



中国认可
国际互认
检测
TESTING
CNAS L6478



TEST REPORT

Report No. : WTF26F05128317C
Job No. : FSW2605110375CJ
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 : 105198
Sample Name : Wireless mouse in car shape
Sample Model : MO7641
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 : 2026-05-11
Testing Period : 2026-05-11 to 2026-05-20
Date of Issue : 2026-05-20
Test Result : Refer to next page (s)

Prepared By:

Waltek Testing Group (Foshan) Co., Ltd.

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

Swing Liang



WTF26F05128317C

Swing Liang
Waltek Testing Group (Foshan) Co., Ltd.
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Report No.: WTF26F05128317C

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Sample photo:



MO7641



MO7641

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

Test Method/Equipment:

- 1) 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 62321-12:2023, 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	Black soft plastic ring	BL	BL	BL	BL	BL	NA
2	Black plastic wheel	BL	BL	BL	BL	BL	NA
3	Black plastic shell	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
4	Transparent plastic sheet	BL	BL	BL	BL	BL	NA
5	Red transparent plastic sheet	BL	BL	BL	BL	BL	NA
6	Silvery coating	BL	BL	BL	BL	BL	NA
7	Black plastic shell without silvery coating	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
8	Black plastic cap with silvery plating	BL	BL	BL	BL	BL	NA
9	Black plastic wheel	BL	BL	BL	BL	BL	NA
10	White plastic shell(connector)	BL	BL	BL	BL	BL	NA
11	Silvery metal pin(connector)	BL	BL	BL	BL	--	NA
12	Silvery metal wire	BL	BL	BL	BL	--	NA
13	Black plastic wire covering	BL	BL	BL	BL	BL	NA



Report No.: WTF26F05128317C

Job No.: FSW2605110375CJ

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	Solder	BL	IN	BL	BL	--	Pb :205
16	Black plastic shell	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
17	Silvery metal sheet	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
18	Silvery metal spring	BL	BL	BL	BL	--	NA
19	Semi-transparent plastic shell	BL	BL	BL	BL	BL	NA
20	Solder	BL	BL	BL	BL	--	NA
21	Green PCB	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
22	Silvery metal shell(button)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
23	Black plastic cap(button)	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
24	Silvery metal sheet(button)	BL	BL	BL	BL	--	NA
25	Silvery metal pin(button)	BL	BL	BL	BL	--	NA
26	White plastic shell(socket)	BL	BL	BL	BL	BL	NA
27	Silvery metal pin(socket)	BL	BL	BL	BL	--	NA
28	Black plastic film with grey printing(electrolytic capacitor)	BL	BL	BL	BL	BL	NA
29	Black rubber stopper(electrolytic capacitor)	BL	BL	BL	BL	BL	NA
30	Brown paper(electrolytic capacitor)	BL	BL	BL	BL	BL	NA
31	Silvery metal shell(electrolytic capacitor)	BL	BL	BL	BL	--	NA



Report No.: WTF26F05128317C

Job No.: FSW2605110375CJ

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
32	Silvery metal pin(electrolytic capacitor)	BL	BL	BL	BL	--	NA
33	Grey metal foil(electrolytic capacitor)	BL	BL	BL	BL	--	NA
34	Silvery-grey metal foil(electrolytic capacitor)	BL	BL	BL	BL	--	NA
35	Yellow resistor with multicolor ring	BL	BL	BL	BL	BL	NA
36	Silvery metal pin(resistor)	BL	BL	BL	BL	--	NA
37	Transparent LED	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
38	Silvery metal pin(LED)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
39	Black IC	BL	BL	BL	BL	BL	NA
40	Silvery metal pin(IC)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
41	Black plastic cap(button)	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
42	Silvery-coppery metal sheet(button)	BL	BL	BL	BL	--	NA
43	Silvery-white metal pin(button)	BL	BL	BL	BL	--	NA
44	Silvery metal shell(button)	BL	BL	BL	BL	--	NA
45	Black plastic shell(button)	BL	BL	BL	BL	BL	NA
46	Red plastic cap(button)	BL	BL	BL	BL	BL	NA
47	Coppery metal sheet(button)	BL	BL	BL	BL	--	NA
48	Off-white plastic base(button)	BL	BL	BL	BL	BL	NA
49	Silvery-white metal sheet(button)	BL	BL	BL	BL	--	NA



