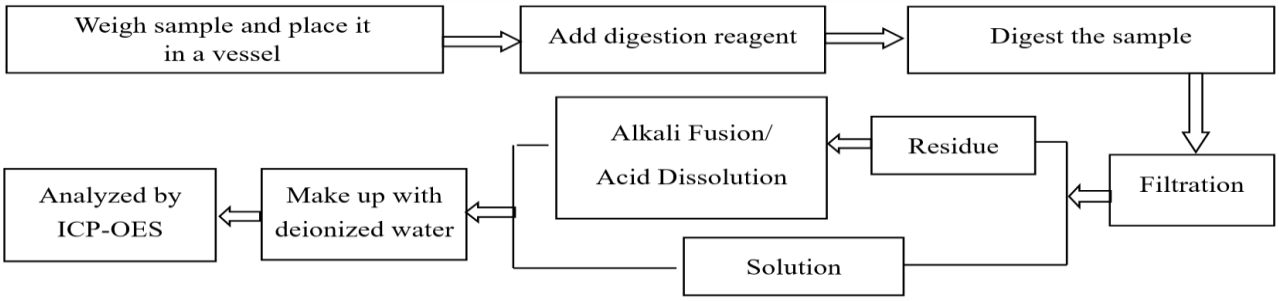
Note: **"*" indicates the item(s)/method(s) is (are) not in CNAS accreditation scope.**

