

# Test Report

No.: EDG2308280105C00101R

Date: Sep. 22, 2023

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<b>Applicant</b>	: UNI-TREND TECHNOLOGY (CHINA) CO.,LTD.
<b>Address</b>	: No 6, Gong Ye Bei 1 st Road, Songshan Lake National High-Tech Industrial Development Zone, Dongguan City, Guangdong Province, China
<b>Sample Name</b>	: PEN TYPE METER
<b>Style/Item No.</b>	: UT118C
<b>Received Date</b>	: Aug. 29, 2023
<b>Test Period</b>	: Aug. 29, 2023 ~ Sep. 22, 2023
<b>Test Requested</b>	: As requested by the client, to evaluate the compliance of the submitted sample with EU RoHS Directive 2011/65/EU Annex II and its amendment (EU) 2015/863 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
<b>Test Method</b>	: <ol style="list-style-type: none"><li>1. Review was performed for the sample and the related Bill of Materials submitted by the Applicant.</li><li>2. a) Refer to the standard IEC 62321-3-1:2013: Screening by XRF Spectroscopy. b) Wet chemical test<ol style="list-style-type: none"><li>1) Refer to IEC 62321-5:2013, determine the Cadmium, Lead content by ICP-OES.</li><li>2) Refer to IEC 62321-4:2013+A1:2017, determine the Mercury content by ICP-OES;</li><li>3) Refer to IEC 62321-7-1:2015 &amp; IEC 62321-7-2:2017, determine the Hexavalent Chromium content by UV-VIS.</li><li>4) Refer to IEC 62321-6:2015, determine the Polybrominated Biphenyls and Polybrominated Diphenyl Ethers by GC-MS.</li><li>5) Refer to IEC 62321-8:2017, determine the Dibutyl phthalate(DBP), Benzylbutyl phthalate(BBP), Di-2-ethylhexyl phthalate(DEHP) and Diisobutyl phthalate(DIBP) by GC-MS.</li></ol></li></ol>
<b>Test Results</b>	: Please refer to next page (s).

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## Conclusion:

Basing on the test results obtained from the homogenous materials, the submitted sample **COMPLIES** with the EU RoHS Directive 2011/65/EU Annex II and its amendment (EU) 2015/863.




Signed for and on behalf of  
EMTEK(Dongguan) Co., Ltd.

Prepared by:



Wu Jiali, Garli  
Report Engineer

Reviewed by:



Zeng Xingji, Cindy  
Supervisor

Approved by:



Li Wei, Lisa  
Authorized signatory  
Sep. 22, 2023

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## Test Results:

### 1. Pb, Cd, Hg, Cr<sup>6+</sup>, PBBs, PBDEs Test Results:

No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark
1	Black hard plastic with white printing	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
2	Black hard plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
3	Red hard plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	X			
		PBDEs					
4	White hard plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
5	Silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					

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No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark
6	Red soft plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
7	Black hard plastic with multicolor printing	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
8	Black hard plastic with white printing	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
9	Spring-silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
10	Nut-copper metal	Pb	Pb	OL	Pb:26320	Pass	See remark (3)
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					

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No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark
11	Spring-silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
12	Black hard plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	X			
		PBDEs					
13	Silver metal with black plating	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
14	Blue soft plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
15	Yellow soft plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					

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No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark
16	Copper metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
17	Black soft plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
18	Silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
19	Silver metal	Pb	Pb	OL	Pb:25450	Pass	See remark (3)
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
20	Silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					

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No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark
21	Black hard plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
22	Silver metal	Pb	Pb	OL	Pb:22517	Pass	See remark (3)
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
23	Green PCB	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	X			
		PBDEs					
24	Silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
25	SMD IC	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					

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No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark	
26	Shell-black hard plastic	Pb	Pb	BL	NA	Pass	No comment	
		Cd	Cd	BL				
		Hg	Hg	BL				
		Cr <sup>6+</sup>	Cr	BL				
		PBBs	Br	X	ND			
		PBDEs			ND			
27	Iron plate-silver metal	Pb	Pb	BL	NA	Pass	No comment	
		Cd	Cd	BL				
		Hg	Hg	BL				
		Cr <sup>6+</sup>	Cr	BL				
		PBBs	Br	NA				
		PBDEs						
28	Vibrating membrane-silver metal	Pb	Pb	BL	NA	Pass	No comment	
		Cd	Cd	BL				
		Hg	Hg	BL				
		Cr <sup>6+</sup>	Cr	BL				
		PBBs	Br	NA				
		PBDEs						
29	Magnet-black solid	Pb	Pb	BL	NA	Pass	No comment	
		Cd	Cd	BL				
		Hg	Hg	BL				
		Cr <sup>6+</sup>	Cr	BL				
		PBBs	Br	BL				
		PBDEs						
30	Axle-silver metal	Pb	Pb	BL	NA	Pass	No comment	
		Cd	Cd	BL				
		Hg	Hg	BL				
		Cr <sup>6+</sup>	Cr	BL				
		PBBs	Br	NA				
		PBDEs						

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No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark
31	Coil-copper enameled wire	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
32	Base-silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
33	Green PCB	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
34	Solder-silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
35	Pin-silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					

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No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark
36	Black solid	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
37	Blue solid	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
38	LED-transparent hard plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
39	LED-pin-silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
40	Solder-silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					

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41	Black tube	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
42	Electric wire-red soft plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
43	Electric wire-black soft plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
44	Electric wire-copper metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
45	Silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					

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46	SMD capacitor	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
47	SMD IC	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
48	SMD inductor	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
49	SMD resister	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
50	SMD diode	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					

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51	SMD resister	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
52	SMD triode	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
53	Green solid	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
54	White PCB	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL	ND		
		PBBs	Br	X			
		PBDEs					
55	SMD LED	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					

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56	Solder-silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
57	Transparent hard plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
58	Transparent plastic film	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
59	Transparent glass	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
60	Silver plastic film with glue	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					

