



Test Report

Report No. A2250461545141

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Company Name DONGGUAN AILLEN ELECTRONIC TECHNOLOGY CO., LTD.
shown on Report
Address NO.32, JINGGANG ZHONGROAD, 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 Screw aluminum electrolytic capacitor
Sample Received Date Jul. 3, 2025
Testing Period Jul. 3, 2025 to Jul. 11, 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

Jul. 22, 2025

Ophelie Wen
Lab Authorized Signatory

No. R179751120

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

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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

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.

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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			RL	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))	--	--	--	0.10 $\mu\text{g}/\text{cm}^2$ (LOQ)	1000 mg/kg
	N.D.	N.D.	N.D.	20 mg/kg	1000 mg/kg

Tested Item(s)	Result			RL	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 $\mu\text{g}/\text{cm}^2$ (LOQ)	1000 mg/kg
	--	N.D.	N.D.	20 mg/kg	1000 mg/kg

Tested Item(s)	Result			RL	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.▼	0.10 $\mu\text{g}/\text{cm}^2$ (LOQ)	1000 mg/kg
	N.D.	N.D.	--	20 mg/kg	1000 mg/kg

Tested Item(s)	Result			RL	Limit
	10	11	12		
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 $\mu\text{g}/\text{cm}^2$ (LOQ)	1000 mg/kg
	N.D.	N.D.	--	20 mg/kg	1000 mg/kg

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Tested Item(s)	Result		RL	Limit
	13	14		
Lead (Pb)	N.D.	N.D.	10 mg/kg	1000 mg/kg
Cadmium (Cd)	N.D.	N.D.	10 mg/kg	100 mg/kg
Mercury (Hg)	N.D.	N.D.	10 mg/kg	1000 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.▼	N.D.▼	0.10 µg/cm ² (LOQ)	1000 mg/kg
	--	--	20 mg/kg	1000 mg/kg

Tested Item(s)	Result			RL	Limit
	4	9	14		
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		RL	Limit
	12	13		
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	

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Tested Item(s)	Result			RL	Limit
	4	9	14		
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		RL	Limit
	12	13		
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	

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Tested Item(s)	Result			RL	Limit
	4	9	14		
Phthalates (DBP, BBP, DEHP, DIBP)					
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
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	N.D.	N.D.	50 mg/kg	1000 mg/kg

Tested Item(s)	Result		RL	Limit
	12	13		
Phthalates (DBP, BBP, DEHP, DIBP)				
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	N.D.	50 mg/kg	1000 mg/kg
Dibutyl phthalate (DBP) CAS#:84-74-2	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

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Tested Item(s)	Result			RL	Limit
	1	2	3		
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			RL	Limit
	5	6	7		
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	

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Tested Item(s)	Result			RL	Limit
	8	10	11		
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			RL	Limit
	1	2	3		
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	

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Tested Item(s)	Result			RL	Limit
	5	6	7		
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			RL	Limit
	8	10	11		
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	

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Tested Item(s)	Result			RL	Limit
	1	2	3		
Phthalates (DBP, BBP, DEHP, DIBP)					
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
Dibutyl phthalate (DBP) CAS#:84-74-2	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			RL	Limit
	5	6	7		
Phthalates (DBP, BBP, DEHP, DIBP)					
Dibutyl phthalate (DBP) CAS#:84-74-2	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
Butyl benzyl phthalate (BBP) CAS#:85-68-7	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			RL	Limit
	8	10	11		
Phthalates (DBP, BBP, DEHP, DIBP)					
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	N.D.	N.D.	50 mg/kg	1000 mg/kg
Dibutyl phthalate (DBP) CAS#:84-74-2	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

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Sample/Part Description

No.	CTI Sample ID	Description
1	1	Black plastic with grey/silvery printing
2	2	Black plastic
3	3	Black plastic
4	4	Silvery white metal
5	5	Black rubber
6	6	Beige glue
7	7	Dark blue silicone rubber
8	8	Black solid
9	9	Silvery white metal
10	10	Transparent adhesive tape
11	11	Brown paper
12	12	Silvery grey metal foil
13	13	Grey metal foil
14	14	Silvery metal

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

-▼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.

