



中国认可
国际互认
检测
TESTING
CNAS L6478



TEST REPORT

Report No...... : WTF22F10200341A1C
Applicant..... : Mid Ocean Brands B.V.
Address..... : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Manufacturer..... : 114889
Sample Name..... : Wireless PD 10000mAh PowerBank
Sample Model..... : MO6844
Date of Receipt sample..... : 2022-10-09 & 2022-11-03
Testing period..... : 2022-10-09 to 2022-11-01 & 2022-11-03 to 2022-11-07
Date of Issue..... : 2022-11-07
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.: WTF22F10200341A1C

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.

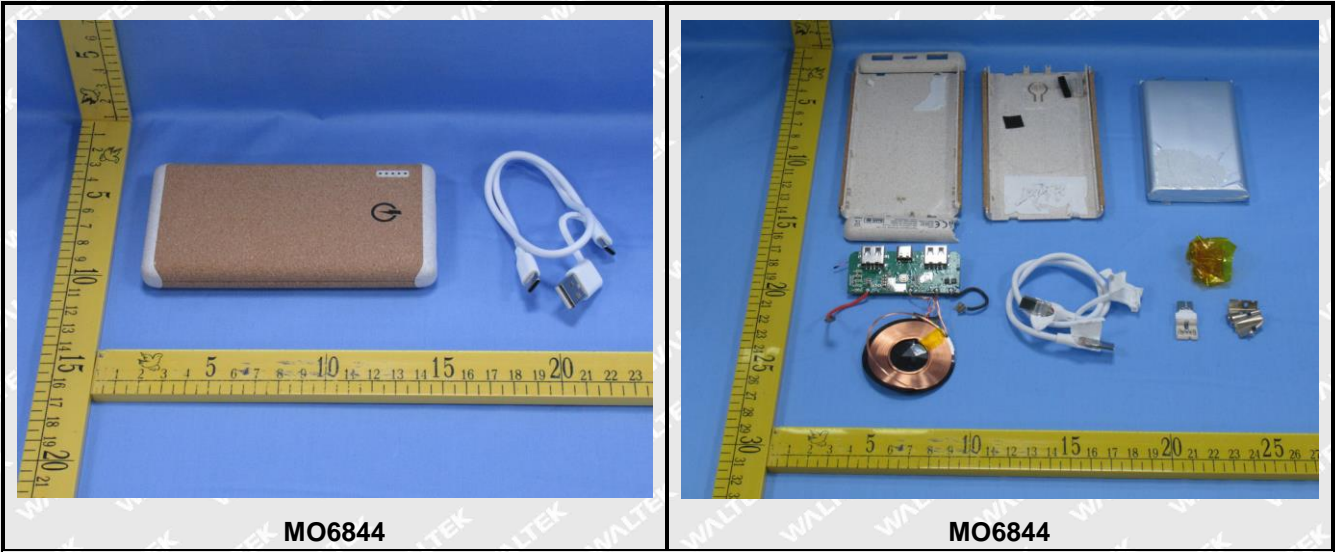
Test Conclusion : **Pass** (Based on the performed tests on the submitted samples, the results comply with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863)

WALTEK



Report No.: WTF22F10200341A1C

Sample Photo(s):



WALTEK



Report No.: WTF22F10200341A1C

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	Transparent plastic piece	BL	BL	BL	BL	BL	NA
2	Brown fibrous fabric with cork dust	BL	BL	BL	BL	BL	NA
3	Transparent double faced adhesive tape	BL	BL	BL	BL	BL	NA
4	White sponge with adhesive	BL	BL	BL	BL	BL	NA
5	Black sponge with adhesive	BL	BL	BL	BL	BL	NA
6	Black sponge with adhesive	BL	BL	BL	BL	BL	NA
7	Beige plastic shell	BL	BL	BL	BL	BL	NA
8	Yellow transparent adhesive tape	BL	BL	BL	IN	BL	Cr ⁶⁺ : ND
9	Beige plastic shell with black printing	BL	BL	BL	BL	BL	NA
10	Black EC	BL	BL	BL	BL	BL	NA
11	Silvery metal shell(USB socket)	BL	BL	BL	BL	--	NA
12	Black plastic core(USB socket)	BL	BL	BL	BL	BL	NA
13	Silvery metal pin(USB socket)	BL	BL	BL	BL	--	NA
14	Silvery metal shell(socket)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
15	Black plastic core(socket)	BL	BL	BL	BL	BL	NA
16	Silvery coppery metal pin(socket)	BL	BL	BL	BL	--	NA
17	Silvery metal sheet	BL	BL	BL	BL	--	NA
18	Solder	BL	BL	BL	BL	--	NA
19	Chip LED	BL	BL	BL	BL	BL	NA



