Test Report

Report No.: AGC02860181103-001 Date: Nov.13, 2018 Page 1 of 12

Applicant:

Address:

Report on the submitted samples said to be:

Sample Name	:	USB Cable
Model	:	E-CB-XD001-B
Country of origin	:	China
Country of destination	:	USA
Manufacturers	:	
Address	:	
Sample Receiving Date	:	Nov.08, 2018
Testing Period	:	Nov.08, 2018 to Nov.13, 2018
Test site	:	6/F.,Building 2,No.1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Baoan District, Shenzhen, Guangdong, China
Test Requested:	:	Please refer to next page(s).
Test Method	:	Please refer to next page(s).
Test Result	:	Please refer to next page(s).

.

Approved by:

Liulinwen, Lewis

Technical Director

Attestation of Global Compliance Std. & Tech.

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Test Report

Test Requested:	**Conclusion**
1. As specified by client, refer to EU Regulation (EC) No 1907/2006 (REACH), to determine the SCCP content in the submitted sample.	
The concentrations of tested SVHC are ≤0.1%(W/W) in the submitted sample.	**Pass**
2. 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.	**Pass**
3. As specified by client, to determine the phthalates content in the submitted sample(s) with reference to entry 51 & 52, Annex XVII of the REACH Regulation (EC) No 1907/2006 .	**Pass**
4. As specified by client, to determine the Pb, Cd, Hg, Cr^{6+}, PBBs, PBDEs content in the submitted sample in accordance with EU RoHS Directive 2011/65/EU(RoHS) and its amendment directives on XRF and Chemical Method.	**Pass**

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Test Report

1. Test Result(s) of SCCP

Unit: mg/kg

Test Item(s)	Test Method/ Equipment	MDL	Result(s)		Limit
			1-1	1-2	
SCCP	Refer to EPA 3540C:1996 EPA 8270D:2014 GC-MS	100	N.D.	N.D.	1000
Conclusion	/	/	**Pass**	**Pass**	/

Note: 1. MDL＝Method Detection Limit
2. N.D.=Not Detected(less than method detection limit)
3. As specified by client, the submitted samples were mixed to test.

2. Test result of Polycyclic Aromatic Hydrocarbons (PAHs)

Unit: mg/kg

Test Item(s)	Test Method /Equipment	MDL	Result(s)		Limit
			1-1	1-2	
Benzo[a]anthracene (BaA)	Refer to AfPS GS 2014:01 PAK GC-MS	0.1	N.D.	N.D.	1
Chrysene (CHR)		0.1	N.D.	N.D.	1
Benzo[b]fluoranthene (BbFA)		0.1	N.D.	N.D.	1
Benzo[k]fluoranthene (BkFA)		0.1	N.D.	N.D.	1
Benzo[j]fluoranthene (BjFA)		0.1	N.D.	N.D.	1
Benzo[a]pyrene (BaP)		0.1	N.D.	N.D.	1
Benzo[e]pyrene(BeP)		0.1	N.D.	N.D.	1
Dibenzo[a,h]anthracene (DBAhA)		0.1	N.D.	N.D.	1
Sum of 8 PAHs		—	N.D.	N.D.	/
Conclusion		/	**Pass**	**Pass**	/

Note: 1. MDL=Method Detection Limit
2. N.D.=Not Detected(less than method detection limit)
3. As specified by client, the submitted samples were mixed to test.

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Test Report

3. Test result of phthalates content

Unit: %, w/w

Test Item(s)	Test Method/ Equipment	MDL	Result(s)		Limit
			1-1	1-2	
Dibutyl phthalate (DBP)	Refer to EN 14372:2004 GC-MS	0.01	N.D.	N.D.	—
Butylbenzyl phthalate (BBP)		0.01	N.D.	N.D.	
Di- (2-ethylhexyl) phthalate (DEHP)		0.01	N.D.	N.D.	
Sum of DBP+BBP+DEHP		—	N.D.	N.D.	0.1
Di-n-octyl phthalate (DNOP)		0.01	N.D.	N.D.	—
Di-isononyl phthalate (DINP)		0.01	N.D.	N.D.	
Di-isodecyl phthalate (DIDP)		0.01	N.D.	N.D.	
Sum of DNOP+DINP+DIDP		—	N.D.	N.D.	0.1
Conclusion		/	**Pass**	**Pass**	/

Note: 1. 0.1%,w/w =1000mg/kg
2. MDL=method detection limit
3. N.D.=not detected（less than method detection limit）
4. "—" =Not regulated
5. As specified by client, the submitted samples were mixed to test.

