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Applicant : Address :

The submitted sample and sample information was/were submitted and identified by/on the behalf

of the client

Sample name

Sample received date : Jun. 4, 2020

Testing period : Jun. 4 , 2020 - Jun. 11, 2020

: 1. As specified by client, to screen Lead(Pb), Cadmium(Cd), Test requested

Mercury(Hg), Chromium(Cr) and Bromine(Br) in the submitted

sample(s) by XRF.

2. As specified by client, when screening results exceed the XRF screening limit in IEC 62321-3-1:2013, further use of chemical methods are required to test the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs) in the

submitted samples.

3. As specified by client, to test the Di-isobutyl phthalate(DIBP),

Dibutyl phthalate(DBP), Benzyl butyl phthalate(BBP),

Bis(2-ethyl(hexyl) phthalate)(DEHP)in the submitted sample(s).

According to the RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863

*****For more detailed information, please refer to the next page*****

Tested by Xingping Li

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APPROVED

TESTIVA PPROVED by

Hanyao Chen

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Test Method:

A. Screening test by XRF spectroscopy

XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1:2013.

Element	Limit of IEC 62321-3	MI	DL	
	Polymers and metals	Composite material	Polymers	Other material
Pb	BL≤(700-3σ) <x <(1300+3σ)<br="">≤OL</x>	BL≤(500-3σ) <x <(1500+3σ)<br="">≤OL</x>	10 mg/kg	50 mg/kg
Cd	BL≤(70-3σ) <x <(130+3σ)<br="">≤OL</x>	LOD≤(50-3σ) <x <(150+3σ)<br="">≤OL</x>	10 mg/kg	50 mg/kg
Hg	BL≤(700-3σ) <x <(1300+3σ)<br="">≤OL</x>	BL≤(500-3σ) <x <(1500+3σ)<br="">≤OL</x>	10 mg/kg	50 mg/kg
Cr	BL≤(700-3σ)< X	BL≤(500-3σ)< X	10 mg/kg	50 mg/kg
Br	BL≤(300-3σ)< X	BL≤(250-3σ)< X	10 mg/kg	50 mg/kg
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Note:

- BUTC -BL = Under the XRF screening limit
- -OL = Further chemical test will be conducted while result is above the screening limit
- -X= The symbol "X" marks the region where further investigation is necessary
- -3σ = The reproducibility of analytical instruments
- -LOD= Detection limit
- -"--" = Not regulated.

B. Chemical Test

B. Chemical Test			BCT	C
Test Item(s)	Test Method	Measured Equipment(s)	MDL	Limit
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES	2 mg/kg	1000 mg/kg
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES	2 mg/kg	100 mg/kg
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017	ICP-OES	2 mg/kg	1000 mg/kg
Llauranalant Observations On (II)	IEC 62321-7-1:2015 Ed.1.0	10/1/10	10	1000 mg/kg
Hexavalent Chromium Cr(VI)	IEC 62321-7-2:2017 Ed.1.0	UV-VIS	8 mg/kg	1000 mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015 Ed.1.0	GC-MS	5 mg/kg	1000 mg/kg
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015 Ed.1.0	GC-MS	5 mg/kg	1000 mg/kg
Phthalates	IEC 62321-8:2017 Ed.1.0	GC-MS	50 mg/kg	1000 mg/kg

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Test Results:

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion	
BC	BCIL	Pb	BL	1		
1		Cd	BL	TC /		
	Yellow	Hg	BL	1	PASS	
	bamboo shell	Cr(Cr(VI))	BL	1 105	TC.	
		Br(PBBs&PBDEs)	BL	1		
		Pb	BL	1		
	BCIC	Cd	BL	1		
2	Black disk	Hg	BL		PASS	
	123	Cr(Cr(VI))	BL	1		
		Br(PBBs&PBDEs)	BL	1	-rTC	
C		Pb	BL	1	Bri	
		Cd	BL	1		
3	Yellow	Hg	BL	1	PASS	
	transparent tape	Cr(Cr(VI))	BL	1		
		Br(PBBs&PBDEs)	BL	1		
		Pb	BL	1		
-75		Cd	BL BL	1	BCII	
4	Pink coil	Hg	BL	1	PASS	
		Cr(Cr(VI))	BL BL	- 1		
	Br	Br(PBBs&PBDEs)	BL	1		
		Pb	BL	1 80	10	
		Cd	BL	1		
5	Yellow	Hg	BL	1	PASS	
BC	bamboo shell	Cr(Cr(VI))	BL	1		
		Br(PBBs&PBDEs)	BL	UCTE /		
	B	Pb	BL	1		
		Cd	BL	1	BCTC	
6	Quick-drying glue	Hg	BL	1	PASS	
		Cr(Cr(VI))	BL CC	1		
	BCTC	Br(PBBs&PBDEs)	BL	1		
		Pb	BL	- CEC		
		Cd	BL	1		
7	White solid glue	Hg	BL	1	PASS	
RCTC		Cr(Cr(VI))	BL	1	Dr.	
-		Br(PBBs&PBDEs)	1	1	1	