Report No.: WTF22F10200341A1C

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
20	Chip capacitor	BL	BL	BL	BL	BL	NA
21	Silvery metal shell	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
22	Coppery metal button	BL	BL	BL	BL	--	NA
23	Yellow transparent plastic film	BL	BL	BL	BL	BL	NA
24	Silvery metal sheet	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
25	Black plastic base	BL	BL	BL	BL	BL	NA
26	Solder	BL	BL	BL	BL	--	NA
27	Black plastic wire covering	BL	BL	BL	BL	BL	NA
28	Green PCB	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
29	Red capacitor	BL	BL	BL	BL	BL	NA
30	Semi-transparent hot melt glue	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
31	Red varnished wire	BL	BL	BL	BL	BL	NA
32	Chip resistor	BL	IN	BL	IN	BL	Pb : 467 Cr ⁶⁺ : ND
33	Chip IC	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
34	Chip diode	BL	BL	BL	BL	BL	NA
35	Chip inductor	BL	BL	BL	IN	BL	Cr ⁶⁺ : ND
36	Red plastic wire covering	BL	BL	BL	BL	BL	NA
37	Silvery metal wire	BL	BL	BL	BL	--	NA
38	Coppery varnished wire	BL	BL	BL	BL	BL	NA
39	Yellow transparent adhesive tape	BL	BL	BL	BL	BL	NA



Report No.: WTF22F10200341A1C

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
40	Black plastic film	BL	BL	BL	BL	BL	NA
41	Black magnetic sheet	BL	BL	BL	BL	--	NA
42	White plastic jacket(USB plug)	BL	BL	BL	BL	BL	NA
43	Silvery metal shell(USB plug)	BL	BL	BL	BL	--	NA
44	Silvery metal shell(USB plug)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
45	Black plastic core(USB plug)	BL	BL	BL	BL	BL	NA
46	Silvery metal pin(USB plug)	BL	BL	BL	BL	--	NA
47	Beige plastic sheet(USB plug)	BL	BL	BL	BL	BL	NA
48	White plastic shell(USB plug)	BL	BL	BL	BL	BL	NA
49	White plastic jacket(USB plug)	BL	BL	BL	BL	BL	NA
50	Silvery metal shell(USB plug)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
51	Black plastic core (USB plug)	BL	BL	BL	BL	BL	NA
52	Silvery metal pin(USB plug)	BL	BL	BL	BL	--	NA
53	Solder(USB plug)	BL	BL	BL	BL	--	NA
54	Blue PCB(USB plug)	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
55	Chip capacitor (USB plug)	BL	BL	BL	BL	BL	NA
56	Black plastic wire covering	BL	BL	BL	BL	BL	NA
57	Yellow plastic wire covering	BL	BL	BL	BL	BL	NA
58	Green plastic wire covering	BL	BL	BL	BL	BL	NA
59	White plastic wire covering	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	
60	Red plastic wire covering	BL	BL	BL	BL	BL	NA
61	Silvery metal wire	BL	BL	BL	BL	--	NA
62	White plastic wire jacket	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 Cr^{6+}) 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	$\text{BL} \leq (70-3\sigma) < \text{IN} < (130+3\sigma) \leq \text{OL}$	$\text{BL} \leq (70-3\sigma) < \text{IN} < (130+3\sigma) \leq \text{OL}$	$\text{LOD} < \text{IN} < (150+3\sigma) \leq \text{OL}$
Pb	$\text{BL} \leq (700-3\sigma) < \text{IN} < (1300+3\sigma) \leq \text{OL}$	$\text{BL} \leq (700-3\sigma) < \text{IN} < (1300+3\sigma) \leq \text{OL}$	$\text{BL} \leq (500-3\sigma) < \text{IN} < (1500+3\sigma) \leq \text{OL}$
Hg	$\text{BL} \leq (700-3\sigma) < \text{IN} < (1300+3\sigma) \leq \text{OL}$	$\text{BL} \leq (700-3\sigma) < \text{IN} < (1300+3\sigma) \leq \text{OL}$	$\text{BL} \leq (500-3\sigma) < \text{IN} < (1500+3\sigma) \leq \text{OL}$
Cr	$\text{BL} \leq (700-3\sigma) < \text{IN}$	$\text{BL} \leq (700-3\sigma) < \text{IN}$	$\text{BL} \leq (500-3\sigma) < \text{IN}$
Br	$\text{BL} \leq (300-3\sigma) < \text{IN}$	--	$\text{BL} \leq (250-3\sigma) < \text{IN}$

