



中国认可
国际互认
检测
TESTING
CNAS L6478



TEST REPORT

Report No...... : WTF23F03055586C
Applicant..... : Mid Ocean Brands B.V.
Address..... : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Manufacturer..... : 106613
Sample Name..... : Selfie ring light with clip
Sample Model..... : MO6242
Date of Receipt sample..... : 2023-03-20 & 2023-03-26
Testing period..... : 2023-03-20 to 2023-03-25 & 2023-03-26 to 2023-03-28
Date of Issue..... : 2023-03-29
Test Result..... : Refer to next page (s)

Prepared By:

Waltek Testing Group (Foshan) Co., Ltd.

Address: No.13-19, 2/F., 2nd Building, Sunlink International Machinery City,
Chencun, Shunde District, Foshan, Guangdong, China

Tel:+86-757-23811398 Fax:+86-757-23811381 E-mail:info@waltek.com.cn

Signed for and on behalf of
Waltek Testing Group (Foshan) Co., Ltd.

Swing Liang

Swing.Liang



Report No.: WTF23F03055586C

Test Requested : In accordance with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863.

Test Method : 1) With reference to IEC 62321-2:2021, disassembly, disjunction and mechanical sample preparation
2) With reference to IEC 62321-3-1:2013, screening - Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry
3) With reference to IEC 62321-4:2013+AMD1:2017 CSV, determination of Mercury by ICP-OES
4) With reference to IEC 62321-5:2013, determination of Lead and Cadmium by ICP-OES
5) With reference to IEC 62321-7-2: 2017 and IEC 62321-7-1: 2015, determination of Hexavalent Chromium by UV-Vis
6) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS
7) With reference to IEC 62321-8:2017, determination of Phthalates content by GC-MS.

Test Conclusion : **Pass** (Based on the performed tests on the submitted samples, the results comply with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863)

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Report No.: WTF23F03055586C

Sample Photo(s):



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**Test Results:****1. Lead, Mercury, Cadmium, Hexavalent Chromium, PBBs and PBDEs**

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
1	Black plastic shell	BL	BL	BL	BL	BL	NA
2	Black plastic sheet	BL	BL	BL	BL	BL	NA
3	Black plastic sheet	BL	BL	BL	BL	BL	NA
4	Silvery metal spring	BL	BL	BL	BL	--	NA
5	White plastic axle	BL	BL	BL	BL	BL	NA
6	Semi-transparent plastic adhesive sheet	BL	BL	BL	BL	BL	NA
7	Semi-transparent plastic ring	BL	BL	BL	BL	BL	NA
8	Chip LED	BL	BL	BL	BL	BL	NA
9	White-brown PCB	BL	BL	BL	BL	BL	NA
10	Solder	BL	BL	BL	BL	--	NA
11	Coppery metal key(switch)	BL	BL	BL	BL	--	NA
12	Silvery metal shell(switch)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
13	Black plastic base(switch)	BL	BL	BL	BL	BL	NA
14	Yellow plastic adhesive tape(switch)	BL	BL	BL	BL	BL	NA
15	Silvery metal shell(socket)	BL	BL	BL	BL	--	NA
16	Silvery metal pin(socket)	BL	BL	BL	BL	--	NA
17	Black plastic core(socket)	BL	BL	BL	BL	BL	NA
18	Chip audion	BL	BL	BL	BL	BL	NA
19	Chip IC	BL	BL	BL	BL	BL	NA



Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
20	Chip IC	BL	BL	BL	BL	BL	NA
21	Red plastic wire covering	BL	BL	BL	BL	BL	NA
22	Black plastic wire covering	BL	BL	BL	BL	BL	NA
23	Silvery metal wire	BL	BL	BL	BL	--	NA
24	Chip resistor	BL	BL	BL	BL	BL	NA
25	Chip LED	BL	BL	BL	BL	BL	NA
26	Chip resistor	BL	BL	BL	BL	BL	NA
27	Solder	BL	BL	BL	BL	--	NA
28	White brown PCB	BL	BL	BL	BL	BL	NA
29	Chip capacitor	BL	BL	BL	BL	BL	NA
30	Silvery metal shell(plug)	BL	BL	BL	BL	--	NA
31	White plastic jacket(plug)	BL	BL	BL	BL	BL	NA
32	White plastic core(plug)	BL	BL	BL	BL	BL	NA
33	Solder(plug)	BL	BL	BL	BL	--	NA
34	Silvery metal pin(plug)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
35	White plastic jacket(plug)	BL	BL	BL	BL	BL	NA
36	Black plastic core(plug)	BL	BL	BL	BL	BL	NA
37	Silvery metal shell(plug)	BL	BL	BL	BL	--	NA
38	Silvery metal pin(plug)	BL	BL	BL	BL	--	NA
39	White plastic wire covering	BL	BL	BL	BL	BL	NA



Report No.: WTF23F03055586C

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
40	White plastic wire jacket	BL	BL	BL	BL	BL	NA
41	Light yellow plastic wire covering	BL	BL	BL	BL	BL	NA
42	Coppery metal wire	BL	BL	BL	BL	--	NA
43	Silvery metal screw	BL	BL	BL	BL	--	NA
44	Black plastic piece	BL	BL	BL	BL	BL	NA

Remark:

- (1) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for Cr⁶⁺) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1: 2013 (unit: mg/kg)

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

BL= Below Limit OL= Over Limit LOD = Limit of Detection -- = Not Regulated

- (2) "IN" expresses the inconclusive region, and further chemical testing to confirm whether it complies with the requirement of RoHS Directive.
- (3) The XRF screening test for RoHS elements – the reading may be different to the actual content in the sample be of non-uniformity composition.
- (4) mg / kg =milligram per kilogram=ppm, $\mu\text{g}/\text{cm}^2$ = Micrograms per square centimetre.
- (5) NA = Not Applicable, as the XRF screening test result was below the limit or as the XRF screening directly determine that test result was over the limit, it was not need to conduct the wet chemical testing.
- (6) LOQ = Limit of quantitation.

Test Items	Pb	Cd	Hg	Cr ⁶⁺		PBB	PBDE
Units	mg/kg	mg/kg	mg/kg	mg/kg	$\mu\text{g}/\text{cm}^2$	mg/kg	mg/kg
LOQ	2	2	2	8	0.1	5	5

The LOQ for single compound of PBBs and PBDEs is 5mg/kg, LOQ of Cr⁶⁺ for polymer and composite sample is 8mg/kg and LOQ of Cr⁶⁺ for metal sample is 0.1 $\mu\text{g}/\text{cm}^2$.



(7) RoHS Requirement

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

- (8) According to IEC 62321-7-1:2015, determined of Cr⁶⁺ on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.

Boiling water extraction:

Negative = Absence of Cr⁶⁺ coating, the detected concentration in boiling water extraction solution is less than 0.10ug/cm².

Positive = Presence of Cr⁶⁺ coating, the detected concentration in boiling water extraction solution is greater than 0.13ug/cm².

Information on storage conditions and production date of the tested sample is unavailable and thus Cr⁶⁺ results represent status of the sample at the time of testing.

- (9) Abbreviation:

"Pb" denotes Lead, "Cd" denotes Cadmium, "Hg" denotes Mercury, "Cr" denotes Chromium, "Cr (VI)" denotes Hexavalent Chromium, "Br" denotes Bromine, "PBBs" denotes Total Polybrominated Biphenyls, "PBDEs" denotes Total Polybrominated Diphenyl Ethers.

