

Test Report

Report No.: AGC03507191005-002

Date: Oct.30, 2019

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Applicant:

Address:

Test site:

Report on the submitted sample(s) said to be:

Sample Name: charger cable with three plugs

Model No.: 1839

Item No.: 9215

Country of Origin: CHINA

Country of Destination: EUROPE

Sample Received Date: Oct.11, 2019

Testing Period: Oct.11, 2019 to Oct.30, 2019

Test Requested: Please refer to following page(s).

Test Method: Please refer to following page(s).

Test Result: Please refer to following page(s).

Approved by: 
Liulinwen, Lewis
Technical Director



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Test Requested:

1. As specified by client, to determine the Polycyclic Aromatic Hydrocarbons (PAHs) content in the submitted sample(s) with reference to entry 50, Annex XVII of the REACH Regulation (EC) No 1907/2006.

2. As specified by client, to determine the Pb, Cd, Hg, Cr⁶⁺, PBBs, PBDEs, DBP, BBP, DEHP, DIBP content in the submitted sample in accordance with Directive 2011/65/EU (RoHS) and its amendment directive (EU) 2015/863 on XRF and Chemical Method.

Conclusion

Pass

Pass

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1. Test Result(s) of Polycyclic Aromatic Hydrocarbons (PAHs)

Unit: mg/kg

Test Item(s)	Test Method /Equipment	MDL	Result(s)	Limit
			1-1	
Benzo[a]anthracene (BaA)	AfPS GS 2014:01 PAK GC-MS	0.1	N.D.	1
Chrysene (CHR)		0.1	N.D.	1
Benzo[b]fluoranthene (BbFA)		0.1	N.D.	1
Benzo[k]fluoranthene (BkFA)		0.1	N.D.	1
Benzo[j]fluoranthene (BjFA)		0.1	N.D.	1
Benzo[a]pyrene (BaP)		0.1	N.D.	1
Benzo[e]pyrene(BeP)		0.1	N.D.	1
Dibenzo[a,h]anthracene (DBAhA)		0.1	N.D.	1
Sum of 8 PAHs		—	N.D.	—
Conclusion		/	Pass	/

- Note:**
1. MDL=Method Detection Limit
 2. N.D.=Not Detected(less than method detection limit)
 3. “—”=Not regulated
 4. As specified by client, only test the designated sample.

Sample Description

1-1	White outside wire sheath
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2.Test Methods:

A:Screening by X-ray Fluorescence Spectrometry (XRF) :With reference to IEC 62321-3-1:2013 Screening – Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry

B:Chemical test:

Test Item	Test Method	Measuring Instrument	MDL
Cadmium (Cd)	IEC 62321-5:2013	ICP-OES	2 mg/kg
Lead (Pb)	IEC 62321-5:2013	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321-4: 2013+A1:2017	ICP-OES	2 mg/kg
Non-metal Hexavalent Chromium (Cr ⁶⁺)	IEC 62321-7-2:2017	UV-Vis	1 mg/kg
Metal Hexavalent Chromium (Cr ⁶⁺)	IEC 62321-7-1:2015	UV-Vis	/
PBBs/PBDEs	IEC 62321-6:2015	GC-MS	5 mg/kg
Di-iso-butyl phthalate (DIBP)	IEC 62321-8:2017	GC-MS	50 mg/kg
Dibutyl phthalate (DBP)		GC-MS	50 mg/kg
Butylbenzyl phthalate (BBP)		GC-MS	50 mg/kg
Di-(2-ethylhexyl) Phthalate (DEHP)		GC-MS	50 mg/kg

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Attestation of Global Compliance Std. & Tech.

No.18 C

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Test Results:

A、 EU RoHS Directive 2011/65/EU and its amendment directives on XRF

Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
1	Red metal handle(USB plug)	BL	BL	BL	BL	N/A
2	White glue(USB plug)	BL	BL	BL	BL	BL
3	White plastic plug(USB plug)	BL	BL	BL	BL	BL
4	Pin(USB plug)	BL	BL	BL	BL	N/A
5	USB metal plug(USB plug)	BL	BL	BL	BL	N/A
6	Solder(USB plug)	BL	BL	BL	BL	N/A
7	White glue(Micro plug)	BL	BL	BL	BL	BL
8	Solder(Micro plug)	BL	BL	BL	BL	N/A
9	Grey plastic plug(Micro plug)	BL	BL	BL	BL	BL
10	Thimble(Micro plug)	BL	BL	BL	X*	N/A
11	Pin(Micro plug)	BL	BL	BL	BL	N/A
12	Micro metal plug(Micro plug)	BL	BL	BL	X*	N/A
13	White glue(TYPE-C plug)	BL	BL	BL	BL	BL
14	Solder(TYPE-C plug)	BL	BL	BL	BL	N/A
15	PCB board(TYPE-C plug)	BL	BL	BL	BL	X*
16	Tin plating pin(TYPE-C plug)	BL	BL	BL	BL	N/A
17	Grey plastic plug(TYPE-C plug)	BL	BL	BL	BL	BL
18	TYPE-C metal plug(TYPE-C plug)	BL	BL	BL	X*	N/A
19	Chip capacitor(TYPE-C plug)	BL	BL	BL	BL	BL
20	Chip resistor(TYPE-C plug)	BL	BL	BL	BL	BL
21	Red braided wire(Wire rod)	BL	BL	BL	BL	BL
22	White outside wire sheath(Wire rod)	BL	BL	BL	BL	BL
23	Red wire sheath(Wire rod)	BL	BL	BL	BL	BL
24	Wire core(Wire rod)	BL	BL	BL	BL	N/A

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Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
25	Black wire sheath(Wire rod)	BL	BL	BL	BL	BL
26	PCB board(Thread buckle)	BL	BL	BL	BL	X*
27	Solder(Thread buckle)	BL	BL	BL	BL	N/A
28	White glue(Thread buckle)	BL	BL	BL	BL	BL
29	Red button(Thread buckle)	BL	BL	BL	BL	N/A
30	Key chain(rivet)	BL	BL	BL	BL	N/A
31	Rivet(rivet)	BL	BL	BL	BL	N/A
Blue difference						
32	Blue metal grip	BL	BL	BL	BL	N/A
33	Blue braid	BL	BL	BL	BL	BL
34	Blue line buckle	BL	BL	BL	BL	N/A
Black difference						
35	Black metal grip	BL	BL	BL	BL	N/A
36	Black braided wire	BL	BL	BL	BL	BL
37	Black wire clasp	BL	BL	BL	BL	N/A
White difference						
38	White metal grip	BL	BL	BL	BL	N/A
39	White braided yarn	BL	BL	BL	BL	BL
40	White line buckle	BL	BL	BL	BL	N/A

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Element	Unit	Non-metal	Metal	Composite Material
Cd	mg/kg	$BL \leq 70 - 3\sigma < X$ $< 130 + 3\sigma \leq OL$	$BL \leq 70 - 3\sigma < X$ $< 130 + 3\sigma \leq OL$	$BL \leq 50 - 3\sigma < X$ $< 150 + 3\sigma \leq OL$
Pb	mg/kg	$BL \leq 700 - 3\sigma < X$ $< 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma < X$ $< 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma < X$ $< 1500 + 3\sigma \leq OL$
Hg	mg/kg	$BL \leq 700 - 3\sigma < X$ $< 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma < X$ $< 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma < X$ $< 1500 + 3\sigma \leq OL$
Cr	mg/kg	$BL \leq 700 - 3\sigma < X$	$BL \leq 700 - 3\sigma < X$	$BL \leq 500 - 3\sigma < X$
Br	mg/kg	$BL \leq 300 - 3\sigma < X$	N/A	$BL \leq 250 - 3\sigma < X$

Note: BL= Below Limit
 OL= Over limited
 X= Inconclusive
 "N/A"=Not applicable
 *= Scanning by XRF and detected by chemical method. The test results of chemical method please refer to next pages.

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Remark:

- i Results were obtained by XRF for primary scanning, and further chemical testing by ICP (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the above warning value according to IEC 62321-3-1:2013.
- ii The XRF scanning test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.
- iii The maximum permissible limit is quoted from RoHS directive 2011/65/EU and its amendment directive (EU) 2015/863:

RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium (Cd)	100
Lead (Pb)	1000
Mercury (Hg)	1000
Hexavalent Chromium (Cr(VI))	1000
Polybrominated biphenyls (PBBs)	1000
Polybrominateddiphenylethers (PBDEs)	1000
Di-iso-butyl phthalate (DIBP)	1000
Dibutyl phthalate (DBP)	1000
Butylbenzyl phthalate (BBP)	1000
Di-(2-ethylhexyl) Phthalate (DEHP)	1000

Disclaimers:

This XRF Scanning report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes.