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No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark
61	White plastic film	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
62	Dark grey/black soft plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
63	Silver plastic film	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
64	Black transparent plastic film	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
65	White plastic film	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					

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No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark
66	Transparent hard plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
67	White soft plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
68	Silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
69	Solder-silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
70	Copper metal	Pb	Pb	OL	Pb:31622	Pass	See remark (3)
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					

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No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark
71	Black soft plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
72	Black soft plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
73	Black hard plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
74	Silver metal	Pb	Pb	OL	Pb:30999	Pass	See remark (3)
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
75	Copper metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					

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No.	Sample description	Restricted substances	Analytical element	Results of EDXRF <sup>(1)</sup>	Results of Chemical Testing <sup>(2)</sup> (mg/kg)	Conclusion	Remark
76	Black soft plastic	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	BL			
		PBDEs					
77	Silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
78	Silver metal	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
79	Silver metal with black plating	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					
80	Silver metal with black plating	Pb	Pb	BL	NA	Pass	No comment
		Cd	Cd	BL			
		Hg	Hg	BL			
		Cr <sup>6+</sup>	Cr	BL			
		PBBs	Br	NA			
		PBDEs					

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## Test Results:

### 2. Phthalates (DBP, BBP, DEHP, DIBP) Test Results:

Test Item	Test Result (mg/kg)			MDL (mg/kg)	Requirement Limit (mg/kg)
	1+2+3	4+6+7	8+12+14		
Dibutyl phthalate(DBP)	ND	ND	ND	30	1000
Benzylbutyl phthalate(BBP)	ND	ND	ND	30	1000
Di-2-ethylhexyl phthalate(DEHP)	ND	ND	ND	30	1000
Diisobutyl phthalate(DIBP)	ND	ND	ND	30	1000
<b>Conclusion</b>	Pass	Pass	Pass	---	---

Test Item	Test Result (mg/kg)			MDL (mg/kg)	Requirement Limit (mg/kg)
	15+17+21	23+25+26	29+31+33		
Dibutyl phthalate(DBP)	ND	ND	ND	30	1000
Benzylbutyl phthalate(BBP)	ND	ND	ND	30	1000
Di-2-ethylhexyl phthalate(DEHP)	ND	ND	ND	30	1000
Diisobutyl phthalate(DIBP)	ND	ND	ND	30	1000
<b>Conclusion</b>	Pass	Pass	Pass	---	---

Test Item	Test Result (mg/kg)			MDL (mg/kg)	Requirement Limit (mg/kg)
	36+37+38	41+42+43	46+47+48		
Dibutyl phthalate(DBP)	ND	ND	ND	30	1000
Benzylbutyl phthalate(BBP)	ND	ND	ND	30	1000
Di-2-ethylhexyl phthalate(DEHP)	ND	ND	ND	30	1000
Diisobutyl phthalate(DIBP)	ND	ND	ND	30	1000
<b>Conclusion</b>	Pass	Pass	Pass	---	---

Test Item	Test Result (mg/kg)			MDL (mg/kg)	Requirement Limit (mg/kg)
	49+50+51	52+53+54	55+57+58		
Dibutyl phthalate(DBP)	ND	ND	ND	30	1000
Benzylbutyl phthalate(BBP)	ND	ND	ND	30	1000
Di-2-ethylhexyl phthalate(DEHP)	ND	ND	ND	30	1000
Diisobutyl phthalate(DIBP)	ND	ND	ND	30	1000
<b>Conclusion</b>	Pass	Pass	Pass	---	---

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## Test Results:

### 2. Phthalates (DBP, BBP, DEHP, DIBP) Test Results:

Test Item	Test Result (mg/kg)			MDL (mg/kg)	Requirement Limit (mg/kg)
	59+60+61	62+63+64	65+66+67		
Dibutyl phthalate(DBP)	ND	ND	ND	30	1000
Benzylbutyl phthalate(BBP)	ND	ND	ND	30	1000
Di-2-ethylhexyl phthalate(DEHP)	ND	ND	ND	30	1000
Diisobutyl phthalate(DIBP)	ND	ND	ND	30	1000
<b>Conclusion</b>	Pass	Pass	Pass	---	---

Test Item	Test Result (mg/kg)		MDL (mg/kg)	Requirement Limit (mg/kg)
	71+72	73+76		
Dibutyl phthalate(DBP)	ND	ND	30	1000
Benzylbutyl phthalate(BBP)	ND	ND	30	1000
Di-2-ethylhexyl phthalate(DEHP)	ND	ND	30	1000
Diisobutyl phthalate(DIBP)	ND	ND	30	1000
<b>Conclusion</b>	Pass	Pass	---	---

Note: mg/kg = parts per million = ppm    ND = Not Detected (less than MDL)    MDL = Method Detection Limit

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Test Materials List:

Item No.	Description
1	Black hard plastic with white printing
2	Black hard plastic
3	Red hard plastic
4	White hard plastic
6	Red soft plastic
7	Black hard plastic with multicolor printing
8	Black hard plastic with white printing
12	Black hard plastic
14	Blue soft plastic
15	Yellow soft plastic
17	Black soft plastic
21	Black hard plastic
23	Green PCB
25	SMD IC
26	Shell-black hard plastic
29	Magnet-black solid
31	Coil-copper enameled wire
33	Green PCB
36	Black solid
37	Blue solid
38	LED-transparent hard plastic
41	Black tube
42	Electric wire-red soft plastic
43	Electric wire-black soft plastic
46	SMD capacitor
47	SMD IC
48	SMD inductor
49	SMD resister
50	SMD diode

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Item No.	Description
51	SMD resister
52	SMD triode
53	Green solid
54	White PCB
55	SMD LED
57	Transparent hard plastic
58	Transparent plastic film
59	Transparent glass
60	Silver plastic film with glue
61	White plastic film
62	Dark grey/black soft plastic
63	Silver plastic film
64	Black transparent plastic film
65	White plastic film
66	Transparent hard plastic
67	White soft plastic
71	Black soft plastic
72	Black soft plastic
73	Black hard plastic
76	Black soft plastic

Note: As specified by the client, the samples were subjected to mixed testing.