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	100			100	
		Pb	BL	1	
		Cd	BL	1	-
8	Component	Hg	BL	1	PASS
BC.	resistance	Cr(Cr(VI))	BL	1	
	-10	Br(PBBs&PBDEs)	/ BC	1	
	BCIC	Pb	BL	/	
		Cd	BL	/ BCT	C
9	Chip IC	Hg	BL	1	PASS
		Cr(Cr(VI))	BL	1	- 3
1	BCIL	Br(PBBs&PBDEs)	BL	1	
		Pb	BL	aCT4	
	80	Cd	BL	1	
10	Silvery metal pin of USB	Hg	BL	1	PASS
C	pin or OSB	Cr(Cr(VI))	BL	1	
		Br(PBBs&PBDEs)	BL	1	
	BCTC	Pb	BL	1	
		Cd	BL	-1-TC	
11	Component	Hg	BL	1	PASS
	capacitance	Cr(Cr(VI))	BL	1	-CTC
OTTE		Br(PBBs&PBDEs)	BL	1	BC
30		Pb	BL	1	
	RCTC	Cd	BL	1	
12	LED	Hg	BL	1	PASS
		Cr(Cr(VI))	BL	1 80	
	lo lo	Br(PBBs&PBDEs)	BL	1	
	10	Pb	BL	1	BC
Br		Cd	BL	1	
13	Component resistance	Hg	BL	C1 - 1	PASS
	resistance	Cr(Cr(VI))	BL	1	
10		Br(PBBs&PBDEs)	BL	1	BCIC
		Pb	BL	1	
		Cd	BL	/	, and the second
14	Component diode	Hg	BL	1	PASS
		Cr(Cr(VI))	BL	BC	
		Br(PBBs&PBDEs)	BL	/	west.
		` '	-6		BL176

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		Pb	BL	\BC\-	
		Cd	BL	1	
15	Chip IC	Hg	BL	/	PASS
6	.,	Cr(Cr(VI))	BL	1	
		Br(PBBs&PBDEs)	BL	1	
	BCI	Pb	BL	/	
		Cd	BL	/ (2)	CTC
16	CBB	Hg	BL	/	PASS
		Cr(Cr(VI))	BL	/	
	BCTC	Br(PBBs&PBDEs)	BL	1	
		Pb	BL	eC/	
		Cd	BL	1	
17	Chip IC	Hg	BL	/	PASS
75		Cr(Cr(VI))	BL	1	Do
		Br(PBBs&PBDEs)	BL	1	
	BCIC	Pb	BL	/	
		Cd	BL	1-250	
18	Yellow copper wire	Hg	BL	1	PASS
		Cr(Cr(VI))	BL	/	
DET	C.	Br(PBBs&PBDEs)	BL	/	BC
D.		Pb	BL	201	
	RC1	Cd	BL	1	
19	Red wire covering	Hg	BL	1	PASS
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	1	
	~70	Pb	BL	1	
	80.	Cd	BL	1	
20	Green PCB	Hg	BL	8017	PASS
		Cr(Cr(VI))	BL	1	
40		Br(PBBs&PBDEs)	BL	/	BCIL
3)		Pb	BL	/	
	and the second	Cd	BL	/	
21	Silvery metal shell of socket	Hg	BL	/	PASS
	snen of socket	Cr(Cr(VI))	BL	PETC	
		Br(PBBs&PBDEs)	BL	1	

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		Pb	BL	1BC1	
		Cd	BL	1	
22	Silvery metal pin of socket	Hg	BL	1	PASS
6	pin or socker	Cr(Cr(VI))	BL	1	
	-	Br(PBBs&PBDEs)	BL	3C1-1	
	BC	Pb	BL	1	
		Cd	BL	1 3	CTC
23	Black plastic	Hg	BL	1	PASS
	core of socket	Cr(Cr(VI))	BL	1	
	BCIC	Br(PBBs&PBDEs)	BL	1	
		Pb	BL	RCTIC	
	0.1	Cd	BL	1	
24	Black wire	Hg	TC BL	1	PASS
75		Cr(Cr(VI))	BL	/	Do
		Br(PBBs&PBDEs)	BL	/	
	BCIC	Pb	BL	1	
		Cd	BL	1-510	
25	Yellow copper wire	Hg	BL	1	PASS
		Cr(Cr(VI))	BL	/	-
SET	C.	Br(PBBs&PBDEs)	BL	/	BC
P-		Pb	BL	1	
	P.C.	Cd	BL	1	
26	Pink copper wire	Hg	BL	1	PASS
		Cr(Cr(VI))	BL	1 6	
		Br(PBBs&PBDEs)	BL	1	
	~70	Pb	BL	1	
	80.	Cd	BL	1	
27	White plastic	Hg	BL	8617	PASS
	covering of wire	Cr(Cr(VI))	BL	1	
30		Br(PBBs&PBDEs)	BL	/	BCIC
1		Pb	BL	/	
	-	Cd	BL BL	/	
28	Black plastic	Hg	BL	/	PASS
-	core of socket	Cr(Cr(VI))	BL	PETE	
		Br(PBBs&PBDEs)	BL	/	