The result shown in this XRF scanning report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

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B、 The Test Results of Chemical Method:

1)The Test Results of metal Cr⁶⁺

Test Item(s)	MDL	Result(s)			Limit
		10	12	18	
Hexavalent Chromium (Cr ⁶⁺)	See note	Negative	Negative	Negative	#

Note:

- Negative = Absence of Cr(VI) on the tested areas
- MDL = Method Detection Limit
- Boiling-water-extraction:

Number	Colorimetric result (Cr(VI) concentration)	Qualitative result
1	The sample solution is < the 0,10 µg/cm ² equivalent comparison standard solution	The sample is negative for Cr(VI) – The Cr(VI) concentration is below the limit of quantification. The coating is considered a non-Cr(VI) based coating.
2	The sample solution is ≥ the 0,10 µg/cm ² and ≤ the 0,13 µg/cm ² equivalent comparison standard solutions	The result is considered to be inconclusive – Unavoidable coating variations may influence the determination.
3	The sample solution is > the 0,13 µg/cm ² equivalent comparison standard solution	The sample is positive for Cr(VI) – The Cr(VI) concentration is above the limit of quantification and the statistical margin of error. The sample coating is considered to contain Cr(VI).

- # =Negative indicates the absence of Cr(VI) on the tested areas concentration is below the limit of quantification. The coating is considered a non-Cr(VI) based coating.
Uncertainty indicates the absence of Cr(VI) on the tested areas unavoidable coating variations may influence the determination.
Positive indicates the presence of Cr(VI) on the tested areas concentration is above the limit of quantification and the statistical margin of error. The sample coating is considered to contain Cr(VI).
Storage conditions and production date of the tested sample are unavailable and thus result of Cr(VI) represent status of the sample at the time of testing.

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2) The Test Results of PBBs & PBDEs

Unit:mg/kg

Item(s)	MDL	Result(s)		Limit
		15	26	
Polybrominated Biphenyls (PBBs)				
Monobromobiphenyl	5	N.D.	N.D.	Total PBBs Content <1000
Dibromobiphenyl	5	N.D.	N.D.	
Tribromobiphenyl	5	N.D.	N.D.	
Tetrabromobiphenyl	5	N.D.	N.D.	
Pentabromobiphenyl	5	N.D.	N.D.	
Hexabromobiphenyl	5	N.D.	N.D.	
Heptabromobiphenyl	5	N.D.	N.D.	
Octabromobiphenyl	5	N.D.	N.D.	
Nonabromodiphenyl	5	N.D.	N.D.	
Decabromodiphenyl	5	N.D.	N.D.	
Total content	/	N.D.	N.D.	
Polybrominated Diphenylethers (PBDEs)				
Monobromodiphenyl ether	5	N.D.	N.D.	Total PBDEs Content <1000
Dibromodiphenyl ether	5	N.D.	N.D.	
Tribromodiphenyl ether	5	N.D.	N.D.	
Tetrabromodiphenyl ether	5	N.D.	N.D.	
Pentabromodiphenyl ether	5	N.D.	N.D.	
Hexabromodiphenyl ether	5	N.D.	N.D.	
Heptabromodiphenyl ether	5	N.D.	N.D.	
Octabromodiphenyl ether	5	N.D.	N.D.	
Nonabromodiphenyl ether	5	N.D.	N.D.	
Decabromodiphenyl ether	5	N.D.	N.D.	
Total content	/	N.D.	N.D.	
Conclusion	/	Pass	Pass	/

Note: N.D. = Not Detected or less than MDL
 mg/kg = parts per million
 MDL = Method Detection Limit

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3) Test result of DBP, BBP, DEHP, DIBP content

Unit: mg/kg

Seq. No.	Limit Test item	DIBP	DBP	BBP	DEHP	Conclusion
		1000	1000	1000	1000	
2		N.D.	N.D.	N.D.	N.D.	Pass
3		N.D.	N.D.	N.D.	N.D.	Pass
7		N.D.	N.D.	N.D.	N.D.	Pass
9		N.D.	N.D.	N.D.	N.D.	Pass
13		N.D.	N.D.	N.D.	N.D.	Pass
15		N.D.	N.D.	N.D.	N.D.	Pass
17		N.D.	N.D.	N.D.	N.D.	Pass
19		N.D.	N.D.	N.D.	N.D.	Pass
20		N.D.	N.D.	N.D.	N.D.	Pass
21		N.D.	N.D.	N.D.	N.D.	Pass
22		N.D.	N.D.	N.D.	N.D.	Pass
23		N.D.	N.D.	N.D.	N.D.	Pass
25		N.D.	N.D.	N.D.	N.D.	Pass
26		N.D.	N.D.	N.D.	N.D.	Pass
28		N.D.	N.D.	N.D.	N.D.	Pass
33		N.D.	N.D.	N.D.	N.D.	Pass
36		N.D.	N.D.	N.D.	N.D.	Pass
39		N.D.	N.D.	N.D.	N.D.	Pass

