



中国认可
国际互认
检测
TESTING
CNAS L6478



TEST REPORT

Report No. : WTF25F06150657A1C
Job No. : FSW2507160863CJ
Applicant : Mid Ocean Brands B.V.
Address : Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Manufacturer : 106613
Sample Name : Rechargeable wireless mouse
Sample Model : MO2222
Test Requested : With reference to EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863, to determine the Pb, Cd, Hg, Cr⁶⁺, PBBs, PBDEs, DBP, BBP, DEHP, DIBP content in the submitted sample.
Test Method : Refer to next page (s)
Test Conclusion : **Pass**
Date of Receipt Sample : 2025-07-16 & 2025-07-31
Testing Period : 2025-07-16 to 2025-07-25 & 2025-07-31 ~ 2025-08-04
Date of Issue : 2025-08-04
Test Result : Refer to next page (s)

Prepared By:

Waltek Testing Group (Foshan) Co., Ltd.

Address: No.13-19, 2/F., 2nd Building, Sunlink Machinery City, Xingye 4 Road, Guanglong Industrial Park, Chihua Neighborhood Committee, 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



WTF25F06150657A1C

Swing.Liang
Waltek Testing Group (Foshan) Co., Ltd.
<http://www.waltek.com.cn>



Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

Sample photo:



MO2222



MO2222



MO2222



MO2222



Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

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

Test Method/Equipment:

- 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

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
1(R1)	Black plastic shell	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
2	Black plastic shell	BL	BL	BL	BL	IN	PBBs : ND PBDEs :302
3	Black soft plastic ring	BL	BL	BL	BL	BL	NA
4	Black plastic part	BL	BL	BL	BL	IN	PBBs : ND PBDEs : 235
5(R1)	Black plastic shell	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
6	Silvery metal shell	BL	BL	BL	BL	--	NA
7	Chip crystal oscillator	BL	OL	BL	BL	BL	*Pb : 3.95×10^4
8	Chip IC	BL	BL	BL	BL	BL	NA
9	Green PCB	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
10	Chip capacitor	BL	BL	BL	BL	BL	NA
11	Chip EC	BL	OL	BL	BL	BL	*Pb : 6.27×10^4
12	Silvery metal screw	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
13	Black plastic wire covering	BL	BL	BL	BL	BL	NA



Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
14	Red plastic wire covering	BL	BL	BL	BL	BL	NA
15	Silvery metal wire	BL	BL	BL	BL	--	NA
16	Black plastic shell(button)	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
17	Silvery metal shell(button)	BL	BL	BL	BL	--	NA
18	Silvery metal sheet(button)	BL	BL	BL	BL	--	NA
19	Black plastic shell(button)	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
20	Silvery metal shell(button)	BL	BL	BL	BL	--	NA
21	Silvery metal sheet(button)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
22	Coppery metal sheet(button)	BL	BL	BL	BL	--	NA
23	Yellow PCB	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
24	White plastic shell	BL	BL	BL	BL	BL	NA
25	Silvery metal pin	BL	BL	BL	BL	--	NA
26	Green plastic film	BL	BL	BL	BL	BL	NA
27	White plastic gasket	BL	BL	BL	BL	BL	NA
28	Silvery metal sheet	BL	BL	BL	BL	--	NA
29	Silvery metal spring	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
30	Solder	BL	BL	BL	BL	--	NA
31	Yellow plastic part(button)	BL	BL	BL	BL	BL	NA



Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
32	Green soft plastic part(button)	BL	BL	BL	BL	BL	NA
33	Black plastic shell	BL	BL	BL	BL	BL	NA
34	Silvery metal pin	BL	BL	BL	BL	--	NA
35	Black plastic part	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
36	Transparent plastic shell	BL	BL	BL	BL	BL	NA
37	Black plastic core(socket)	BL	BL	BL	BL	BL	NA
38	Silvery metal shell(socket)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
39	Silvery metal pin(socket)	BL	BL	BL	BL	--	NA
40	Chip IC	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
41	Solder	BL	IN	BL	IN	--	Cr ⁶⁺ : Negative Pb :117
42	Chip IC	BL	BL	BL	BL	BL	NA
43	Chip EC	BL	BL	BL	BL	BL	NA
44	Chip audio	BL	BL	BL	BL	BL	NA
45	Black plastic shell(button)	BL	BL	BL	BL	BL	NA
46	Silvery metal shell(button)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
47	Silvery metal sheet(button)	BL	BL	BL	BL	--	NA
48	Black plastic wire jacket	BL	BL	BL	BL	BL	NA
49	Black plastic jacket(plug)	BL	BL	BL	BL	BL	NA



Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
50	Silvery metal shell(plug)	BL	BL	BL	BL	--	NA
51	White plastic core(plug)	BL	BL	BL	BL	BL	NA
52	Black PCB(plug)	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
53	Silvery metal shell(plug)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
54	Chip resistor(plug)	BL	OL	BL	BL	BL	*Pb : 1166
55	Silvery metal pin(plug)	BL	BL	BL	BL	--	NA
56	Black plastic core(plug)	BL	BL	BL	BL	BL	NA
57	Black plastic wire covering	BL	BL	BL	BL	BL	NA
58	Red plastic wire covering	BL	BL	BL	BL	BL	NA
59	Copperry metal wire	BL	BL	BL	BL	--	NA
60	Green plastic wire covering	BL	BL	BL	BL	BL	NA
61	Black plastic jacket(Type-C plug)	BL	BL	BL	BL	BL	NA
62	Transparent dry glue(Type-C plug)	BL	BL	BL	BL	BL	NA
63	Silvery metal shell(Type-C plug)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
64	Solder(Type-C plug)	BL	BL	BL	BL	--	NA
65	Black plastic core(Type-C plug)	BL	BL	BL	BL	BL	NA
66	Blue-green PCB(Type-C plug)	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
67	Golden metal pin(Type-C plug)	BL	BL	BL	BL	--	NA



Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
68	Silvery metal pin(Type-C plug)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
69	Chip capacitor(Type-C plug)	BL	BL	BL	BL	BL	NA
70	White plastic shell	BL	BL	BL	BL	BL	NA
71	White plastic shell	BL	BL	BL	BL	BL	NA
72	White soft plastic ring	BL	BL	BL	BL	BL	NA
73	White plastic part	BL	BL	BL	BL	BL	NA
74	White plastic jacket(plug)	BL	BL	BL	BL	BL	NA
75	White plastic jacket(Type-C plug)	BL	BL	BL	BL	BL	NA
76	White plastic wire jacket	BL	BL	BL	BL	BL	NA

2. Phthalates

Test Method/Equipment:

1) With reference to IEC 62321-8:2017, determination of DBP, BBP, DEHP, DIBP by GC-MS

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T01	1(R1)	ND	ND	ND	ND
T02	5(R1)	ND	ND	ND	ND
T03	2+4+16 [△]	ND	ND	397	ND
T04	3+13+14 [△]	ND	ND	ND	ND
T05	7+8+10+11+40 [△]	ND	ND	ND	ND
T06	9+23+52+66 [△]	ND	ND	ND	ND
T07	19+24+27+31+33 [△]	ND	ND	ND	ND
T08	26	ND	ND	ND	ND
T09	32+48+49 [△]	ND	ND	502	ND
T10	35+36+37+45+51 [△]	ND	ND	ND	ND
T11	42+43+44+54+69 [△]	ND	ND	ND	ND
T12	56+65+70+71 [△]	ND	ND	ND	ND
T13	57+58+60 [△]	ND	ND	ND	ND



Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T14	61+72+74 [△]	ND	ND	ND	ND
T15	62	ND	ND	ND	ND
T16	73	ND	ND	ND	ND
T17	75+76 [△]	ND	ND	ND	ND
T18	6	--	--	--	--
T19	12	--	--	--	--
T20	15	--	--	--	--
T21	17	--	--	--	--
T22	18	--	--	--	--
T23	20	--	--	--	--
T24	21	--	--	--	--
T25	22	--	--	--	--
T26	25	--	--	--	--
T27	28	--	--	--	--
T28	29	--	--	--	--
T29	30	--	--	--	--
T30	34	--	--	--	--
T31	38	--	--	--	--
T32	39	--	--	--	--
T33	41	--	--	--	--
T34	46	--	--	--	--
T35	47	--	--	--	--
T36	50	--	--	--	--
T37	53	--	--	--	--
T38	55	--	--	--	--
T39	59	--	--	--	--
T40	63	--	--	--	--
T41	64	--	--	--	--
T42	67	--	--	--	--
T43	68	--	--	--	--



Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

Remark:

- (1) Results are obtained by XRF 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

- (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) -- = Not Regulated
- (8) LOQ = Limit of quantitation.