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- Remark: (1) ① Results are obtained by XRF for primary screening, and further wet chemical testing by ICP-OES / AAS (for Cd, Pb, Hg), UV-VIS (for Cr(VI)) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if an inconclusive result was found (as "X" in below table) (unit: mg/kg).
- ② OL = Over Limit, BL = Below Limit, X = Inconclusive, NA= Not Applicable.
- ③ XRF screening test for RoHS elements – The test result may be different from the actual content in the non-uniformity composition sample.

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	NA	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

(2) ① mg/kg = ppm = 0.0001%, ND = Not Detected (less than MDL), MDL = Method Detection Limit.

② Unit, Method Detection Limit (MDL) and Requirement limit in wet chemical test.

Test items	Pb	Cd	Hg	Cr <sup>6+</sup> (Non-metal)	Cr <sup>6+</sup> (metal)	PBBs(single)	PBDEs(single)
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MDL	2	2	2	8	---	5	5
Requirement Limit	1000	100	1000	1000	Negative	1000	1000

③ According to IEC 62321-7-1:2015, result on Cr<sup>6+</sup> for metal sample shall be shown as Positive/Negative.

- a) The Cr(VI) concentration is more than 0.13 µg/cm<sup>2</sup>, the sample is positive for Cr(VI), the coating is considered to contain Cr(VI).
- b) The Cr(VI) concentration is less than 0.10 µg/cm<sup>2</sup>, the sample is negative for Cr(VI), the coating is considered a non-Cr(VI) based coating.

Storage condition and production date of the tested sample are unavailable and thus results of Cr<sup>6+</sup> represent status of the sample at the time of testing.

④ According to IEC 62321-3-1:2013, this column represents the results of wet chem test. And "NA" means no need to perform wet chem test, when the XRF screening results are acceptable.

(3) As declared by the client, No.10,19,22,70,74 the materials should be exempted for lead content requirement according to Annex III clause 6(c).