Note:
 1. MDL = Method Detection Limit
 2. N.D. = Not Detected (less than method detection limit)

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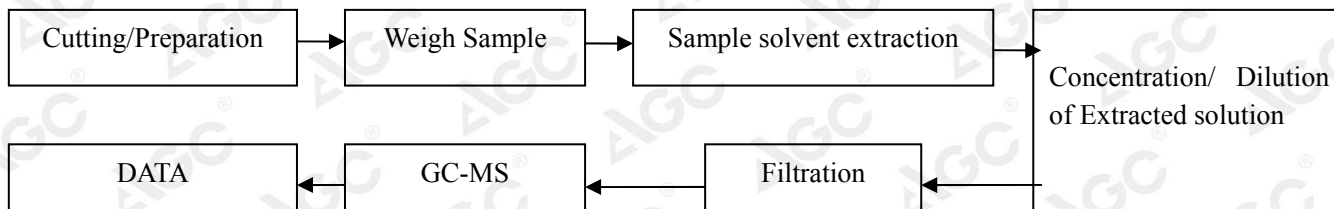
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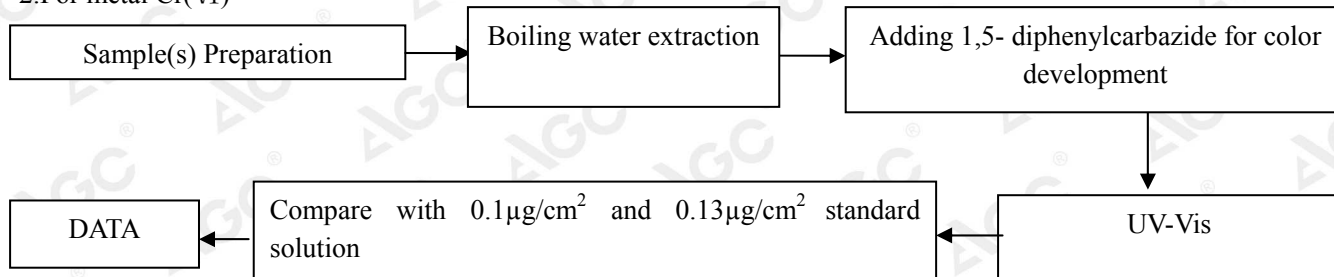
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Test Flow Chart

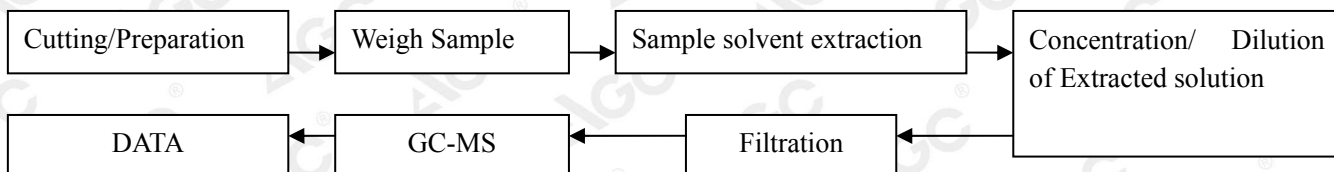
1. For PAHs



2.For metal Cr(VI)



3.For PBBs, PBDEs, DBP, BBP, DEHP, DIBP



Test result on specimen No.3 was resubmitted on Oct.24, 2019.