Report No.: WTF26F05128317C

Job No.: FSW2605110375CJ

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
50	Silvery metal shell(button)	BL	BL	BL	BL	--	NA
51	Silvery metal sheet(button)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
52	Coppery metal sheet(button)	BL	BL	BL	BL	--	NA
53	Silvery-white metal sheet(button)	BL	BL	BL	BL	--	NA
54	Black plastic cap(button)	BL	BL	BL	BL	BL	NA
55	Red PCB	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
56	Chip crystal oscillator	BL	BL	BL	BL	BL	NA
57	Chip IC	BL	BL	BL	BL	BL	NA
58	Chip capacitor	BL	BL	BL	BL	BL	NA
59	Black plastic shell	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
60	Silvery metal shell	BL	BL	BL	BL	--	NA
61	Green PCB	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
62	Chip IC	BL	BL	BL	BL	BL	NA
63	Chip crystal oscillator	BL	BL	BL	IN	BL	Cr ⁶⁺ : ND



Report No.: WTF26F05128317C

Job No.: FSW2605110375CJ

2. Phthalates

Test Method/Equipment:

1) With reference to IEC 62321-12:2023, determination of DBP, BBP, DEHP, DIBP by GC-MS

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T01	1+6+29 [△]	ND	ND	ND	ND
T02	2+3+4+5+7 [△]	ND	ND	ND	ND
T03	8+9+10+16+19 [△]	ND	ND	ND	ND
T04	13+14+37 [△]	ND	ND	ND	ND
T05	21+55+61 [△]	ND	ND	ND	ND
T06	23+26+41+45+46 [△]	ND	ND	ND	ND
T07	28+30 [△]	ND	ND	156	ND
T08	35+63 [△]	ND	ND	ND	ND
T09	39+56+57+58+62 [△]	ND	ND	ND	ND
T10	48+54+59 [△]	ND	ND	ND	ND
T11	11	--	--	--	--
T12	12	--	--	--	--
T13	15	--	--	--	--
T14	17	--	--	--	--
T15	18	--	--	--	--
T16	20	--	--	--	--
T17	22	--	--	--	--
T18	24	--	--	--	--
T19	25	--	--	--	--
T20	27	--	--	--	--
T21	31	--	--	--	--
T22	32	--	--	--	--
T23	33	--	--	--	--
T24	34	--	--	--	--
T25	36	--	--	--	--
T26	38	--	--	--	--
T27	40	--	--	--	--
T28	42	--	--	--	--
T29	43	--	--	--	--
T30	44	--	--	--	--
T31	47	--	--	--	--
T32	49	--	--	--	--
T33	50	--	--	--	--
T34	51	--	--	--	--



Report No.: WTF26F05128317C

Job No.: FSW2605110375CJ

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T35	52	--	--	--	--
T36	53	--	--	--	--
T37	60	--	--	--	--

Remark:

- (1) Results are obtained by XRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for Cr⁶⁺) and GC-MS (for PBBs, PBDEs) is required 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

- (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 Cr⁶⁺ for polymer and composite sample is 8mg/kg and LOQ of Cr⁶⁺ for metal sample is 0.1 $\mu\text{g}/\text{cm}^2$.

- (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.



Report No.: WTF26F05128317C

Job No.: FSW2605110375CJ

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.

(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, " Cr^{6+} " 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.