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

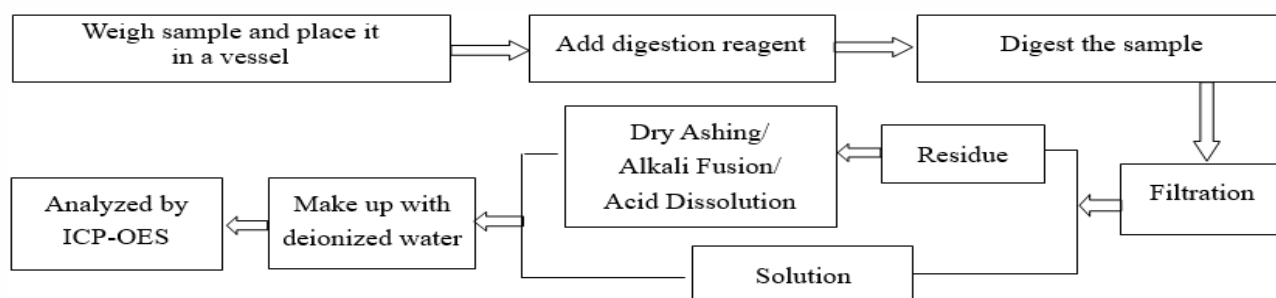
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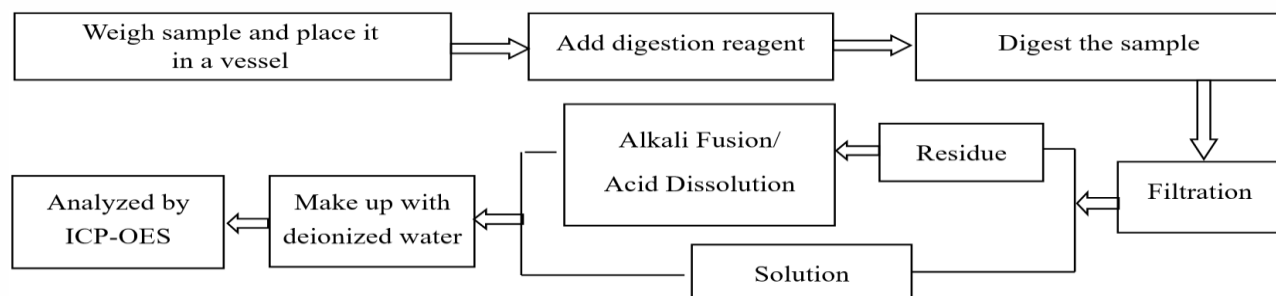
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Test Process