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) ND = Not Detected or lower than limit of quantitation.
- (6) 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.
- (7) 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 Cr^{6+} for polymer and composite sample is 8mg/kg and LOQ of Cr^{6+} for metal sample is 0.1 $\mu\text{g}/\text{cm}^2$.



(8) 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)

- (9) 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.

(10) 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+7+9+12+15 [△]	ND	ND	ND	ND
T02	2	ND	ND	ND	ND
T03	3	ND	ND	ND	ND
T04	4	ND	ND	ND	ND
T05	5	ND	ND	ND	ND
T06	6	ND	ND	ND	ND
T07	8+39 [△]	ND	ND	ND	ND
T08	10+19+20+29+32 [△]	ND	ND	ND	ND
T09	11	--	--	--	--
T10	13	--	--	--	--
T11	14	--	--	--	--
T12	16	--	--	--	--
T13	17	--	--	--	--
T14	18	--	--	--	--
T15	21	--	--	--	--
T16	22	--	--	--	--



Report No.: WTF22F10200341A1C

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T17	23	ND	ND	ND	ND
T18	24	--	--	--	--
T19	25+45+47+48+51 [△]	ND	ND	ND	ND
T20	26	--	--	--	--
T21	27	280	ND	ND	ND
T22	28+31+38+54 [△]	ND	ND	ND	ND
T23	30	ND	ND	ND	ND
T24	33+34+35+55 [△]	ND	ND	ND	ND
T25	36	123	ND	ND	ND
T26	37	--	--	--	--
T27	40	ND	ND	ND	ND
T28	41	--	--	--	--
T29	42	ND	ND	ND	ND
T30	43	--	--	--	--
T31	44	--	--	--	--
T32	46	--	--	--	--
T33	49	ND	ND	ND	ND
T34	50	--	--	--	--
T35	52	--	--	--	--
T36	53	--	--	--	--
T37	56	ND	ND	ND	ND
T38	57	ND	ND	ND	ND
T39	58	ND	ND	ND	ND
T40	59	ND	ND	ND	ND
T41	60	ND	ND	ND	ND
T42	61	--	--	--	--
T43	62	ND	ND	ND	ND