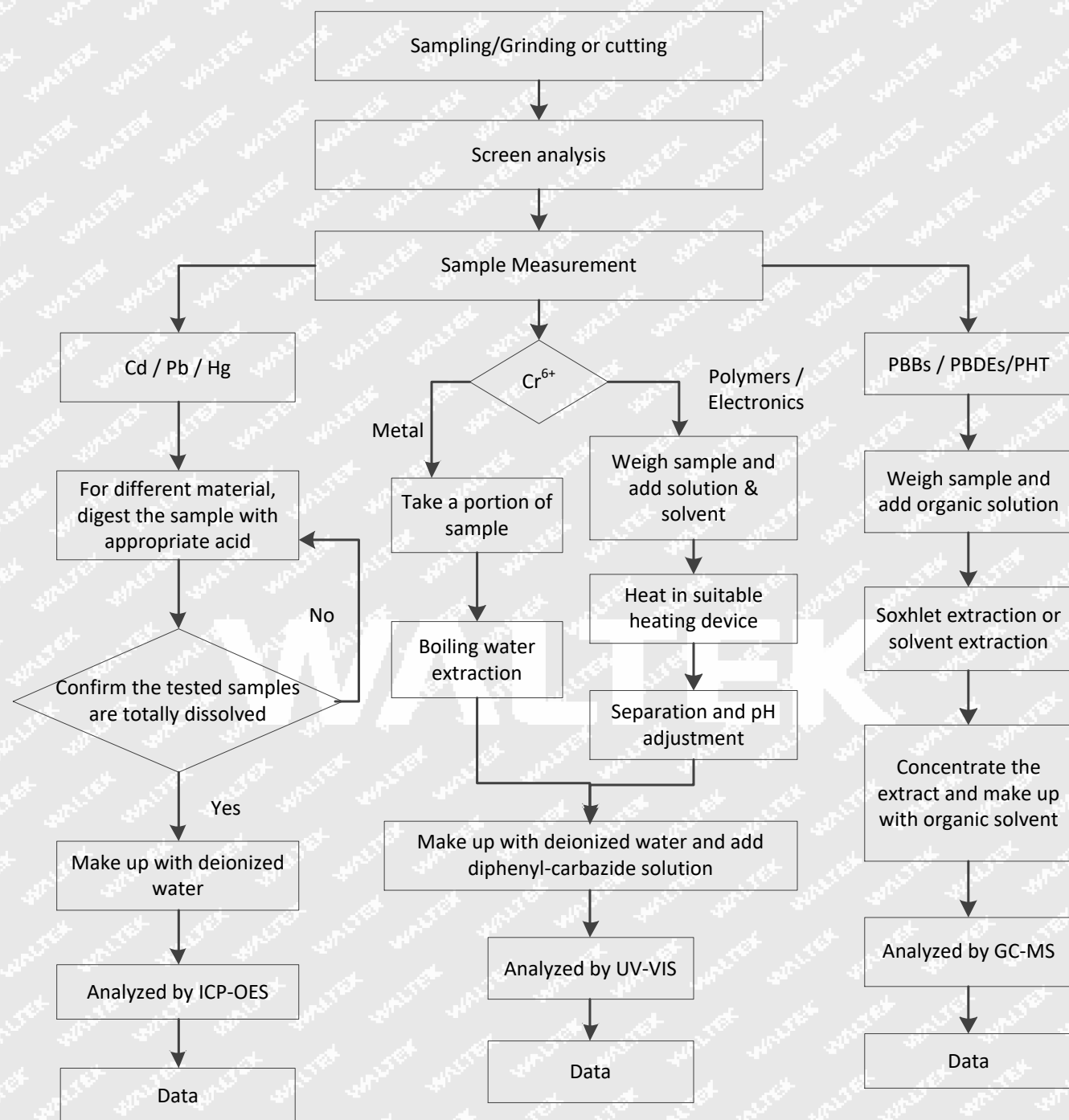
(12) " Δ "=As per applicant's requirement, the testing was conducted based on mixed components by weight in equal ratio, results are calculated by the minimum weight of mixed components.



Report No.: WTF26F05128317C

Job No.: FSW2605110375CJ

Testing Flow chart:

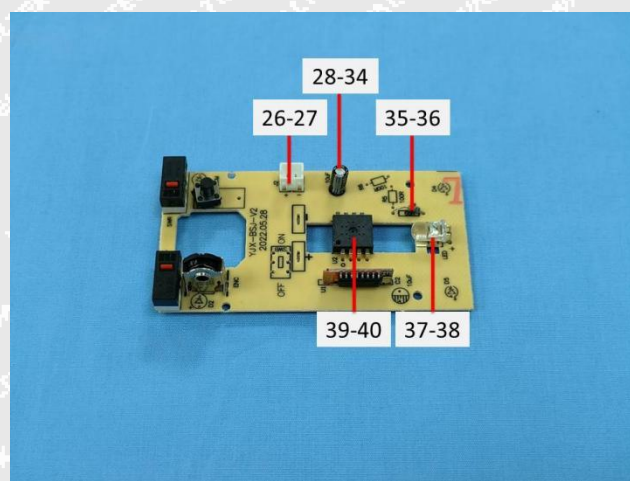
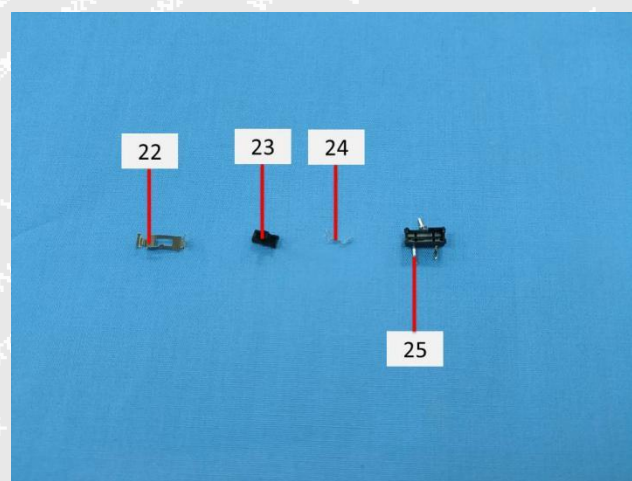
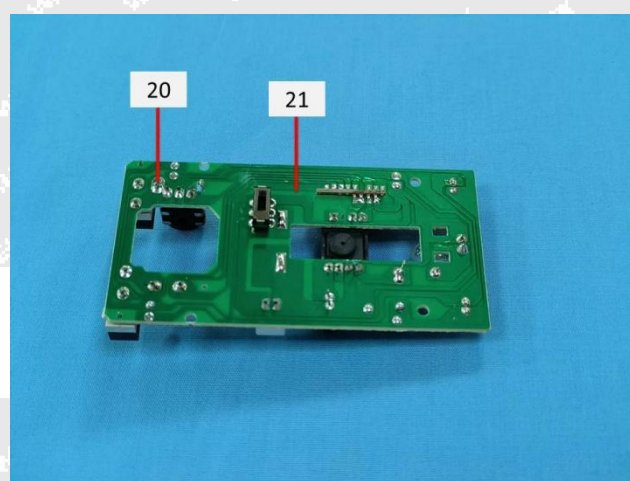
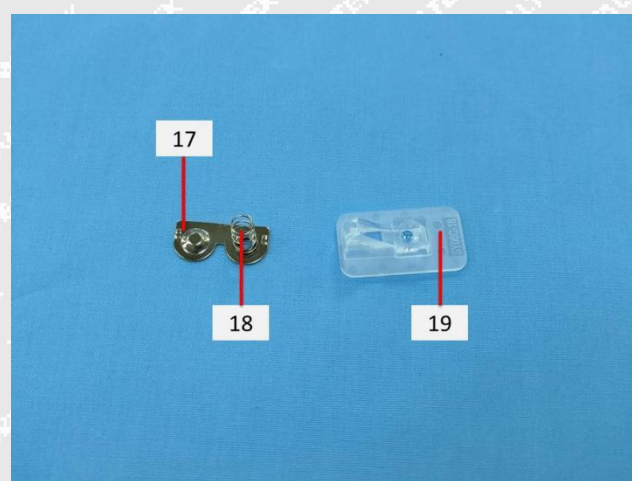
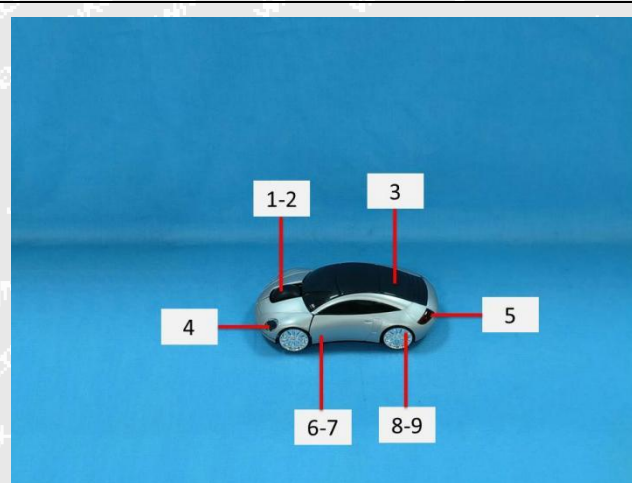