Sample Description

1-1	Black & white handle
1-2	Black & white wire jacket

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4.Test Methods:

A: Screening by X-ray Fluorescence Spectrometry (XRF) :With reference to IEC 62321-3-1:2013 Ed 1.0 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 Ed 1.0	ICP-OES	2 mg/kg
Lead (Pb)	IEC 62321-5:2013 Ed 1.0	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321-4:2017 Ed 1.1	ICP-OES	2 mg/kg
Non-metal Hexavalent Chromium (Cr^{6+})	IEC 62321-7-2:2017 Ed 1.0	UV-Vis	1 mg/kg
Metal Hexavalent Chromium (Cr^{6+})	IEC 62321-7-1:2015 Ed 1.0	UV-Vis	/
PBBs/PBDEs	IEC 62321-6:2015 Ed 1.0	GC-MS	5 mg/kg

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Test Report

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	White handle(USB joint)	BL	BL	BL	BL	BL
2	Tin solder(USB joint)	BL	BL	BL	BL	-
3	White plastic plug(USB joint)	BL	BL	BL	BL	X*
4	Contact pin(USB joint)	BL	BL	BL	BL	-
5	USB metal plug(USB joint)	BL	BL	BL	BL	-
6	Tin solder(Micro joint)	BL	BL	BL	BL	-
7	Black plastic plug(Micro joint)	BL	BL	BL	BL	BL
8	Metal thimble(Micro joint)	BL	BL	BL	X*	-
9	Contact pin(Micro joint)	BL	BL	BL	BL	-
10	Micro metal plug(Micro joint)	BL	BL	BL	X*	-
11	White outer wire jacket(wire rod)	BL	BL	BL	BL	BL
12	Wire core(wire rod)	BL	BL	BL	BL	-
13	Red wire jacket(wire rod)	BL	BL	BL	BL	BL
14	Black wire jacket(wire rod)	BL	BL	BL	BL	BL
Different						
15	Black outer wire jacket	BL	BL	BL	BL	BL
16	Black handle	BL	BL	BL	BL	BL

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

Note: BL= Below Limit
OL= Over limited
X= Inconclusive
"-"= Not regulated
*= 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 Ed 1.0.

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:

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
Polybrominated diphenylethers (PBDEs)	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 Cr^{6+}

Test Item(s)	MDL	Result(s)		Limit
		8	10	
Hexavalent Chromium (Cr^{6+})	See note	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/cm² 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/cm² and ≤ the0,13 μg/cm² 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/cm² 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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4) The Test Results of PBBs & PBDEs

Unit: mg/kg

Item(s)	MDL	Result(s)	Limit
		3	
Polybrominated Biphenyls (PBBs)			
Monobromobiphenyl	5	N.D.	Total PBBs Content <1000
Dibromobiphenyl	5	N.D.	
Tribromobiphenyl	5	N.D.	
Tetrabromobiphenyl	5	N.D.	
Pentabromobiphenyl	5	N.D.	
Hexabromobiphenyl	5	N.D.	
Heptabromobiphenyl	5	N.D.	
Octabromobiphenyl	5	N.D.	
Nonabromodiphenyl	5	N.D.	
Decabromodiphenyl	5	N.D.	
Total content	/	N.D.	
Polybrominated Diphenylethers (PBDEs)			
Monobromodiphenyl ether	5	N.D.	Total PBDEs Content <1000
Dibromodiphenyl ether	5	N.D.	
Tribromodiphenyl ether	5	N.D.	
Tetrabromodiphenyl ether	5	N.D.	
Pentabromodiphenyl ether	5	N.D.	
Hexabromodiphenyl ether	5	N.D.	
Heptabromodiphenyl ether	5	N.D.	
Octabromodiphenyl ether	5	N.D.	
Nonabromodiphenyl ether	5	N.D.	
Decabromodiphenyl ether	5	N.D.	
Total content	/	N.D.	
Conclusion	/	**Pass**	/