2. Phthalates:

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T01	1+2+3+5+7 [△]	172	ND	ND	ND
T02	4	--	--	--	--
T03	6	ND	ND	ND	ND
T04	8+18+19+20+24 [△]	ND	ND	ND	ND
T05	9+25+26+28+29 [△]	ND	ND	ND	ND
T06	10	--	--	--	--
T07	11	--	--	--	--
T08	12	--	--	--	--
T09	13	ND	ND	ND	ND
T10	14	ND	ND	ND	ND
T11	15	--	--	--	--
T12	16	--	--	--	--
T13	17	ND	ND	ND	ND
T14	21	ND	ND	ND	ND
T15	22	ND	ND	ND	ND
T16	23	--	--	--	--



Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T17	27	--	--	--	--
T18	30	--	--	--	--
T19	31	ND	ND	ND	ND
T20	32+36+44 [△]	93	ND	ND	ND
T21	33	--	--	--	--
T22	34	--	--	--	--
T23	35	ND	ND	ND	ND
T24	37	--	--	--	--
T25	38	--	--	--	--
T26	39	ND	ND	ND	ND
T27	40	ND	ND	ND	ND
T28	41	ND	ND	ND	ND
T29	42	--	--	--	--
T30	43	--	--	--	--

Note:

- (1) mg/kg = milligram per kilogram= ppm
- (2) ND = Not Detected or lower than limit of quantitation.
- (3) -- = Not Regulated.
- (4) LOQ = Limit of quantitation.

Test Items	DBP	BBP	DEHP	DIBP
Units	mg/kg	mg/kg	mg/kg	mg/kg
LOQ	50	50	50	50

- (5) Abbreviation:
 "DBP" denotes Dibutyl phthalate, "BBP" denotes Benzyl butyl phthalate (BBP), "DEHP" denotes Bis(2-ethylhexyl)-phthalate, "DIBP" denotes Diisobutyl phthalate, "PHT" denotes Phthalates.