Test Items	Pb	Cd	Hg	Cr^{6+}		PBB	PBDE	DBP	BBP	DEHP	DIBP
Units	mg/kg	mg/kg	mg/kg	mg/kg	$\mu\text{g}/\text{cm}^2$	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOQ	2	2	2	8	0.1	5	5	50	50	50	50

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 $0.1\mu\text{g}/\text{cm}^2$.

- (9) According to IEC 62321-7-1:2015, determined of Cr^{6+} on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.

Boiling water extraction:

Negative = Absence of Cr^{6+} coating, the detected concentration in boiling water extraction solution is less than $0.10\mu\text{g}/\text{cm}^2$.

Positive = Presence of Cr^{6+} coating, the detected concentration in boiling water extraction solution is greater than $0.13\mu\text{g}/\text{cm}^2$.

Information on storage conditions and production date of the tested sample is unavailable and thus Cr^{6+} results represent status of the sample at the time of testing.



Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

(10)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)
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)

(11) Abbreviation:

“Pb” denotes Lead, “Cd” denotes Cadmium, “Hg” denotes Mercury, “Cr” denotes Chromium, “Cr⁶⁺” denotes Hexavalent Chromium, “Br” denotes Bromine, “PBBs” denotes Total Polybrominated Biphenyls, “PBDEs” denotes Total Polybrominated Diphenyl Ethers.

“DBP” denotes Dibutyl phthalate, “BBP” denotes Benzyl butyl phthalate (BBP), “DEHP” denotes Bis(2-ethylhexyl)-phthalate, “DIBP” denotes Diisobutyl phthalate, “PHT” denotes Phthalates.

(12) “Δ”=As per applicant's requirement, the testing was conducted based on mixed components by weight in equal ratio, results are calculated by the minimum weight of mixed components.

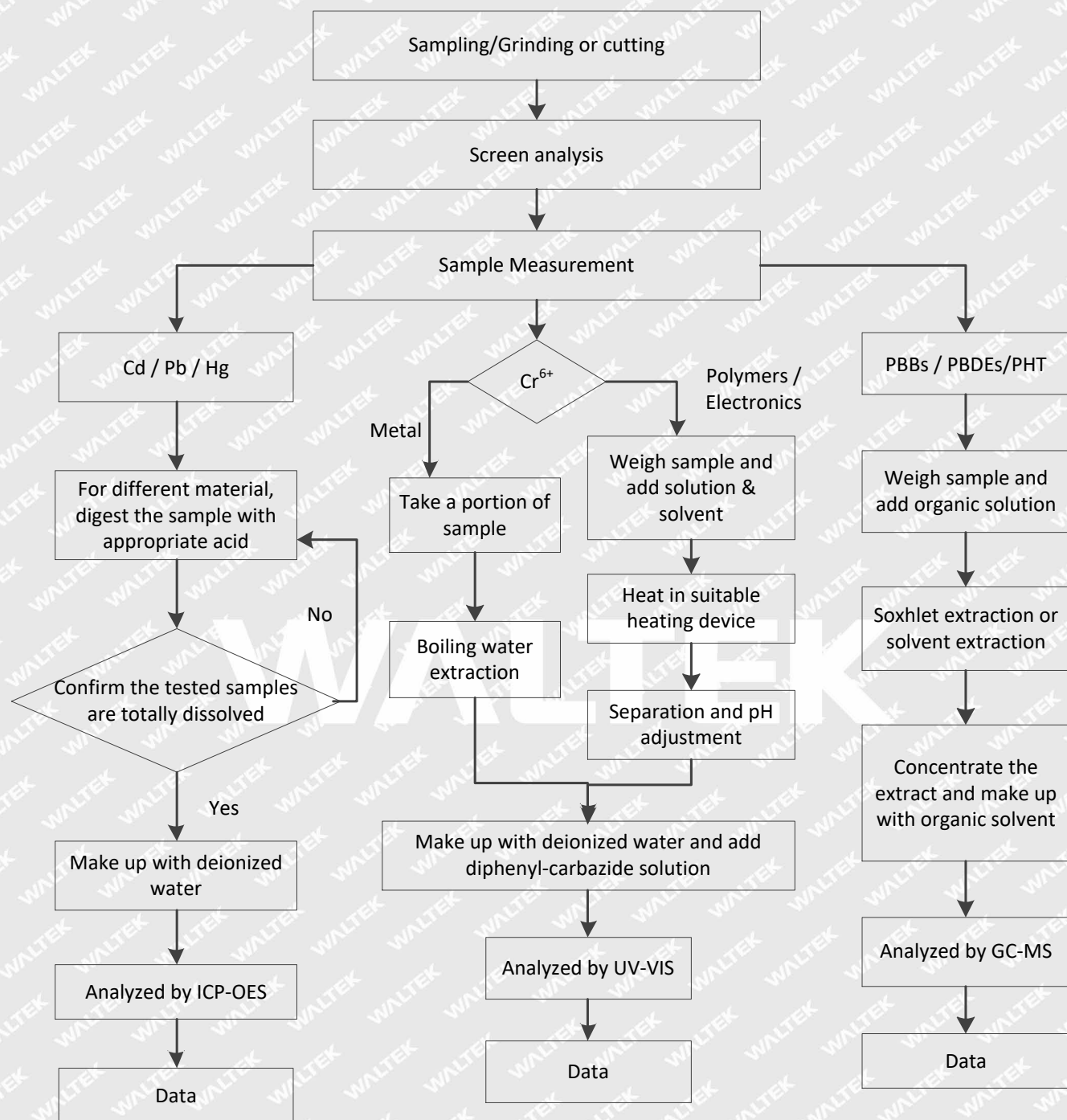
(13)* = According to the declaration from client, the source of lead in test sample is from the glass or ceramic material of that electronic component which is exempted by Directive 2011/65/EU ANNEX III-7(c)-I.



Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

Testing Flow chart:

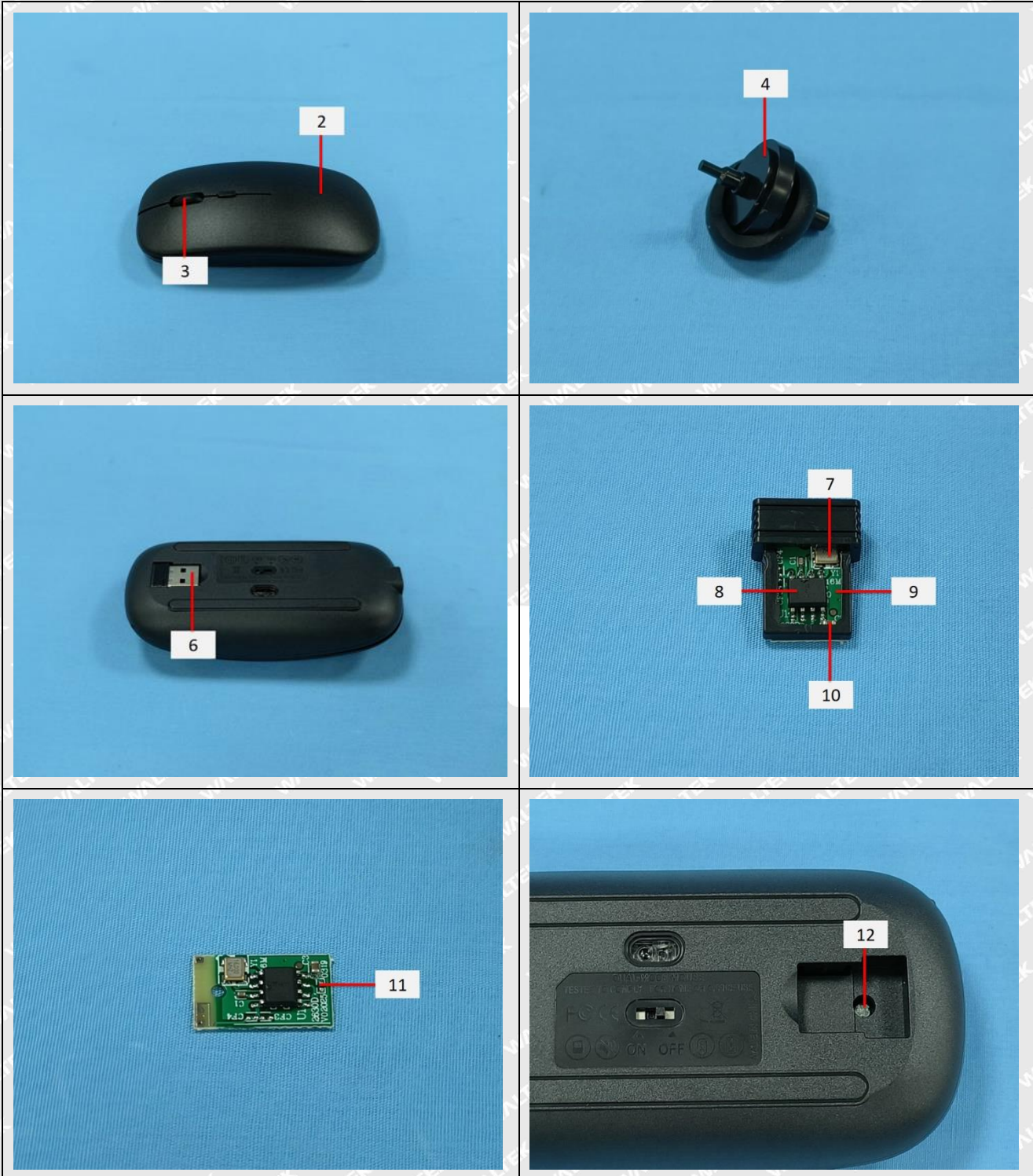




Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

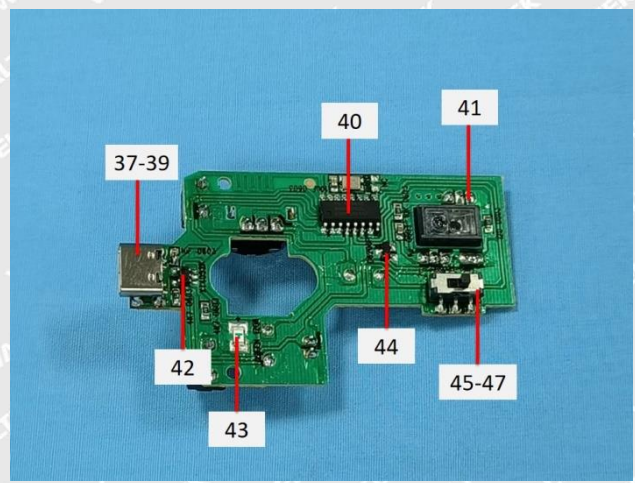