Test Process

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

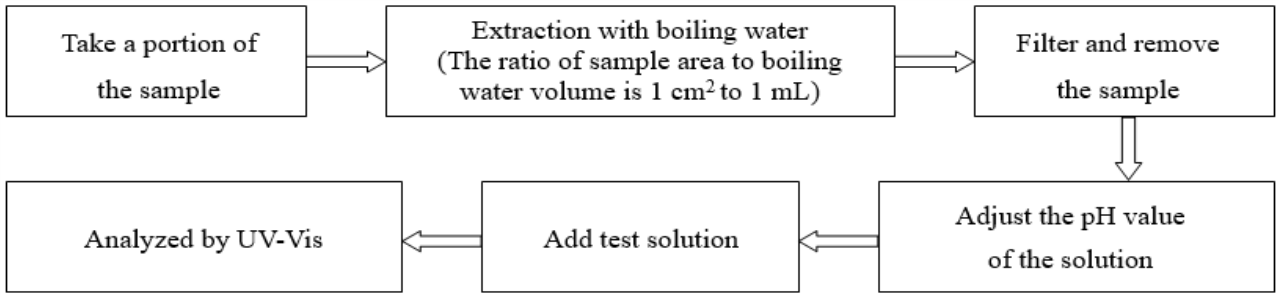


2. Mercury (Hg)

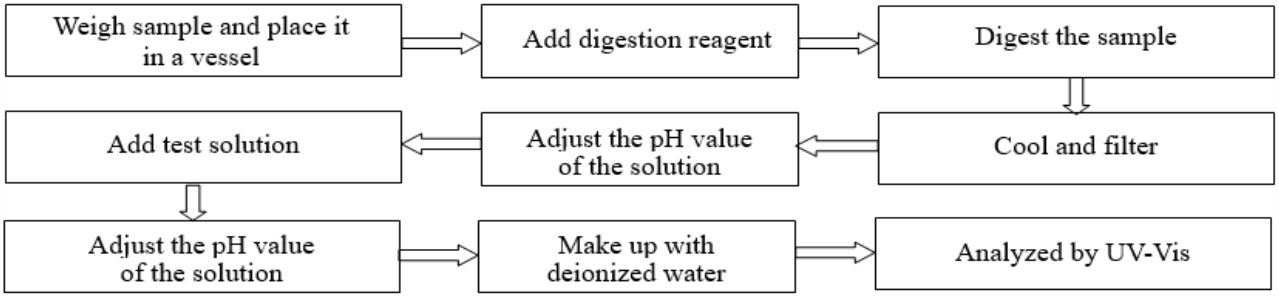


3. Hexavalent Chromium (Cr(VI))

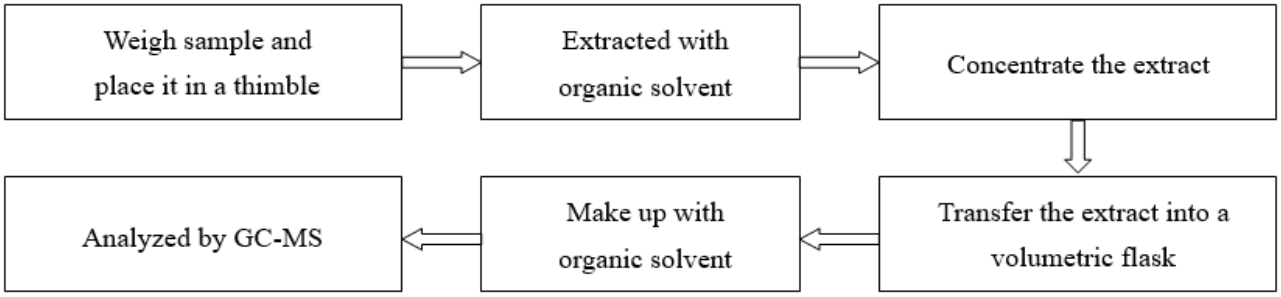
(1) IEC 62321-7-1:2015



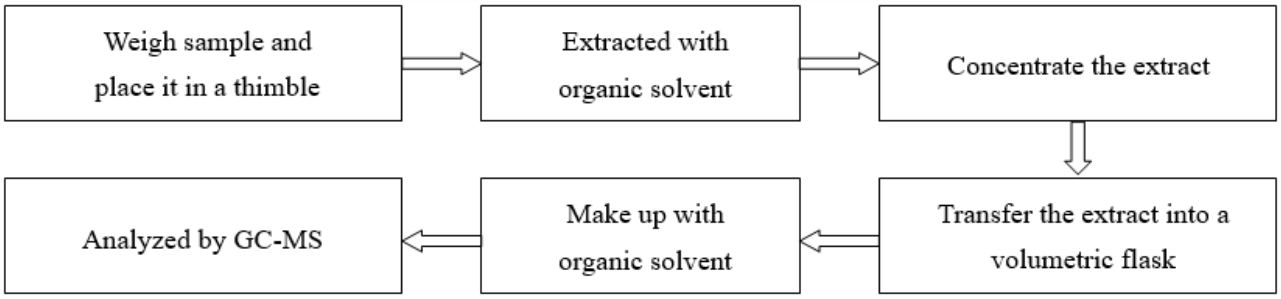
(2) IEC 62321-7-2:2017



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



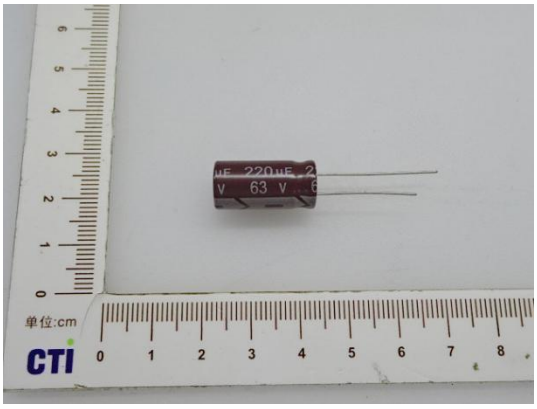
5. Phthalates (DBP, BBP, DEHP, DIBP)

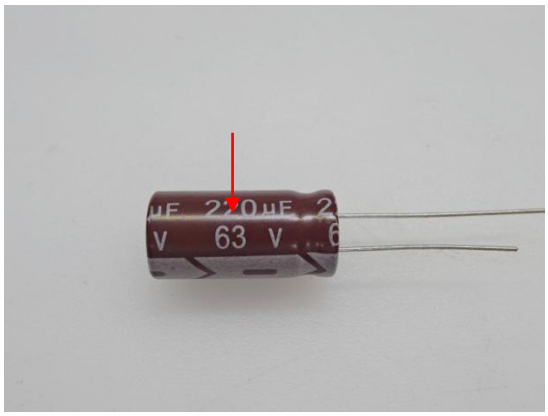


Test Report

Photo(s) of the sample(s)