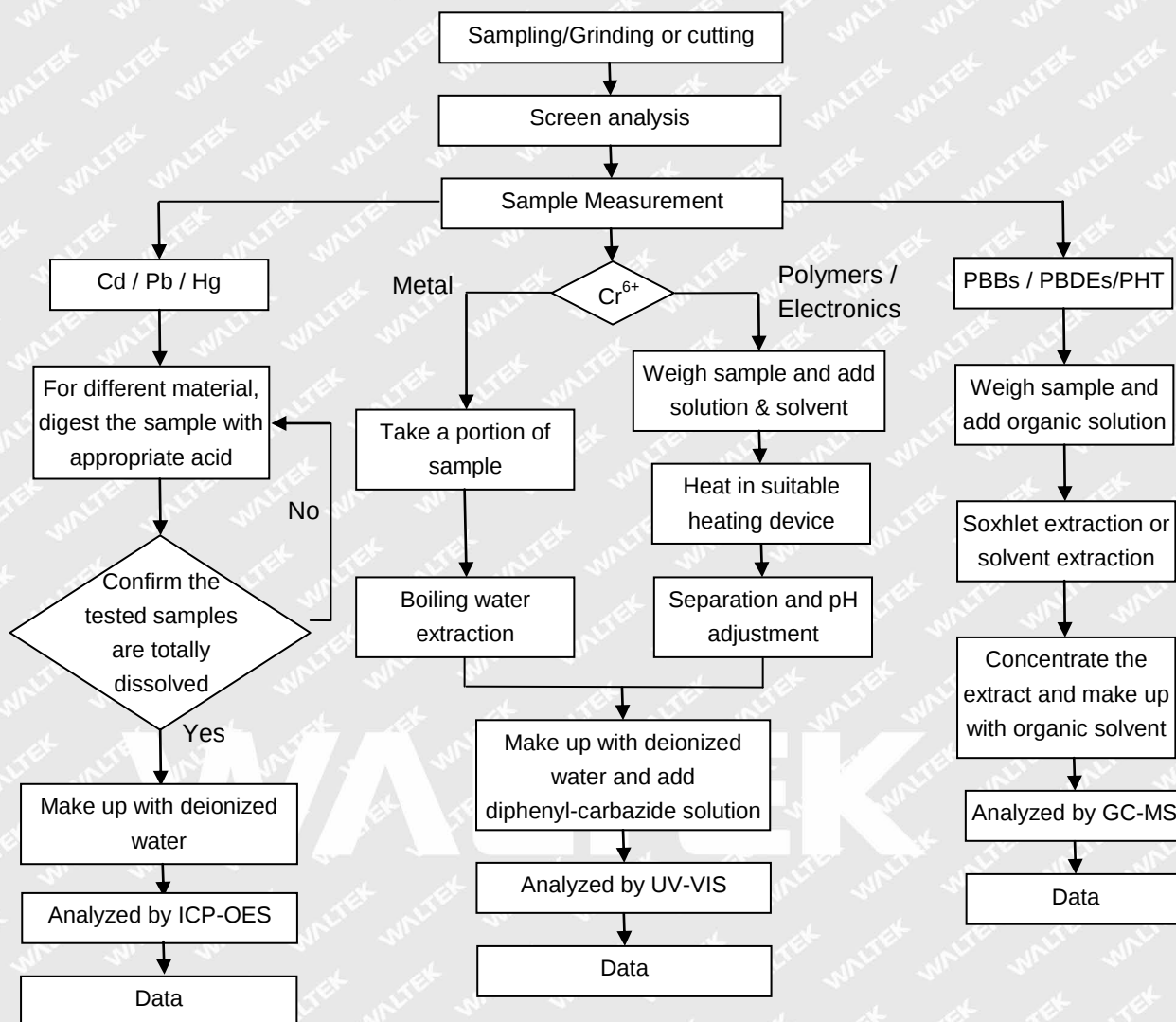
- (6) RoHS requirement

Restricted Substances	Limits
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Di(2-ethylhexyl) phthalate (DEHP)	0.1% (1000 mg/kg)
Di-iso-butyl phthalate (DIBP)	0.1% (1000 mg/kg)

- (7) "△"= As client's requirement, the testing was conducted based on mixed components. Results are calculated by the minimum weight of mixed components.



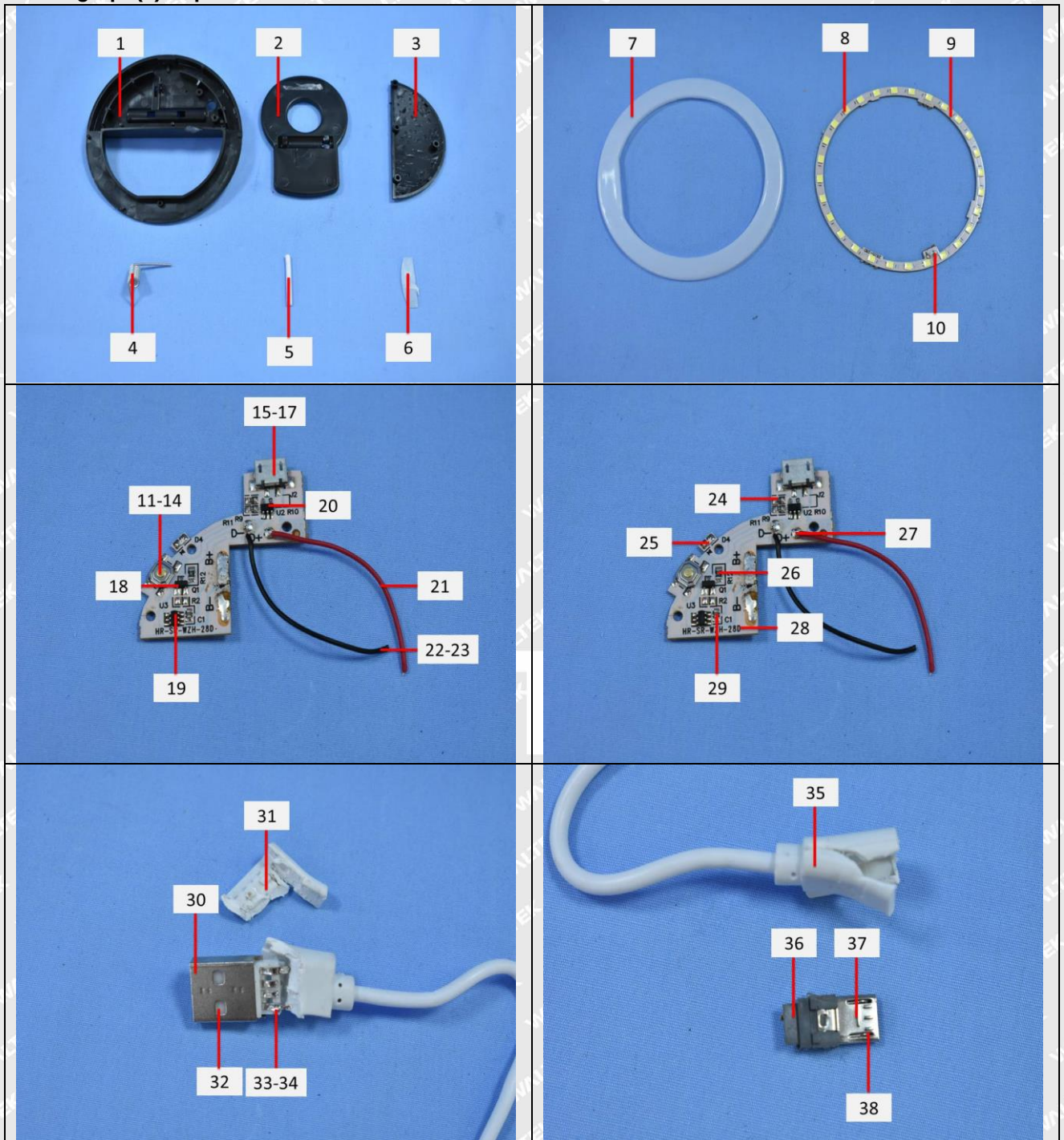
Measurement Flowchart:

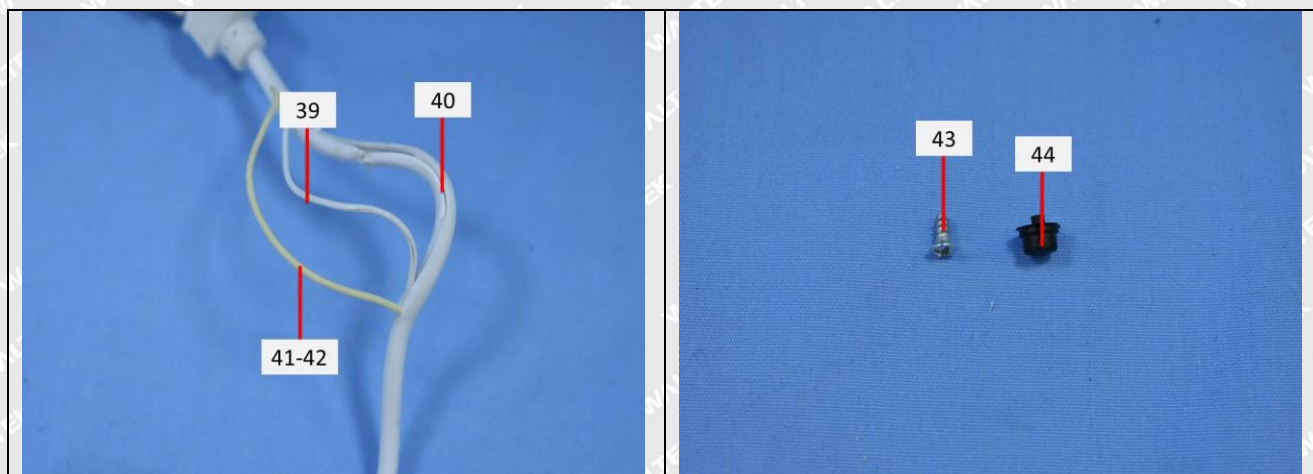




Report No.: WTF23F03055586C

Photograph(s) of parts tested:





Remarks:

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===== End of Report =====