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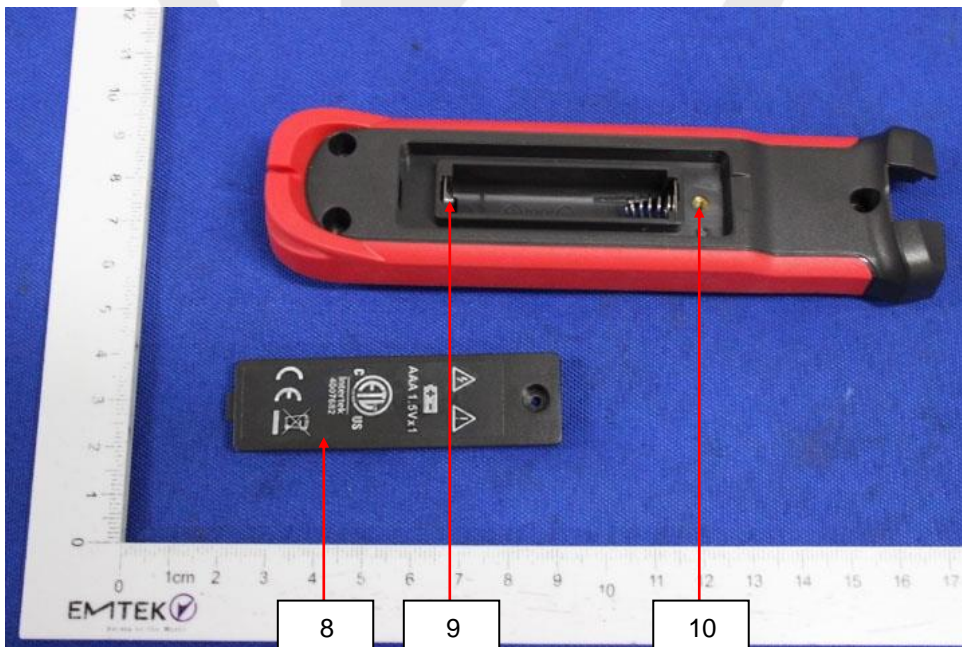
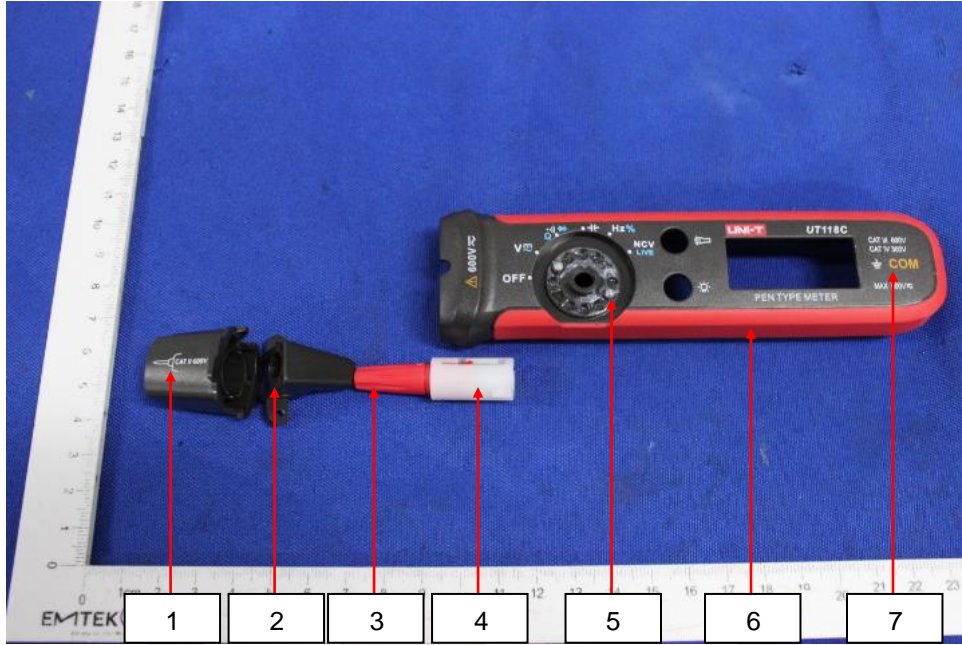
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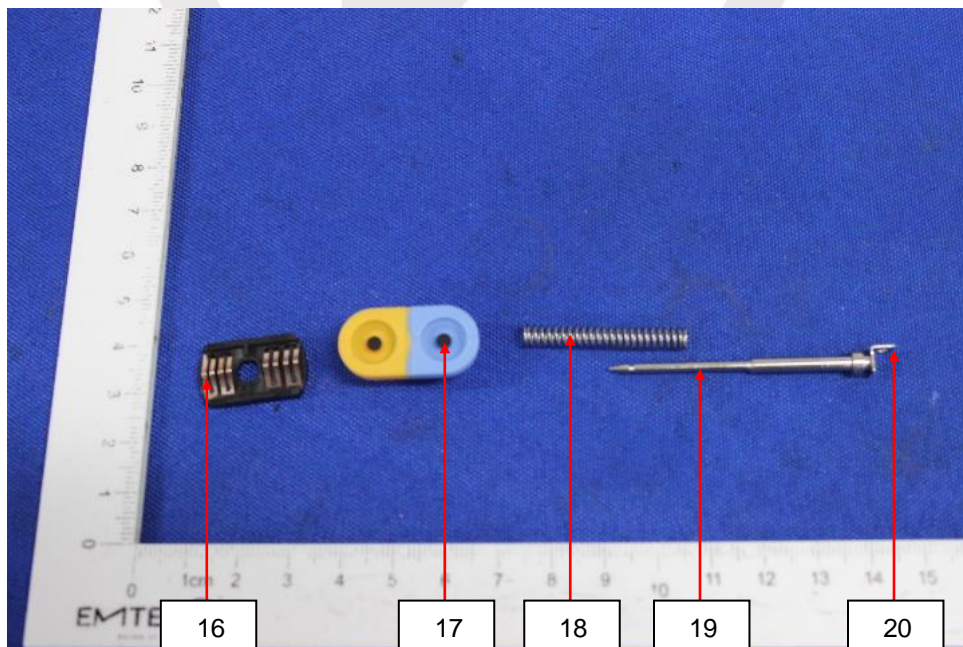
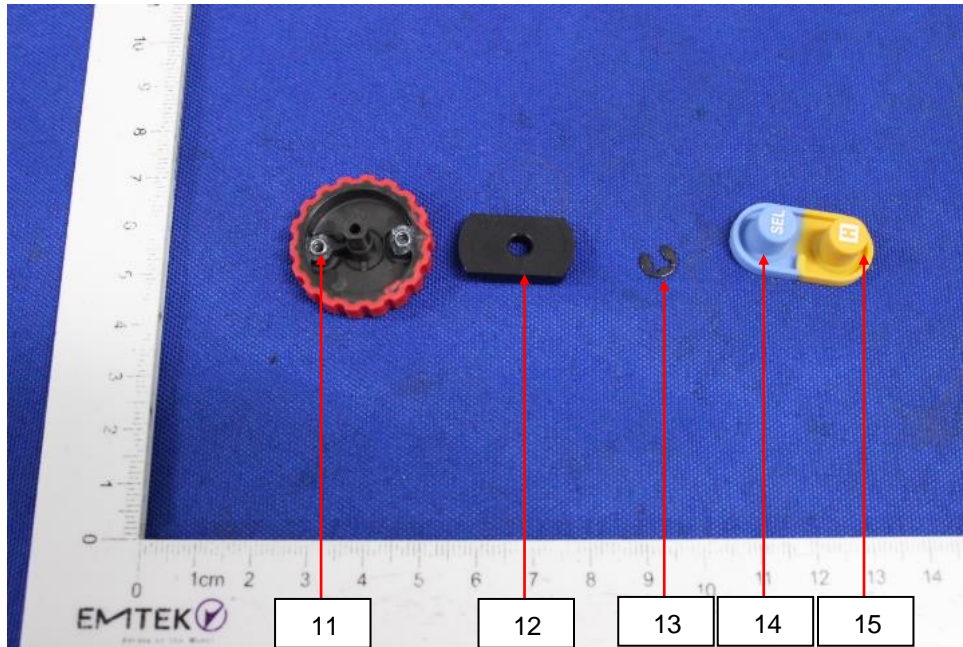