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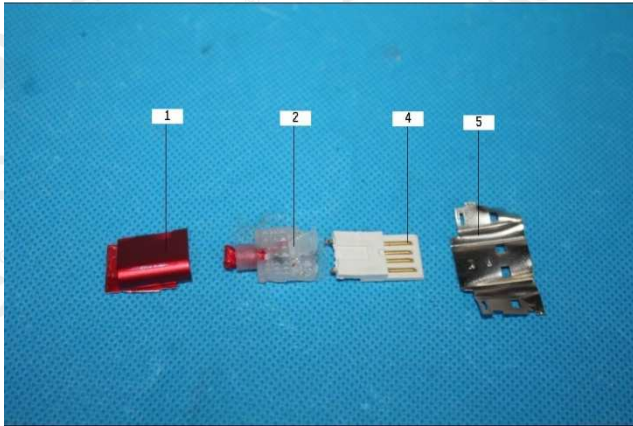
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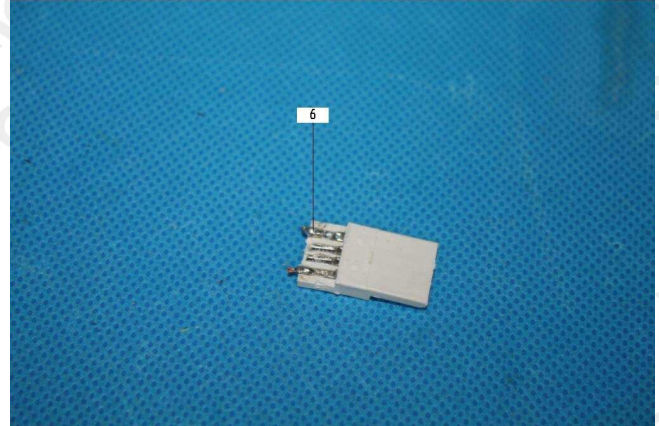
Date: Oct.30, 2019

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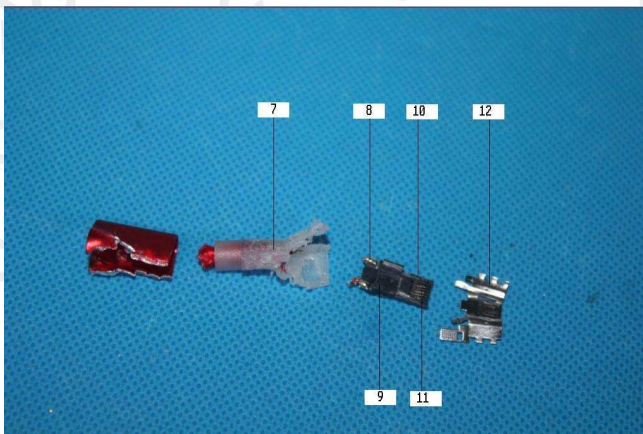
The photo of the sample



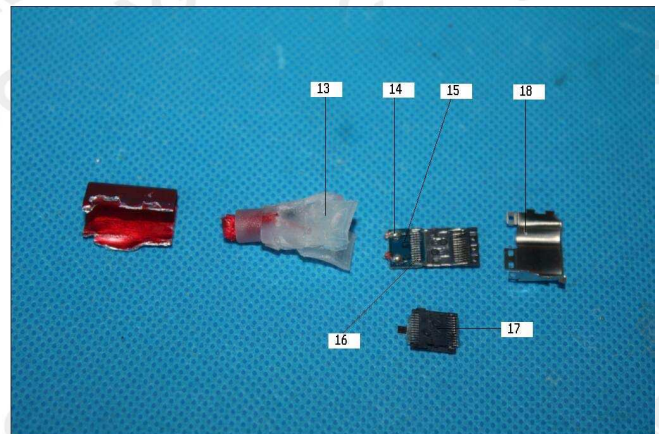
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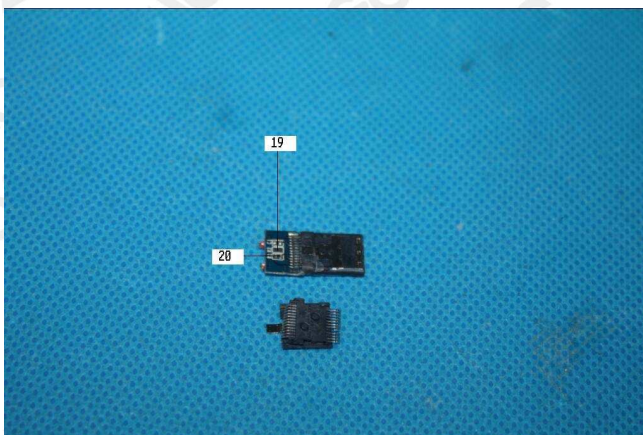
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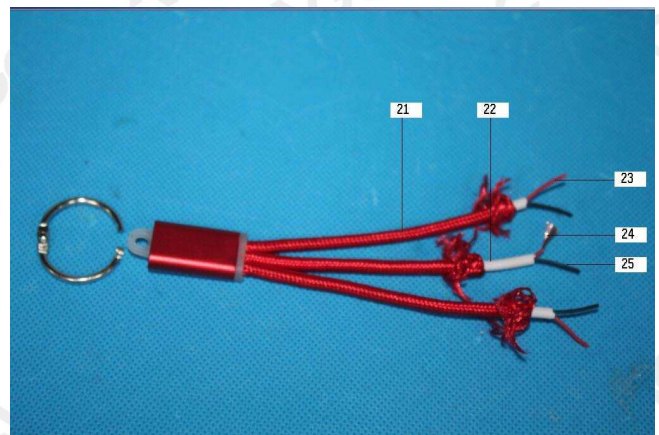
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4