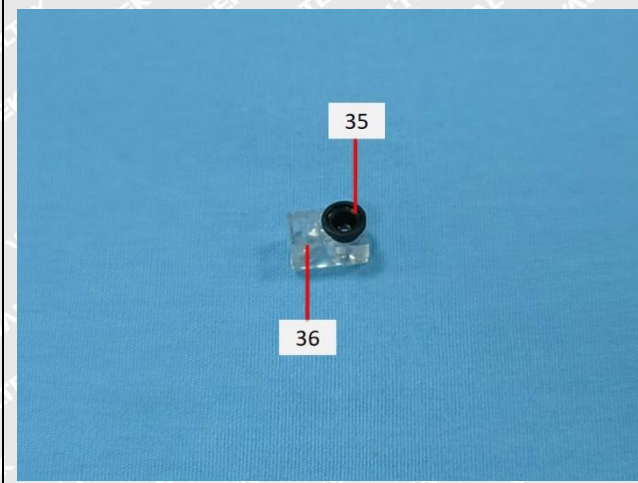
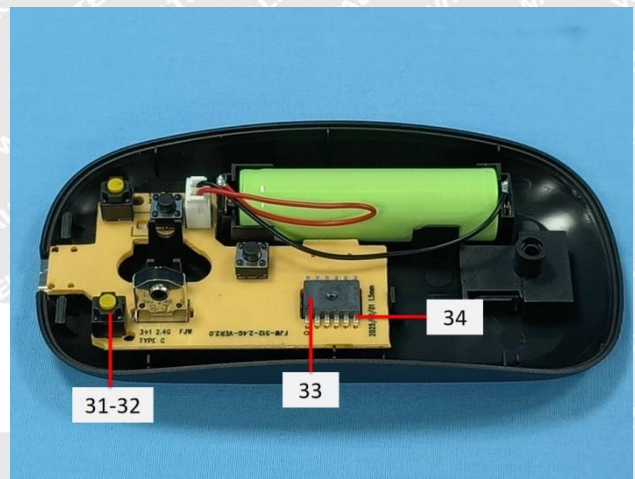
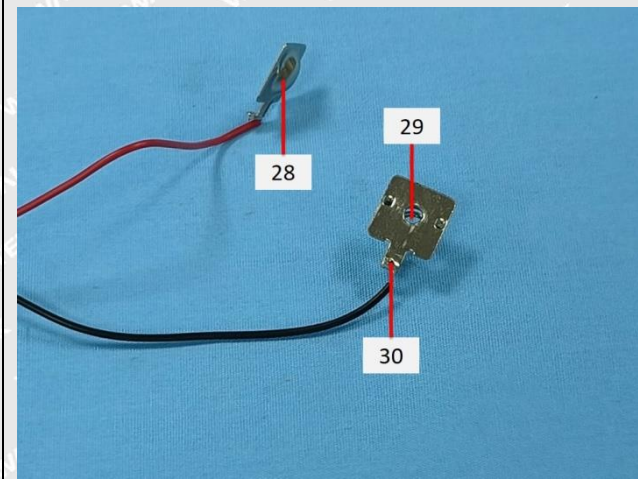
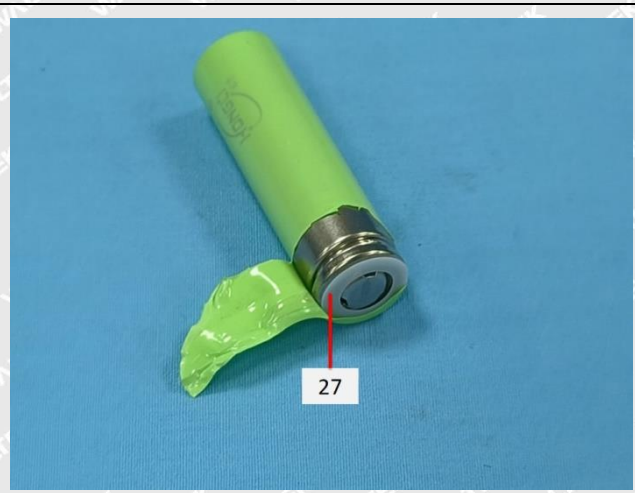
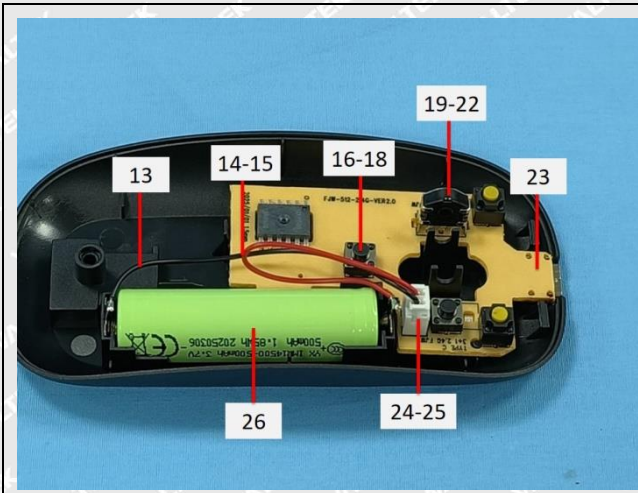
Photograph of parts tested:





Report No.: WTF25F06150657A1C

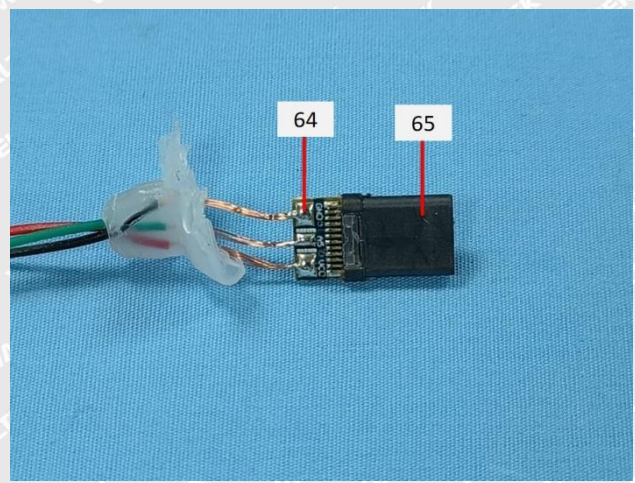
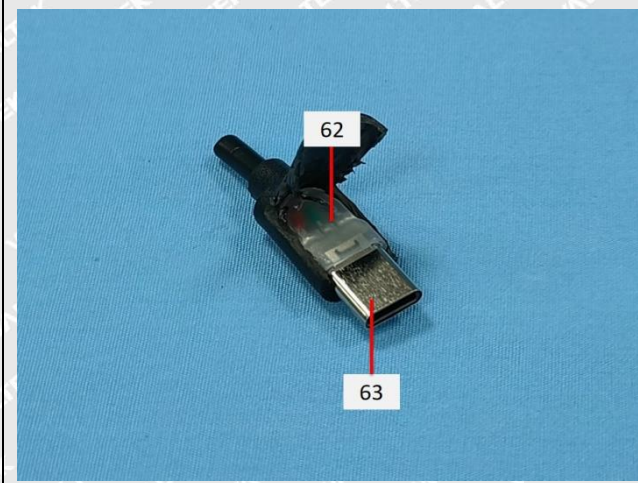
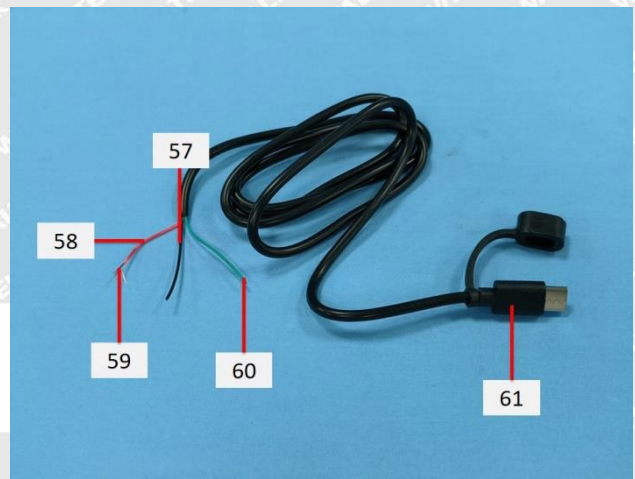