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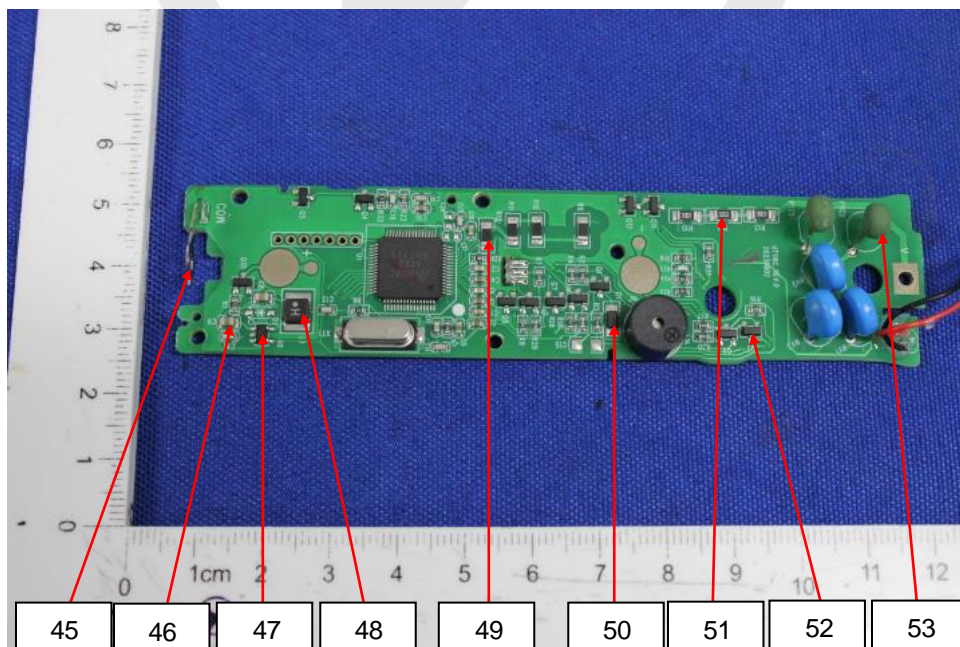
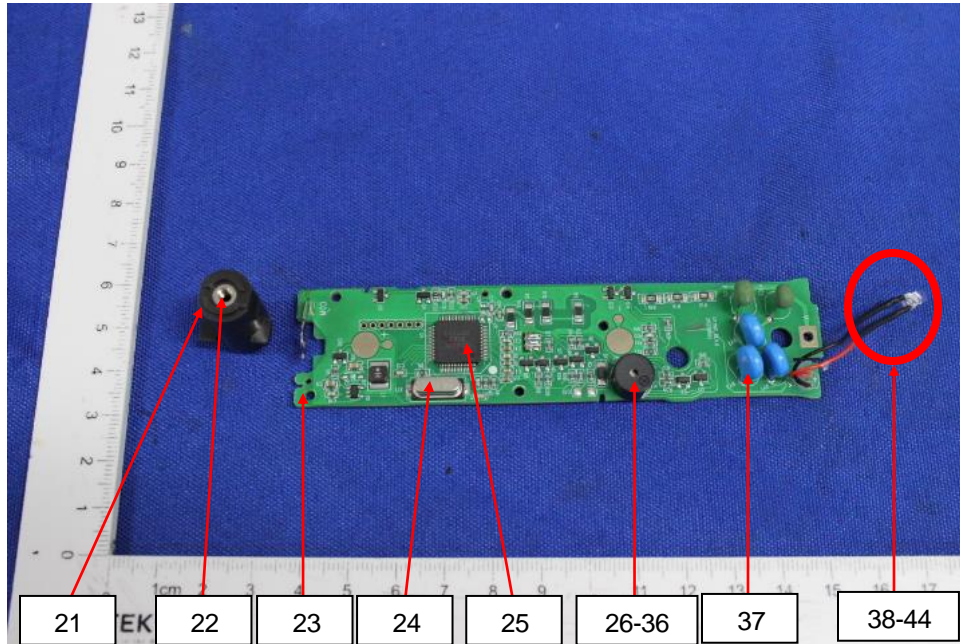
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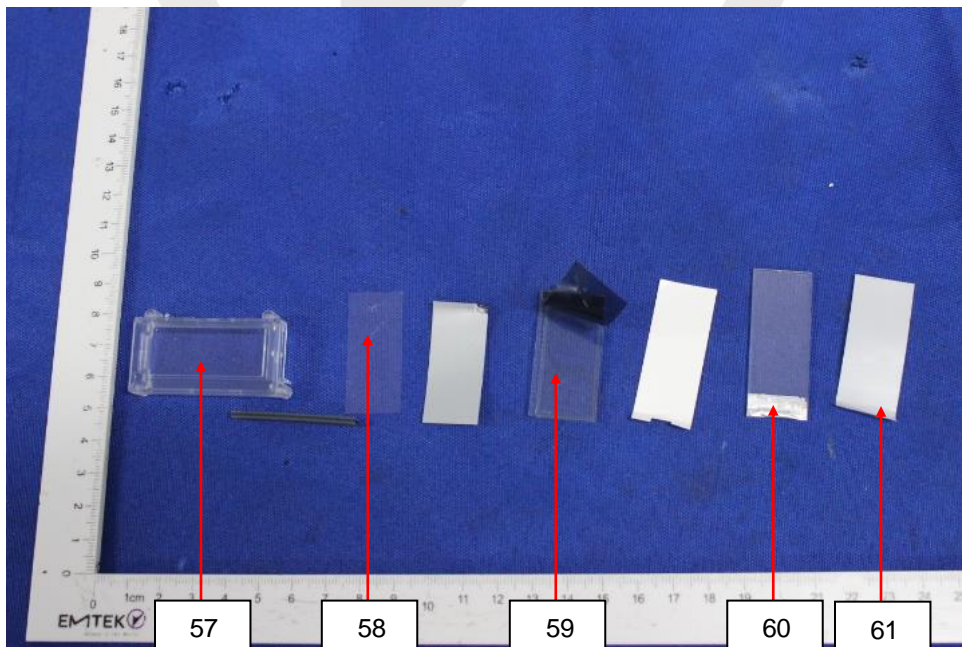
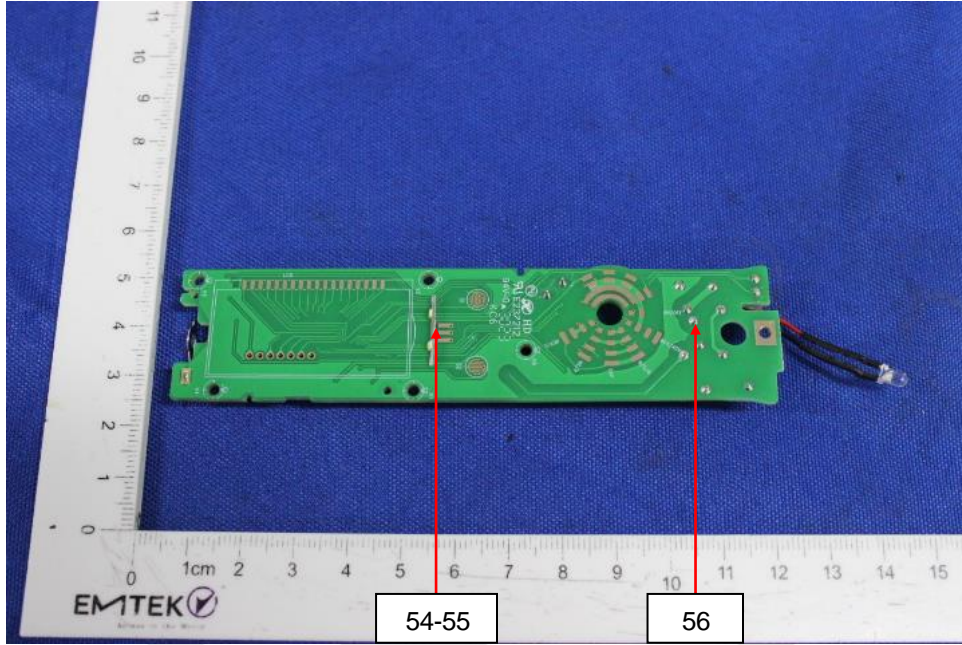
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