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

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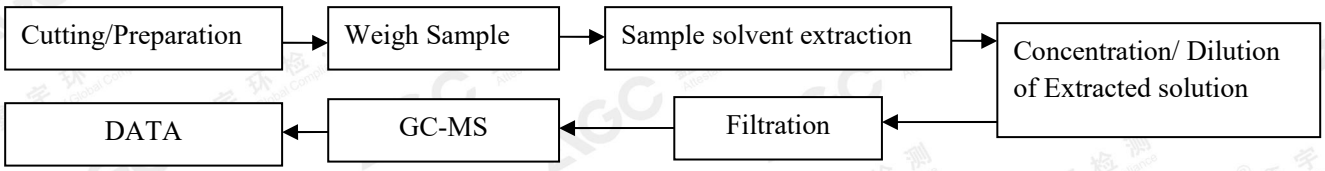
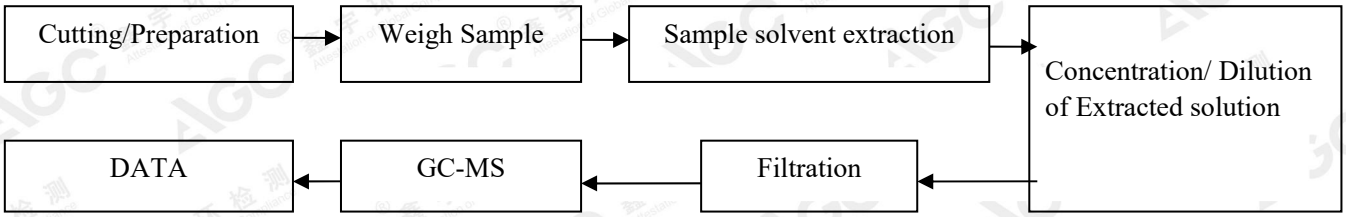
Test Report