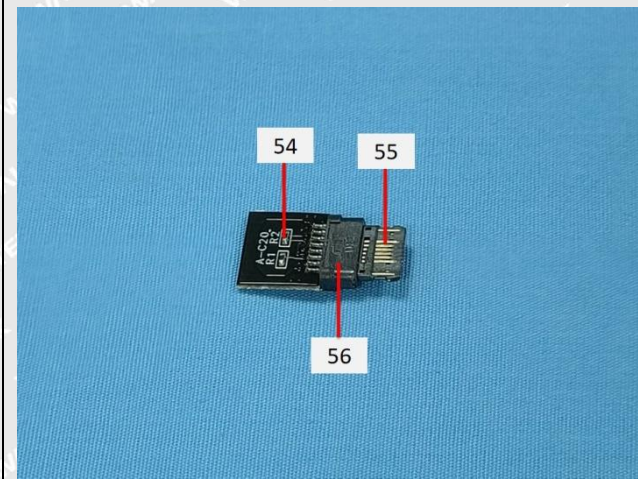
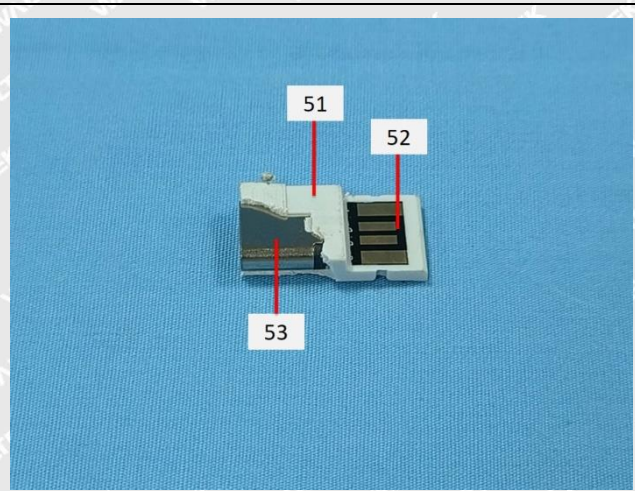
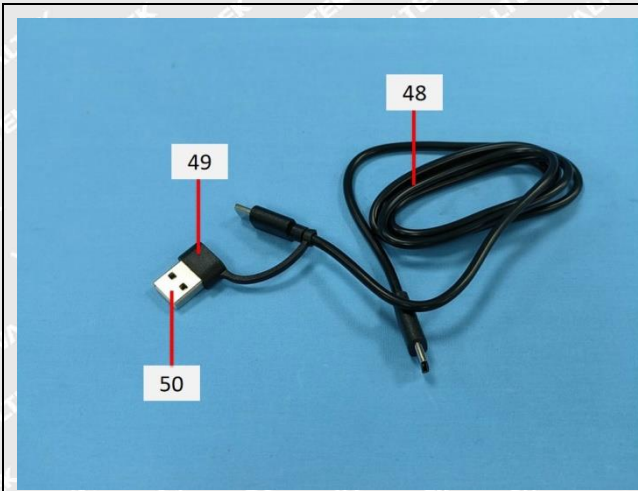
Job No.: FSW2507160863CJ