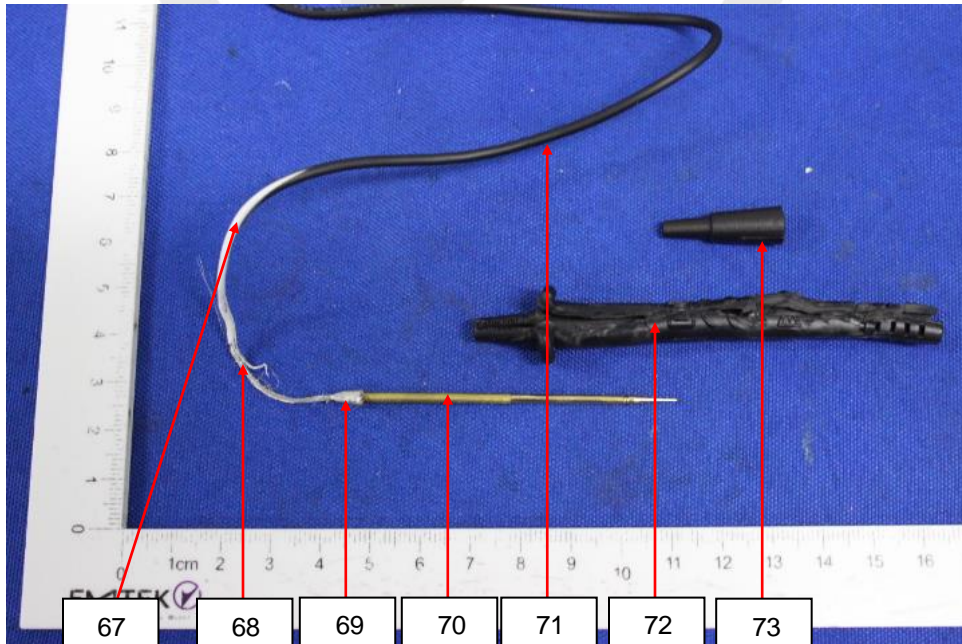
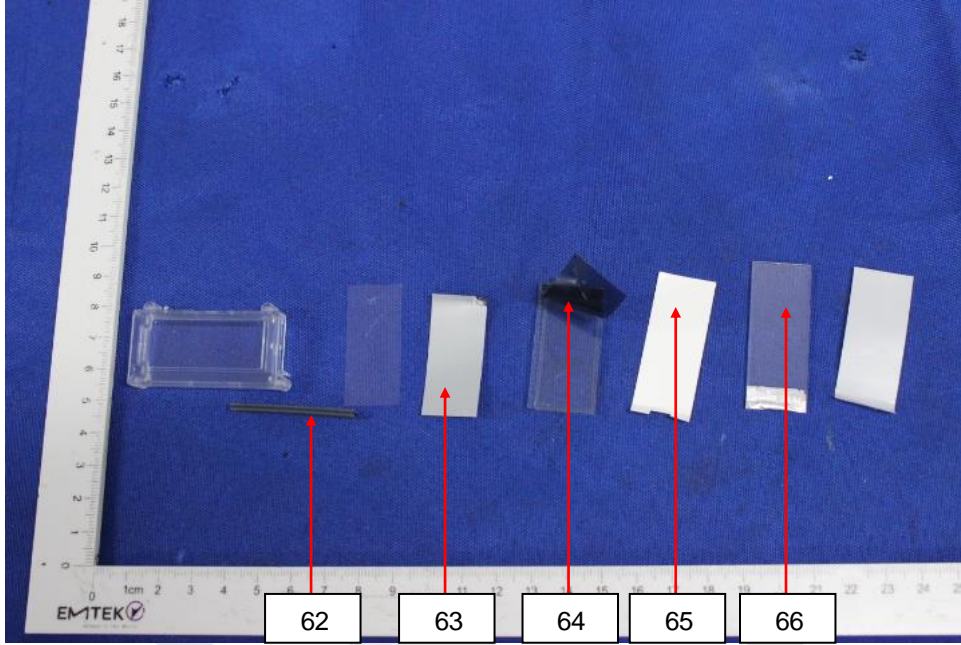
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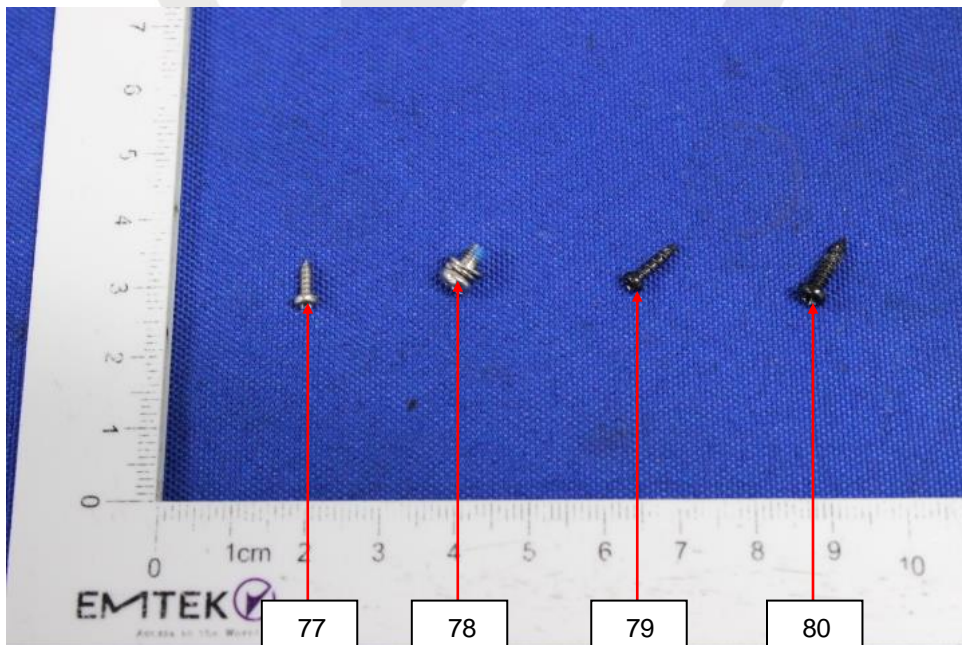
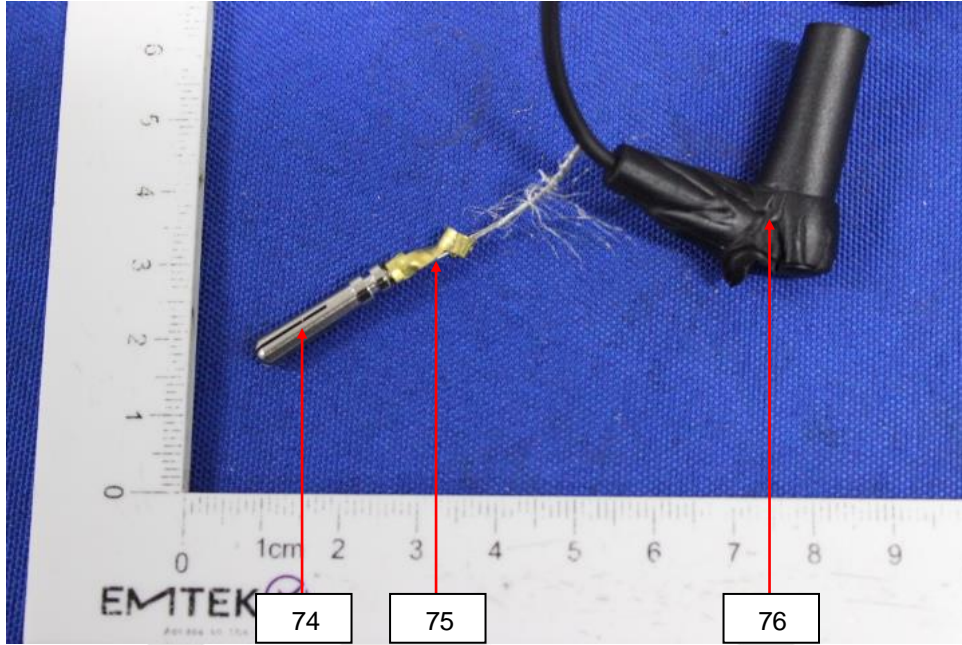
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## Sample Photo