5



6

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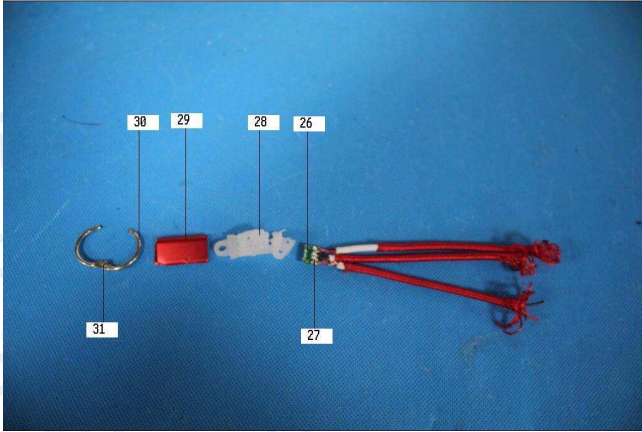


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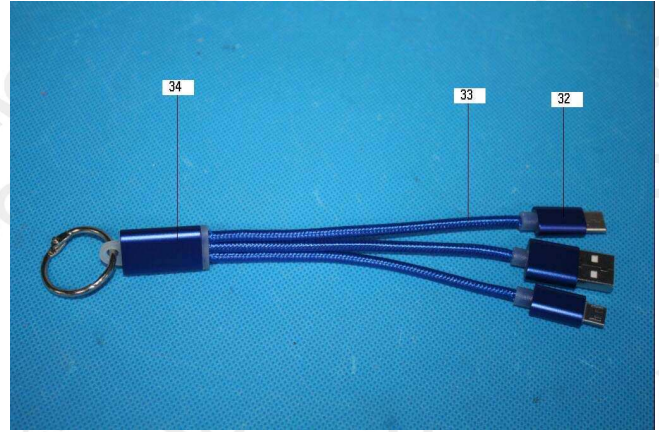
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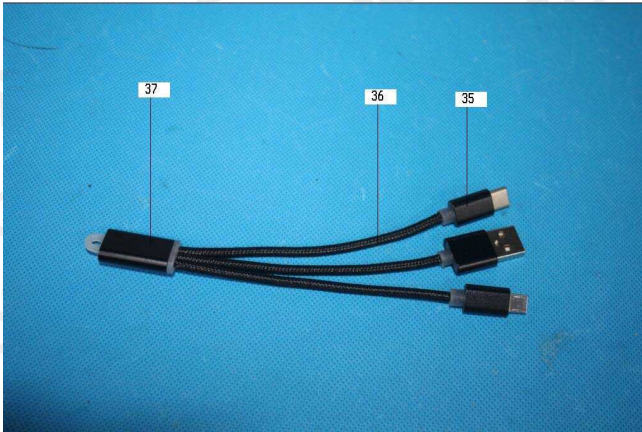
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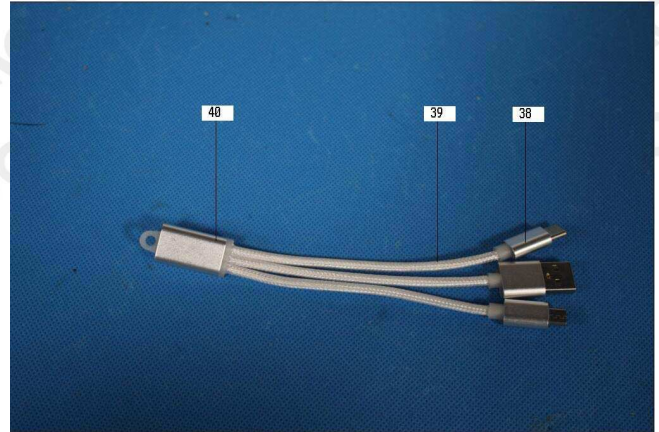
7



8



9



10



11



12

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AGC authenticates the photo only on original report

*** End of Report ***

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