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

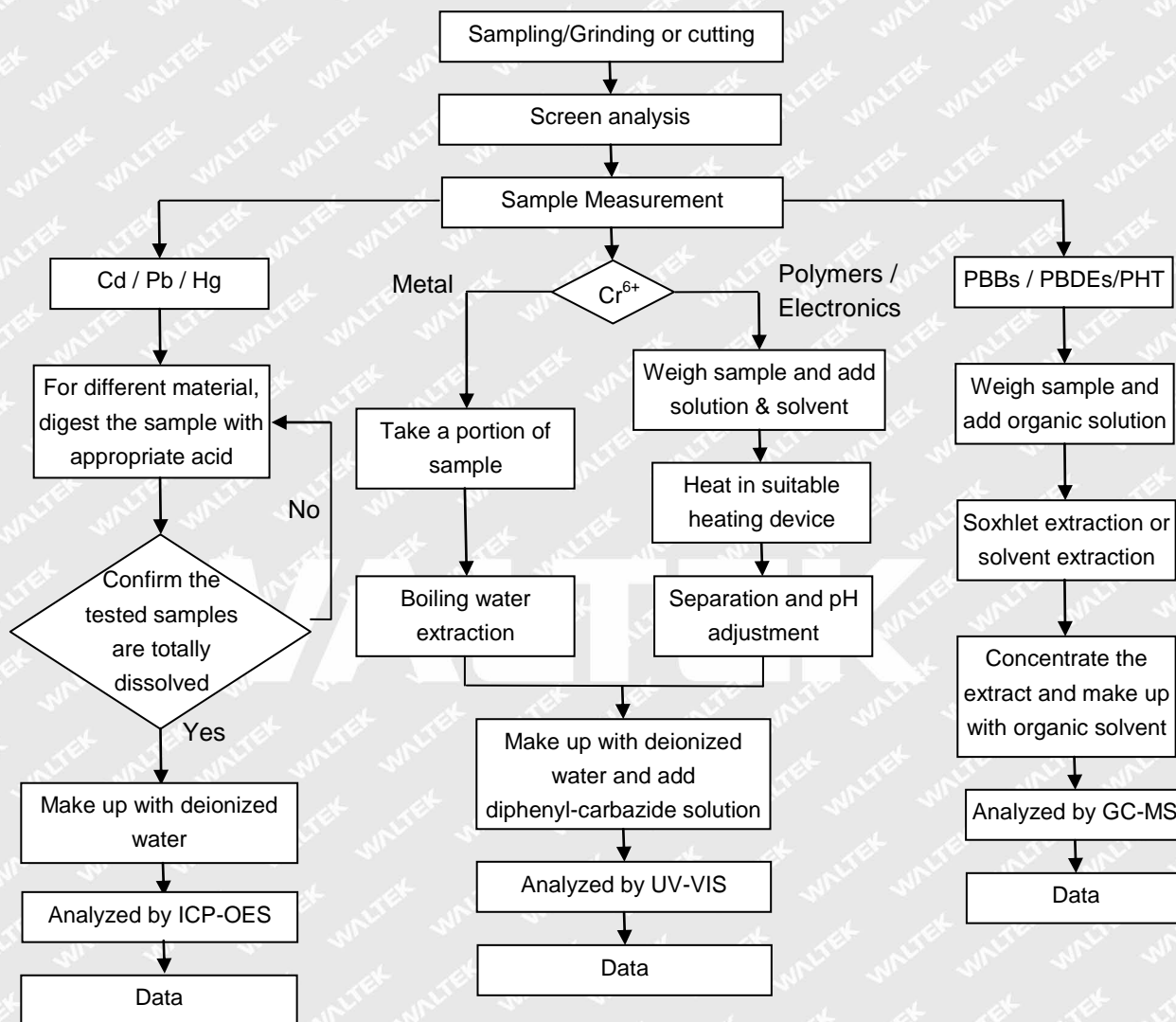
Restricted Substances	Limits
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Di(2-ethylhexyl) phthalate (DEHP)	0.1% (1000 mg/kg)
Di-iso-butyl phthalate (DIBP)	0.1% (1000 mg/kg)