Report No.: WTF25F06150657A1C

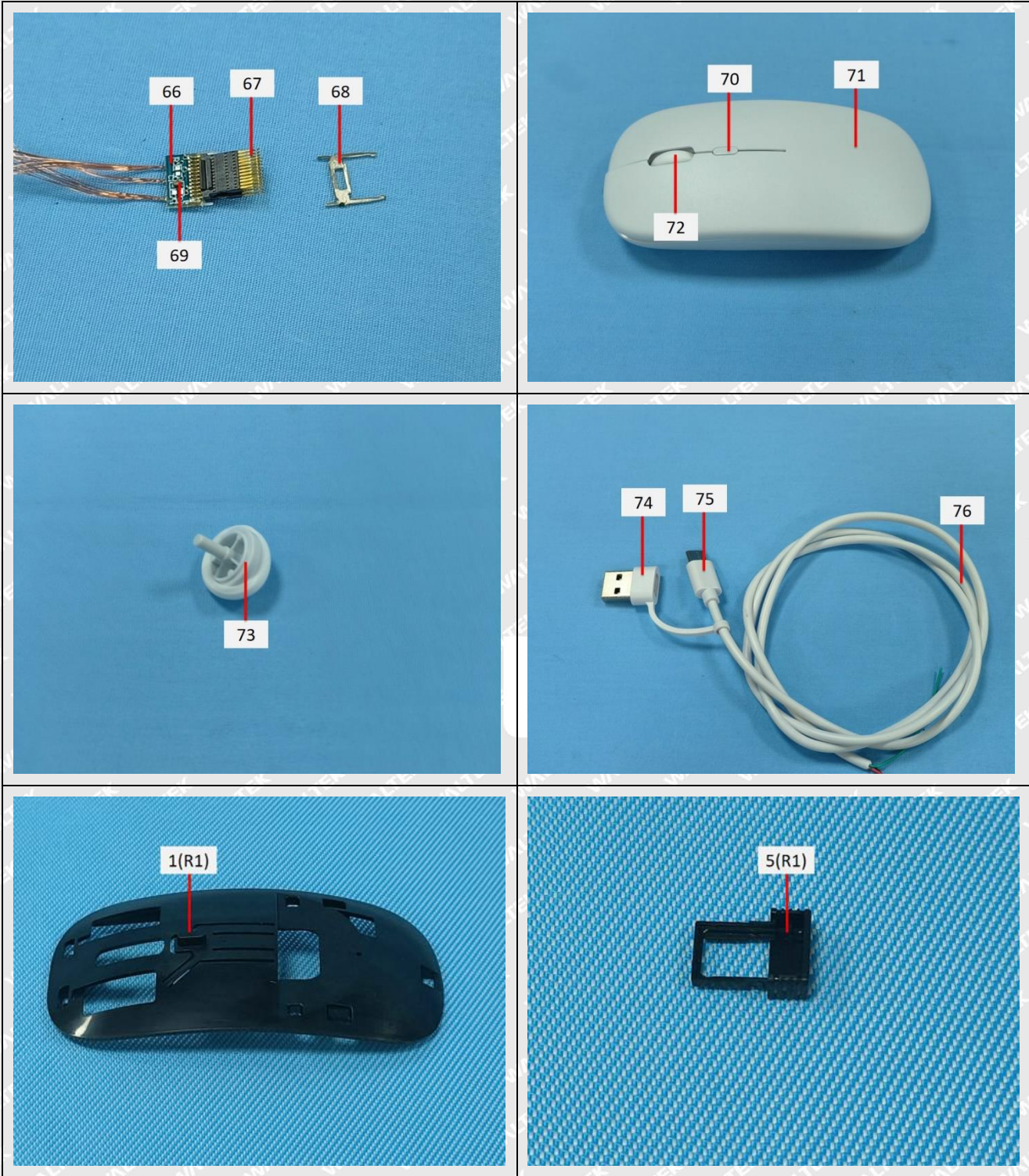
Job No.: FSW2507160863CJ





Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ





Report No.: WTF25F06150657A1C

Job No.: FSW2507160863CJ

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 =====

WALTEK