Final Product 1





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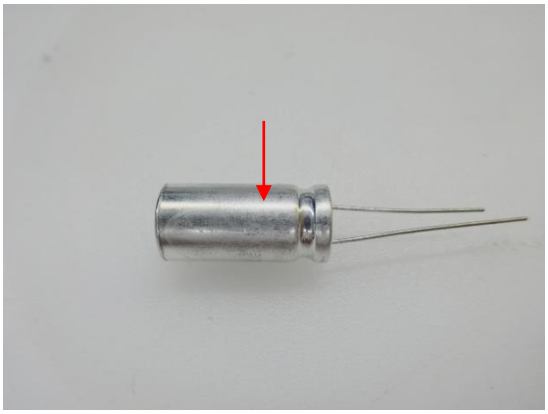

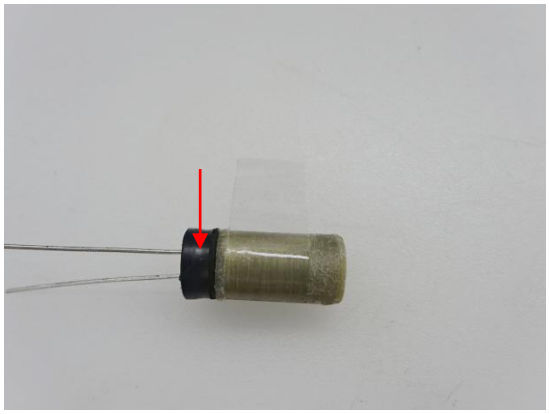

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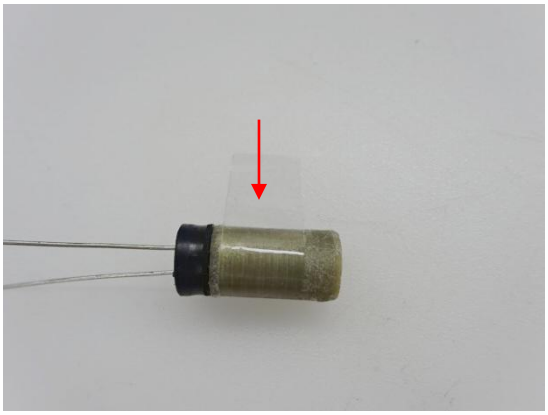

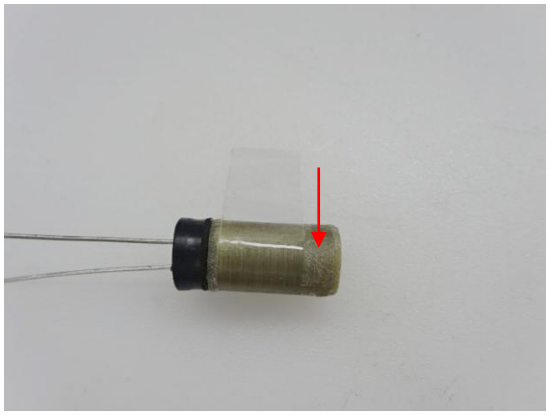

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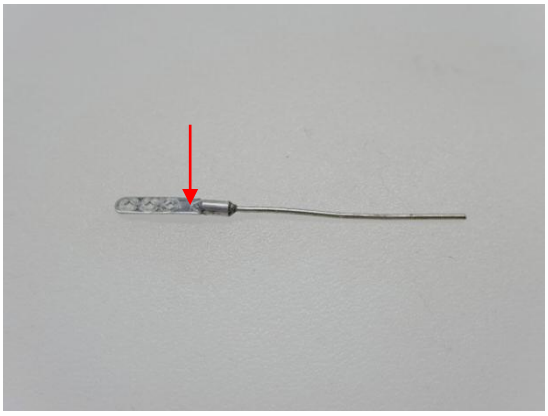

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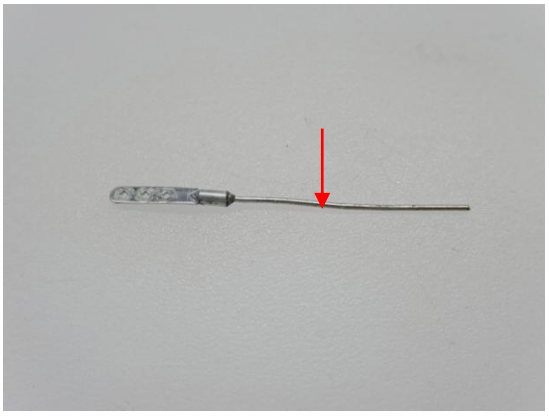

Statement:

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 ***