Report No.: WTF22F10200341A1C

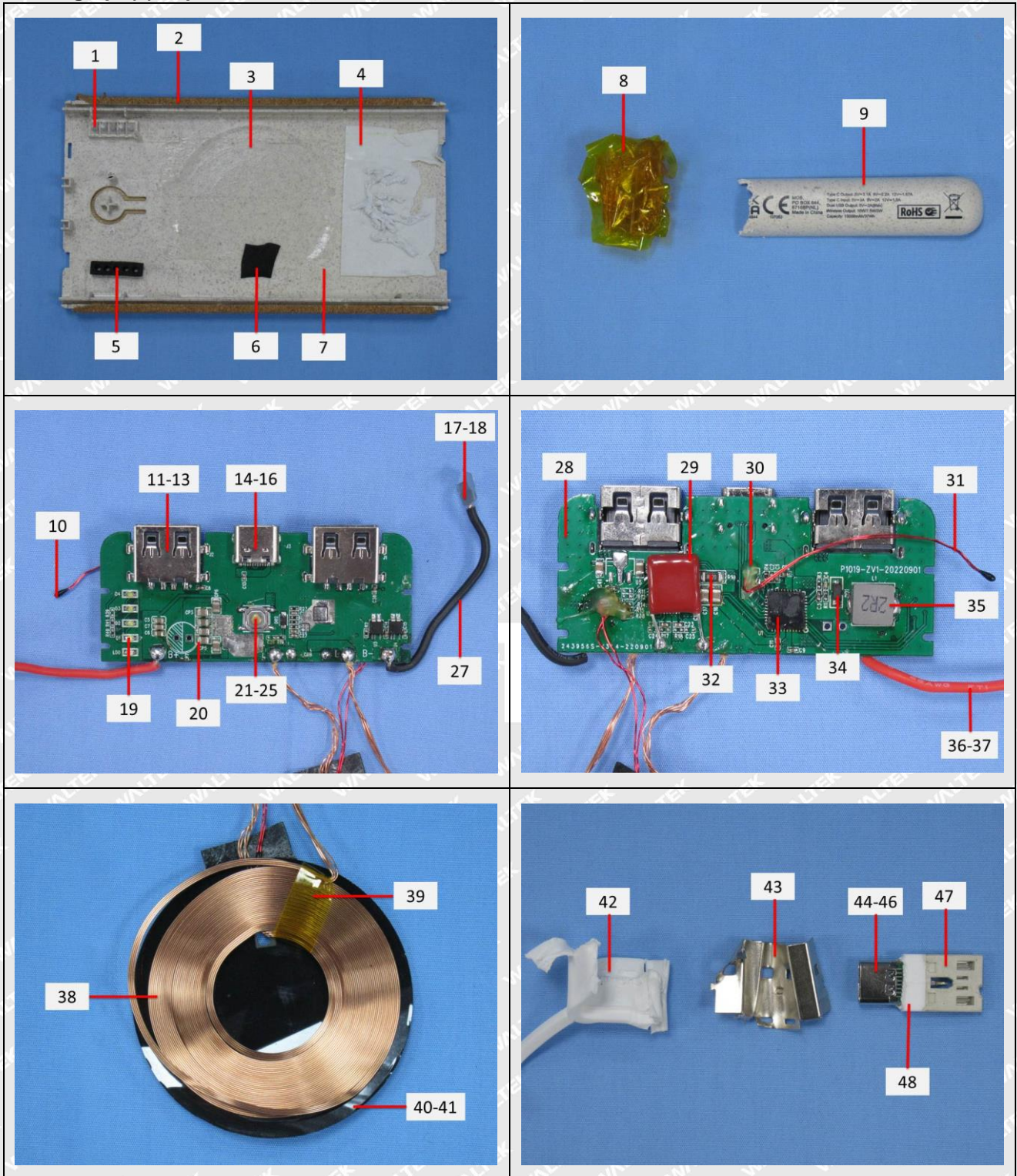
(7) “△”= As client’s requirement, the testing was conducted based on mixed components. Results are calculated by the minimum weight of mixed components.