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

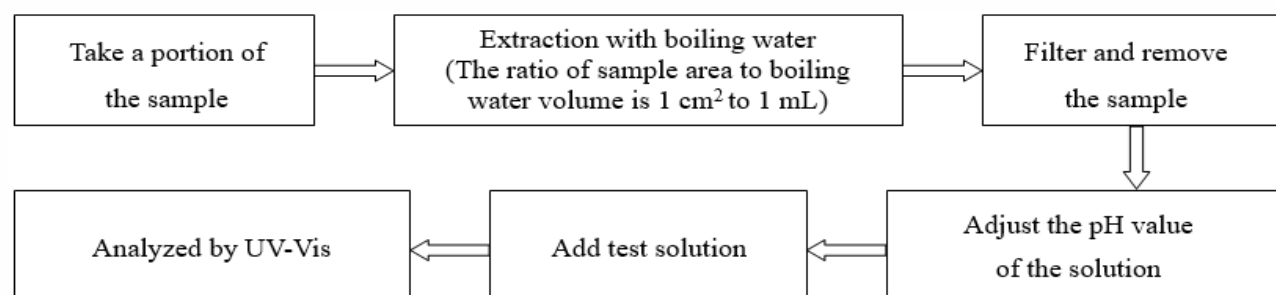


2. Mercury (Hg)

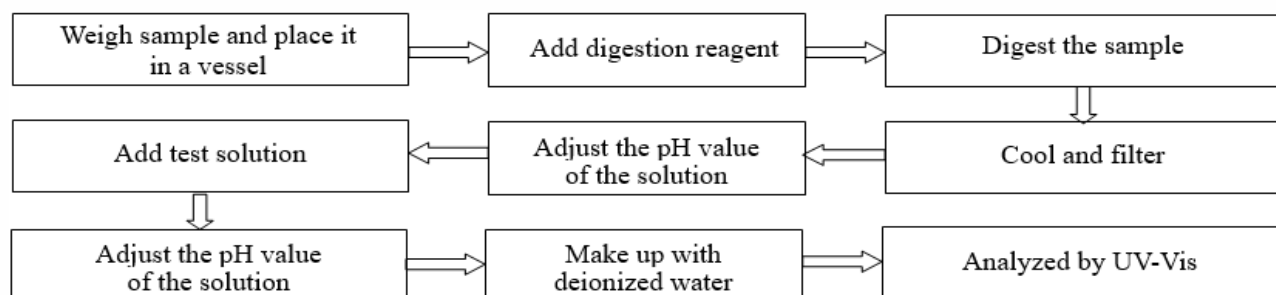


3. Hexavalent Chromium (Cr(VI))

(1) IEC 62321-7-1:2015



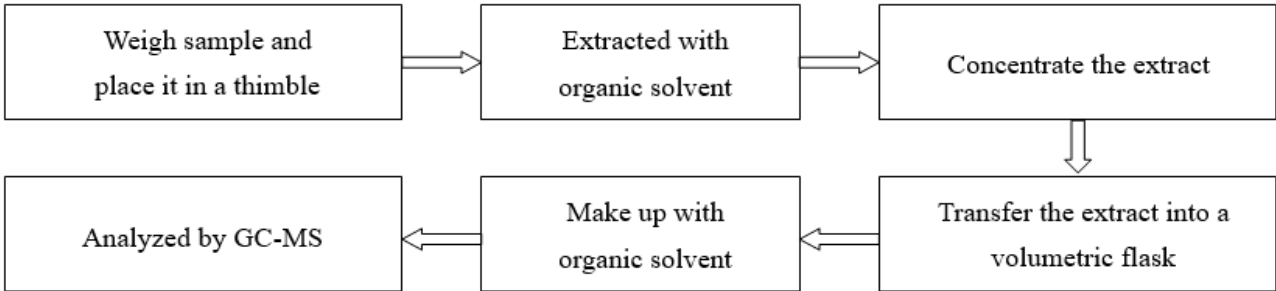
(2) IEC 62321-7-2:2017



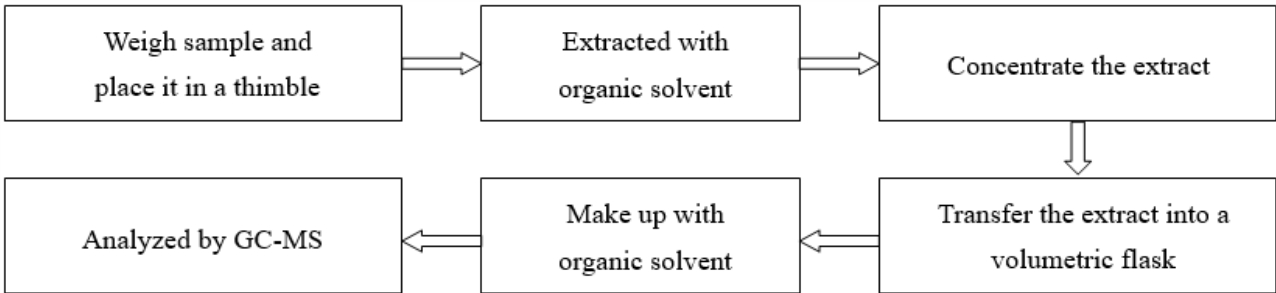
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4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



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



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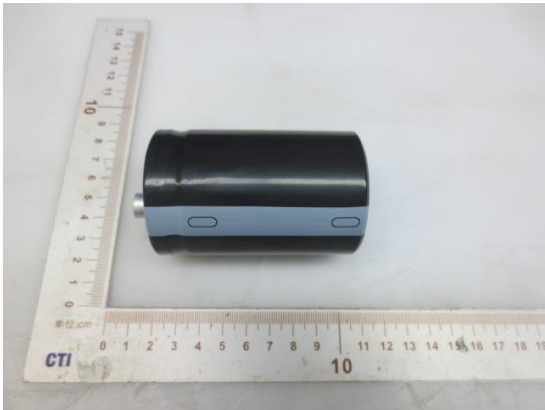
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Photo(s) of the sample(s)

Final Product

1



2



3



4



5

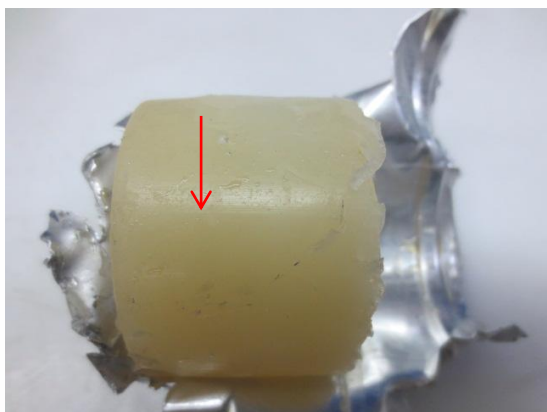


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Statement:

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 ***