\*\*\* End of Report \*\*\*

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## ANNEX

### EXEMPTION LIST

- 1 Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):
  - 1(a) For general lighting purposes < 30W: 5mg (expires on 31 December 2011; 3.5mg may be used per burner after 31 December 2011 until 31 December 2012; 2.5mg shall be used per burner after 31 December 2012)
  - 1(b) For general lighting purposes  $\geq$  30W and <50W: 5mg (expires on 31 December 2011; 3.5mg may be used per burner after 31 December 2011)
  - 1(c) For general lighting purposes  $\geq$  50W and <150W: 5mg
  - 1(d) For general lighting purposes  $\geq$  150W: 15mg
  - 1(e) For general lighting purposes with circular or square structural shape and tube diameter  $\leq$ 17mm (no limitation of use until 31 December 2011; 7mg may be used per burner after 31 December 2011)
  - 1(f) For special purposes: 5mg
  - 1(g) For general lighting purposes < 30 W with a lifetime equal or above 20 000 h: 3,5 mg (Expires on 31 December 2017)
- 2(a) Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):
  - 2(a)(1) Tri-band phosphor with normal lifetime and a tube diameter < 9mm (e.g. T2): 5mg (expires on 31 December 2011; 4mg may be used per lamp after 31 December 2011)
  - 2(a)(2) Tri-band phosphor with normal lifetime and a tube diameter  $\geq$  9mm and  $\leq$  17mm (e.g. T5): 5mg (expires on 31 December 2011; 3mg may be used per lamp after 31 December 2011)
  - 2(a)(3) Tri-band phosphor with normal lifetime and a tube diameter > 17mm and  $\leq$  28mm (e.g. T8): 5mg (expires on 31 December 2011; 3.5mg may be used per lamp after 31 December 2011)
  - 2(a)(4) Tri-band phosphor with normal lifetime and a tube diameter > 28mm (e.g. T12): 5mg (expires on 31 December 2012; 3.5mg may be used per lamp after 31 December 2012)
  - 2(a)(5) Tri-band phosphor with long lifetime ( $\geq$  25000h): 8mg (expires on 31 December 2011; 5mg may be used per lamp after 31 December 2011)
- 2(b) Mercury in other fluorescent lamps not exceeding (per lamp):
  - 2(b)(2) Non-linear halophosphate lamps (all diameters): 15mg (expires on 13 April 2016)
  - 2(b)(3) Non-linear tri-band phosphor lamps with tube diameter > 17mm (e.g. T9) (no limitation of use until 31 December 2011; 15mg may be used per lamp after 31 December 2011)
  - 2(b)(4) Lamps for other general lighting and special purposes (e.g. induction lamps) (no limitation of use until 31 December 2011; 15mg may be used per lamp after 31 December 2011)
- 3 Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):
  - 3(a) Short length ( $\leq$ 500mm) (No limitation of use until 31 December 2011; 3.5mg may be used per lamp after 31 December 2011)
  - 3(b) Medium length (> 500mm and  $\leq$  1500mm) (No limitation of use until 31 December 2011; 5mg may be used per lamp after 31 December 2011)
  - 3(c) Long length (> 1500mm) (No limitation of use until 31 December 2011; 13mg may be used per lamp after 31 December 2011)
- 4(a) Mercury in other low pressure discharge lamps (per lamp) (no limitation of use until 31 December 2011; 15mg may be used per lamp after 31 December 2011)
- 4(b) Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index  $R_a > 60$ :
  - 4(b)-I  $P \leq 155W$  (no limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011)
  - 4(b)-II  $155W < P \leq 405W$  (no limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011)
  - 4(b)-III  $P > 405W$  (no limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011)
- 4(c) Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):
  - 4(c)-I  $P \leq 155W$  (no limitation of use until 31 December 2011; 25mg may be used per burner after 31 December 2011)
  - 4(c)-II  $155W < P \leq 405W$  (no limitation of use until 31 December 2011; 30mg may be used per burner after 31 December 2011)
  - 4(c)-III  $P > 405W$  (no limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011)
- 4(d) Mercury in High Pressure Mercury (vapour) lamps (HPMV) (expires on 13 April 2015)
- 4(e) Mercury in metal halide lamps (MH)
- 4(f) Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex
- 4(g) Mercury in hand crafted luminous discharge tubes used for signs, decorative or architectural and specialist lighting and light-art work, where the mercury content shall be limited as follows: (Expires on 31 December 2018)
  - (a) 20 mg per electrode pair + 0,3 mg per tube length in cm, but not more than 80 mg, for outdoor applications and indoor applications exposed to temperatures below 20 °C;
  - (b) 15 mg per electrode pair + 0,24 mg per tube length in cm, but not more than 80 mg, for all other indoor applications.