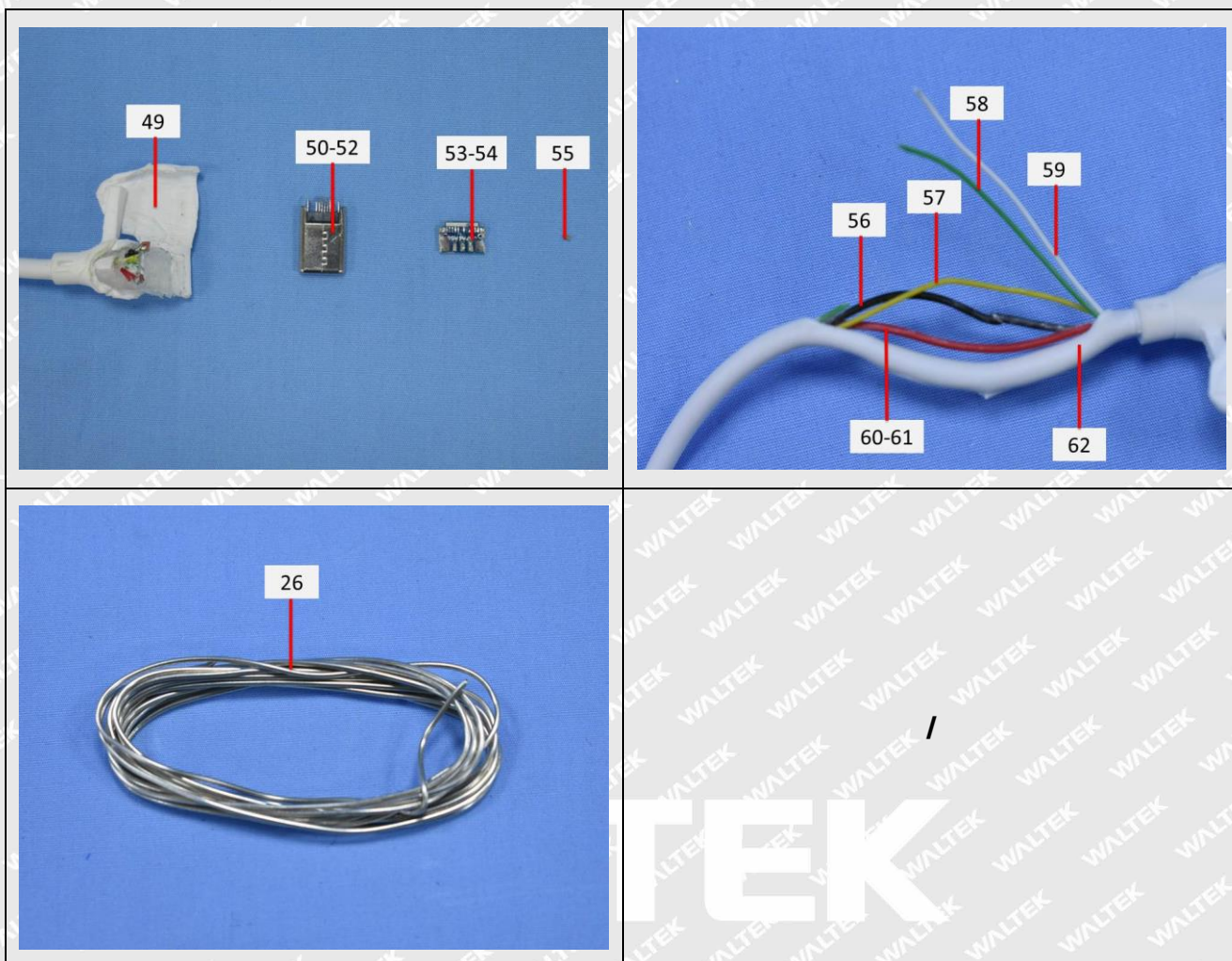
Measurement Flowchart:





Photograph(s) of parts tested:





Remarks:

1. The results shown in this test report refer only to the sample(s) tested;
2. This test report cannot be reproduced, except in full, without prior written permission of the company;
3. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver;
4. The Applicant name and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which Waltek hasn't verified;
5. If the report is not stamped with the accreditation recognized seal, it will only be used for scientific research, education, and internal quality control activities, and is not used for the purpose of issuing supporting data to the society.
6. The sample material information (Model No. information) is provided by client, not verified by test laboratory. The samples of reference Model No. are not tested. Test laboratory not responsible for the accuracy, appropriateness, completeness and authenticity of the information provided by client.

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