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		Pb	BL	1BC1-	A
		Cd	BL	1	
29	Silvery metal	Hg	BL	1	PASS
80	pin of socket	Cr(Cr(VI))	BL	1	
		Br(PBBs&PBDEs)	BL	30101	
	BC	Pb	BL	1	
		Cd	BL	1 (9)	TC
30	Silvery metal shell of socket	Hg	BL	1	PASS
	shell of socket	Cr(Cr(VI))	BL	1	
	BCIL	Br(PBBs&PBDEs)	BL	1	
		Pb	BL	RCTC	
		Cd	BL	1	
31	Transparent	Hg	BL	1	PASS
TC	hard plastic	Cr(Cr(VI))	BL	1	Do
		Br(PBBs&PBDEs)	BL	1	
	BCIC	Pb	BL	1	
		Cd	BL	1-250	
32	White hard	Hg	BL	1	PASS
	plastic of USB	Cr(Cr(VI))	BL	1	
2011		Br(PBBs&PBDEs)	BL	1	BC
De		Pb	BL	20 1	
	RC	Cd	BL	1	
33	Silvery metal	Hg	BL	1	PASS
	pin of USB	Cr(Cr(VI))	BL	1 8	-1-
		Br(PBBs&PBDEs)	BL	1	
	~10	Pb	BL	1	
6	-	Cd	BL	1	
34	Silvery metal	Hg	BL	BCIT	PASS
	shell of USB	Cr(Cr(VI))	BL	1	
TC.		Br(PBBs&PBDEs)	BL	1	BCIC
-)		Pb	BL	1	
	-10	Cd	BL	1	
35	White hard plastic	Hg	BL	1	PASS
	•	Cr(Cr(VI))	BL	BUIL	
		Br(PBBs&PBDEs)	BL	1	

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Tested Item(s)	BCTC		Results Unit (mg/kg)	BCTC	3-1
-rTC		BCTC	1-35		BC
Di-isobutyl phthalate(DIBP)			ND	d.	
CAS #:84-69-5			N.D.		
Dibutyl phthalate(DBP)			N.D.		
CAS #:84-74-2	RCIC		N.D.	BETC	
Benzylbutyl phthalate(BBP)			N.D.		
CAS #:85-68-7		ncT(N.D.		
Bis(2-ethyl(hexyl) phthalate)(DEHP)		D-	ND	2	
CAS #:117-81-7			N.D.	CTC	

Note:

- -MDL = Method Detection Limit
- -N.D. = Not Detected (<MDL)
- -mg/kg = ppm = parts per million
- -" / "= Not conducted.
- -Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than $0.1 \mu g/cm^2$ with $50 cm^2$ sample surface area used.

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BUTC

-Positive = Presence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is equal to or greater than 0.13µg/cm² with 50cm² sample surface area used.

Remark:

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- The screening results are only used for reference.
- When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br Exclusively; When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.



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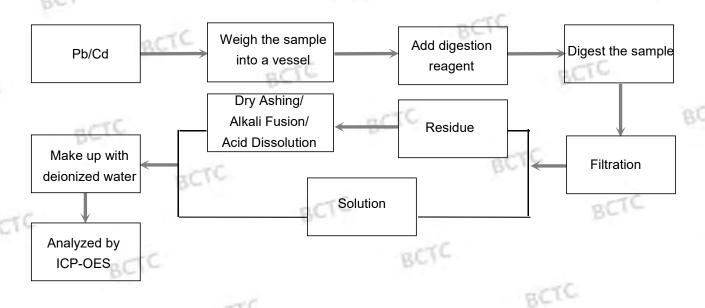
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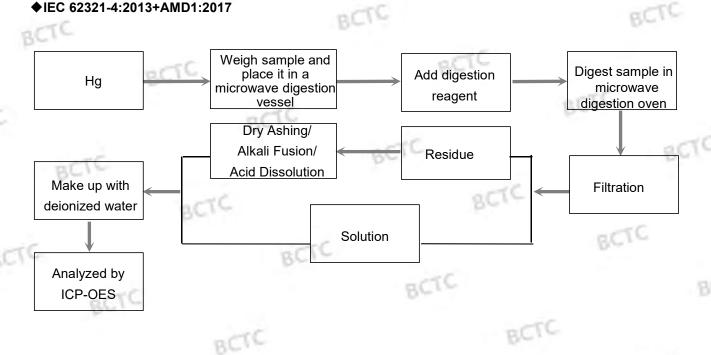
Test Process:

The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

♦IEC 62321-5:2013 Ed.1.0



♦IEC 62321-4:2013+AMD1:2017



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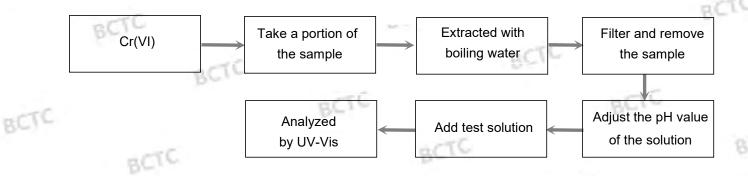


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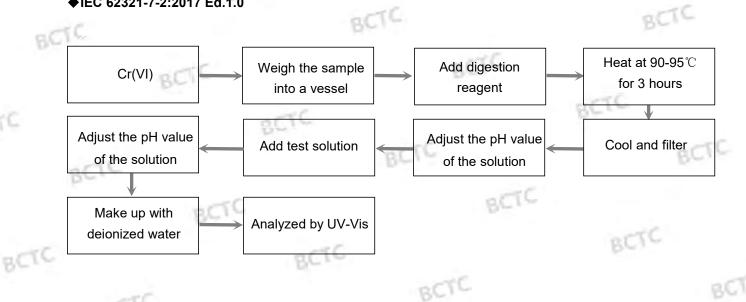
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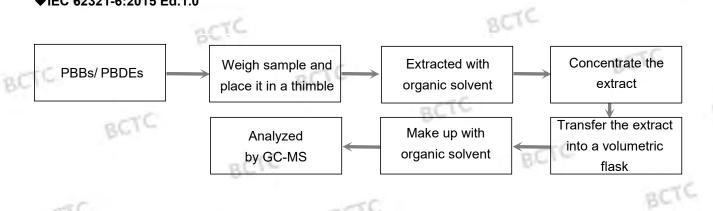
♦IEC 62321-7-1:2015 Ed.1.0



♦IEC 62321-7-2:2017 Ed.1.0



♦IEC 62321-6:2015 Ed.1.0



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Test Report

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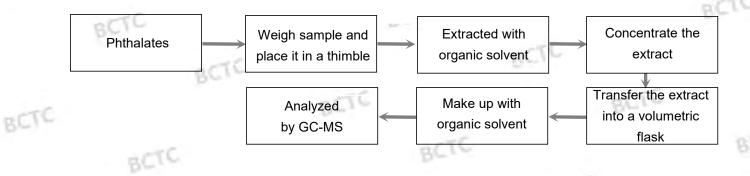
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BC

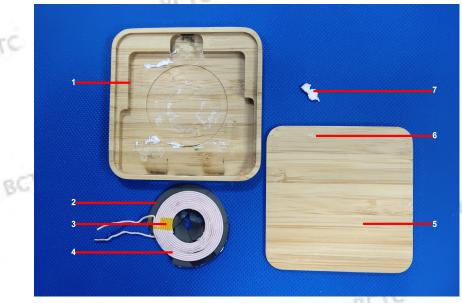
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♦IEC 62321-8:2017 Ed.1.0



Photograph of Sample





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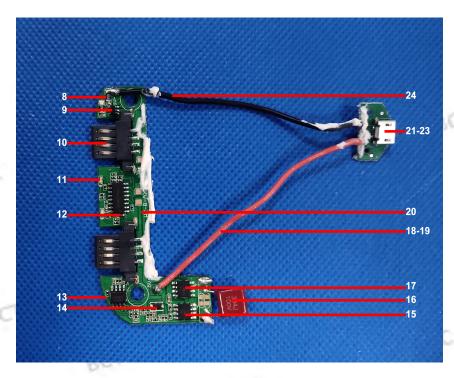
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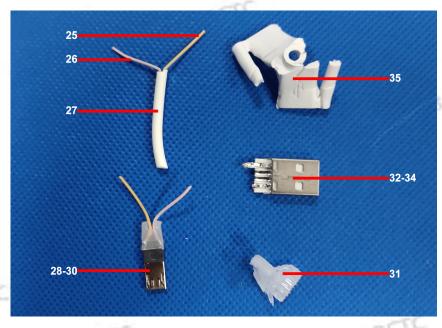
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Photo(s) of the tested component(s)





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