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## ANNEX

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- 5(a) Lead in glass of cathode ray tubes
- 5(b) Lead in glass of fluorescent tubes not exceeding 0.2% by weight
- 6(a) Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight
- 6(b) Lead as an alloying element in aluminium containing up to 0.4% lead by weight
- 6(c) Copper alloy containing up to 4% lead by weight.
- 7(a) Lead in high melting temperature type solders (i.e. lead based alloys containing 85% by weight or more lead)
- 7(b) Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications
- 7(c)-I Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound
- 7(c)-II Lead in dielectric ceramic in capacitors for a rated voltage of 125V AC or 250V DC or higher
- 7(c)-III Lead in dielectric ceramic in capacitors for a rated voltage of less than 125V AC or 250V DC (expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013).
- 7(c)-IV Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors
- 8(a) Cadmium and its compounds in one shot pellet type thermal cut-offs (expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2012)
- 8(b) Cadmium and its compounds in electrical contacts  
Applies to categories 8, 9 and 11 and expires on:  
— 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;  
— 21 July 2023 for category 8 in vitro diagnostic medical devices;  
— 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11
- 8(b)-I Cadmium and its compounds in electrical contacts used in:  
Applies to categories 1 to 7 and 10 and expires on 21 July 2021.  
— circuit breakers,  
— thermal sensing controls,  
— thermal motor protectors (excluding hermetic thermal motor protectors),  
— AC switches rated at:— 6 A and more at 250 V AC and more, or  
— 12 A and more at 125 V AC and more,  
— DC switches rated at 20 A and more at 18 V DC and more, and  
— switches for use at voltage supply frequency  $\geq$  200 Hz.
- 9 Hexavalent chromium as an anti-corrosion agent of the carbon steel cooling system in absorption refrigerators up to 0.75% by weight in the cooling solution
- 9(b) Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications
- 11(b) Lead used in other than C-press compliant pin connector systems (expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013)
- 13(a) Lead in white glasses used for optical applications
- 13(b) Cadmium and lead in filter glasses and glasses used for reflectance standards
- 14 Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight (expires on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011)
- 15 Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages
- 17 Lead halide as radiant agent in High Intensity Discharge (HID) lamps used for professional reprography applications
- 18(b) Lead as activator in the fluorescent powder (1% lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP ( $BaSi_2O_5:Pb$ )
- 21 Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glass
- 24 Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors
- 25 Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring
- 29 Lead bound in crystal glass as defined in Annex 1 (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC
- 30 Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more

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- 31 Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)
- 32 Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes
- 33 Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers
- 34 Lead in cermet-based trimmer potentiometer elements
- 37 Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body
- 38 Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide
- 39 Cadmium in colour converting II-VI LEDs ( $< 10 \mu\text{g Cd per mm}^2$  of light-emitting area) for use in solid state illumination or display systems (expires on 1 July 2014)
- 41 Lead in solders and termination finishes of electrical and electronic components and finishes of printed circuit boards used in ignition modules and other electrical and electronic engine control systems, which for technical reasons must be mounted directly on or in the crankcase or cylinder of hand-held combustion engines (classes SH:1, SH:2, SH:3 of Directive 97/68/EC of the European Parliament and of the Council (2)) (Expires on 31 December 2018)
- 43 Bis(2-ethylhexyl) phthalate in rubber components in engine systems, designed for use in equipment that is not intended solely for consumer use and provided that no plasticised material comes into contact with human mucous membranes or into prolonged contact with human skin and concentration value of bis(2-ethylhexyl) phthalate does not exceed:
- a) 30% by weight of the rubber for
    - (i) gasket coatings;
    - (ii) solid-rubber gaskets; or
    - (iii) rubber components included in assemblies of at least three components using electrical, mechanical or hydraulic energy to do work, and attached to the engine.
  - b) 10% by weight of the rubber for rubber-containing components not referred to in point (a).
- For the purposes of this entry, "prolonged contact with human skin" means continuous contact of more than 10 minutes duration or intermittent contact over a period of 30 minutes, per day.
- 44 Lead in solder of sensors, actuators, and engine control units of combustion engines within the scope of Regulation (EU) 2016/1628 of the European Parliament and of the Council, installed in equipment used at fixed positions while in operation which is designed for professionals, but also used by non-professional users.

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