Report No.: WTF26F05128317C

Job No.: FSW2605110375CJ

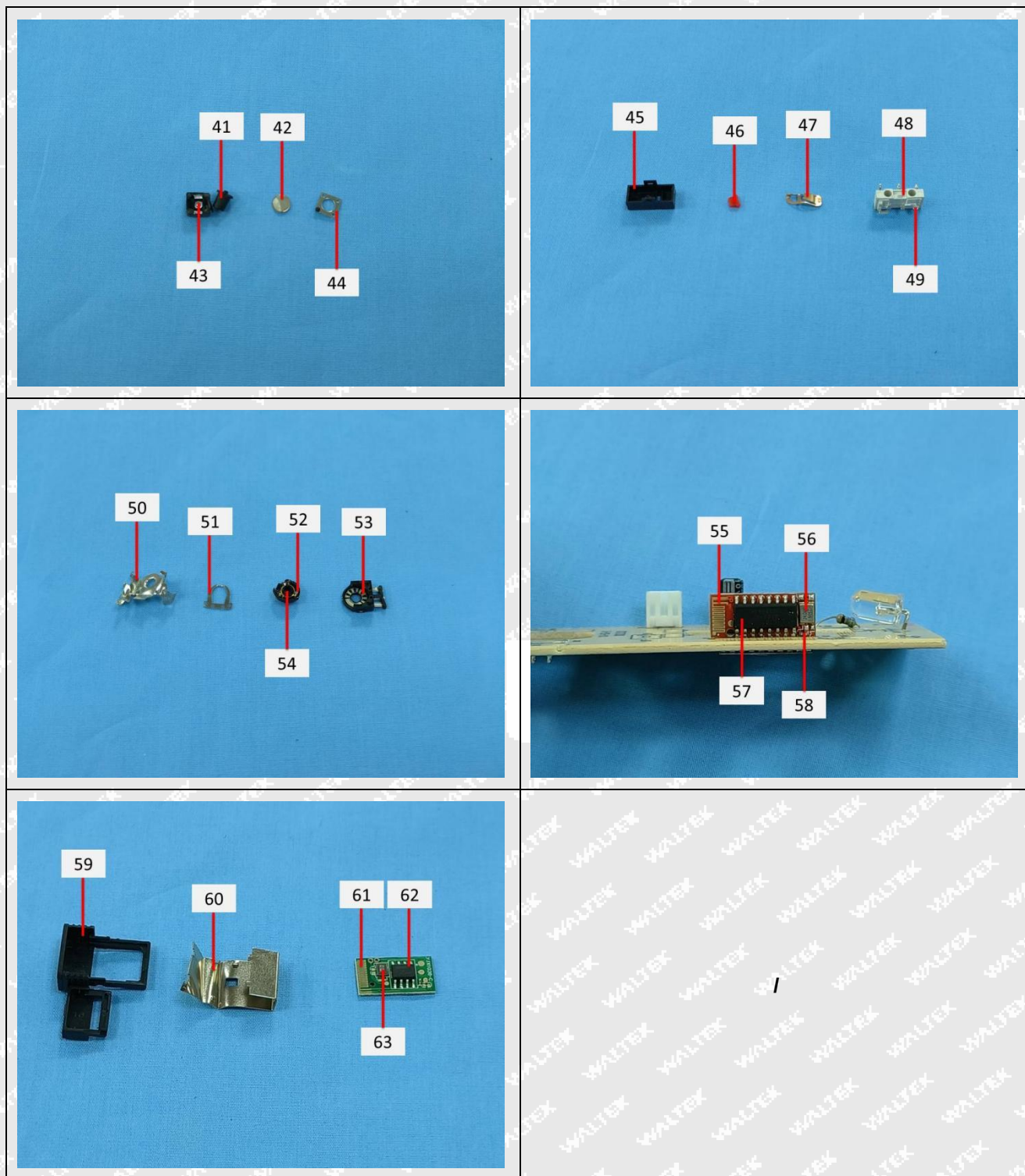
Photograph of parts tested:





Report No.: WTF26F05128317C

Job No.: FSW2605110375CJ





Report No.: WTF26F05128317C

Job No.: FSW2605110375CJ

Remarks:

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