Test Flow Chart

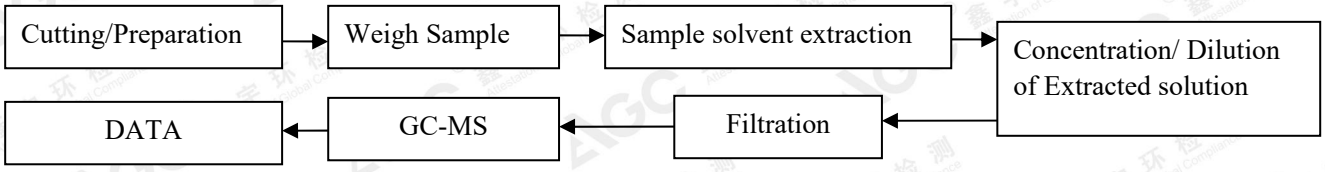
1. For SCCPs



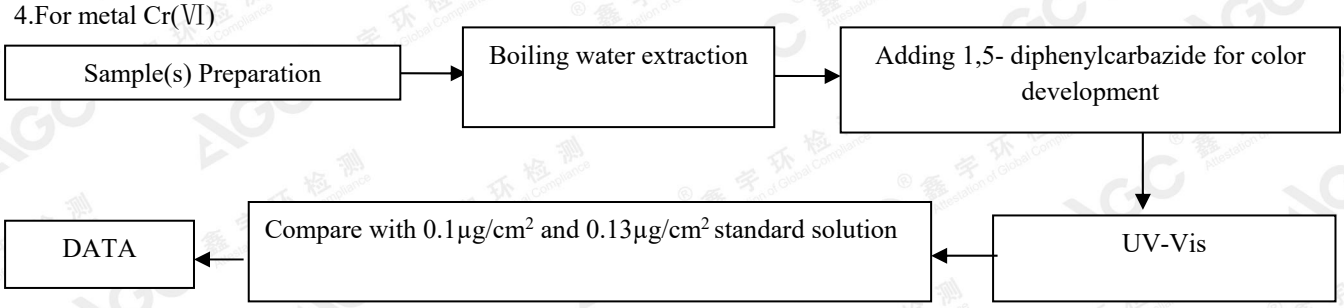
2. For PAHs



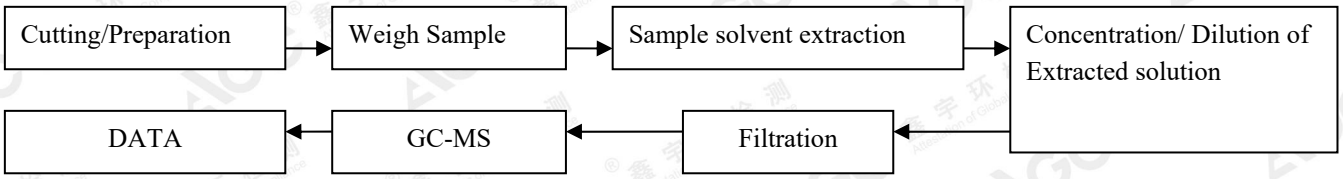
3. For phthalates



4.For metal Cr(Ⅵ)



5.For PBBs & PBDEs



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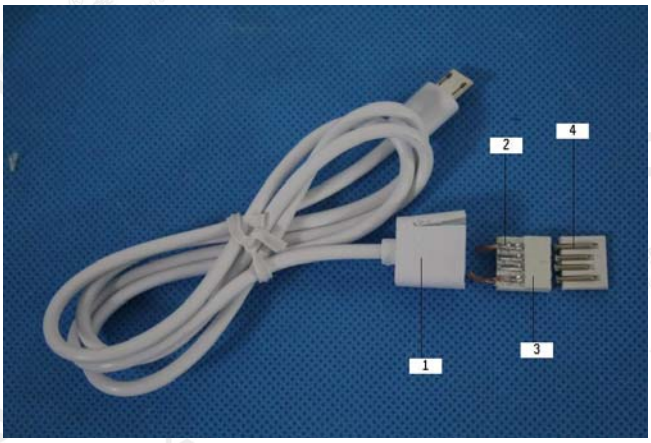
The photo of the sample



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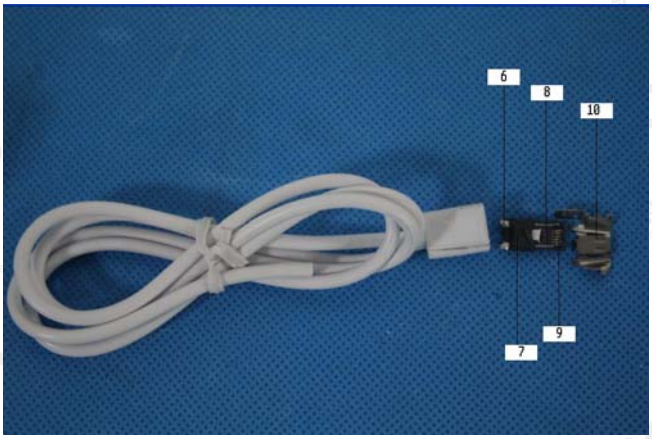

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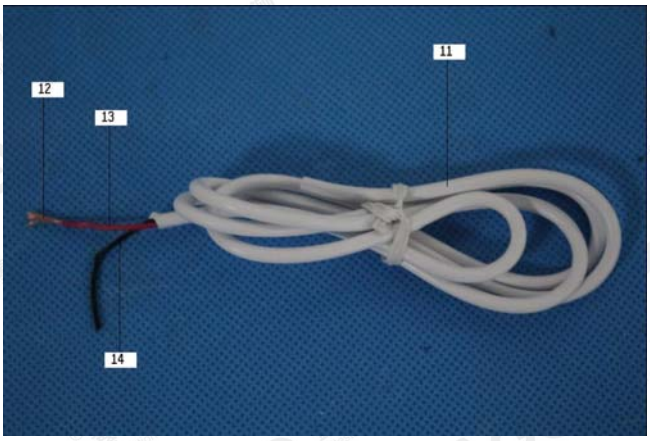

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