

Report No.: SEC180418007001E

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# TEST REPORT

Applicant: SHENZHEN XTAR ELECTRONICS CO.,LTD

Address: 5th Floor, No.77 Xinhe Rd, Shangmugu, Pinghu Area, Longgang

District, Shenzhen, Guangdong, China

The following sample(s) was/were submitted and identified on behalf of the client as:

Product name: Fast Charging Li-ion Battery Charger

Model: SC1

Trade mark:

Manufacturer: SHENZHEN XTAR ELECTRONICS CO.,LTD

Address: 5th Floor, No.77 Xinhe Rd, Shangmugu, Pinghu Area, Longgang

District, Shenzhen, Guangdong, China

Sample Received

Date:

Apr. 18, 2018

Testing Period: Apr. 18, 2018~ Apr. 24, 2018

Test Requirement: Conclusion:

As specified by client, to determine the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr6+), Polybrominated Biphenyls(PBBs), Polybrominated, Diphenyl Ethers(PBDEs) contents in the submitted sample in accordance with ROHS directive 2011/65/EU.

Test Result(s): Please refer to the following page(s);

Test Method: Please refer to the following page(s);

Tested by:

Reviewed by:

Date: 2018-04-24

Shenzhen NTEK Testing Technology Co., Ltd.

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# Test Result(s):

## 1. Shell

Sample No.	Sample Description	Tested Items	XRF Screening Test	Chemical Test (mg/kg)	Conclusion
3	2, 5, 5	Pb	≥ BL ≥	313	2 2
*	Black plastic	Cd	BL	- 1/ 1	- *
1	shell with white	Hg	BL	141 14	Pass
4 4	lettering	Cr(Cr(VI))	BL T	414	4 4
0		Br(PBBs&PBDEs)	IN (	N.D.	- 4
20	5 5 2	Pb	S BL	313	31 3
1	Silvery metal sheet	Cd	BL	- 4	- ' - '
2		Hg	BL	141 14	Pass
5 4		Cr(Cr(VI))	P BL	7 17	4 4
4		Br(PBBs&PBDEs)			
<u> </u>		Pb	BL	311 31	31 3
3	Silvery metal spring	Cd	BL	1	- 1
		Hg	BL	191 19	Pass
		Cr(Cr(VI))	P BL P	515	4 4
4	4 4	Br(PBBs&PBDEs)	t & &	- of o	- 4

# 2. PCBA

Sample No.	Sample Description	Tested Items	XRF Screening Test	Chemical Test (mg/kg)	Conclusion
*	* *	Pb	- BL	- 1/- 1	- *
114		Cd	BL	11 11	100
4	PCB	Hg	BL	- / -	Pass
4	15 15	Cr(Cr(VI))	BL	41 4	4
<u>-</u>		Br(PBBs&PBDEs)	BL S	313	2 4
×	* *	Pb	- BL	- 1	- *
100	Silvery metal	Cd	BL	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	14
5	shell of mini	Hg	BL	414	Pass
.0	USB slot	Cr(Cr(VI))	BL	41	4
1		Br(PBBs&PBDEs)	21 2	212	2 2
*	* *	Pb	⊢ BL	- 1	- *
6	Black plastic of mini USB slot	Cd	BL 8	201	100
		Hg	BL	212	Pass
		Cr(Cr(VI))	BL 0		.0
3" -		Br(PBBs&PBDEs)	≥ BL ≥	313	2 2



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+	* *	Pb	- BL	- 1	- +
	Silvery metal	Cd	BL	201 20	147
7	contact sheet of	Hg	BL	- 1 -	Pass
mini USB s	mini USB slot	Cr(Cr(VI))	BL	.QT .Q	.0
	2 2 2	Br(PBBs&PBDEs)	212	212	3
1	* *	Pb	⊢ BL ↓	- JL J	- +
	Magnetic core	Cd	BL	101	10
8	of L1	Hg	BL	7 / 7	Pass
1	inductance	Cr(Cr(VI))	BL A	QT Q	- 4
	S' S' 3	Br(PBBs&PBDEs)	313	313	2
4	AL AL	Pb	L BL	_ \L_ \	- 1
	De la	Cd	BL V	191 19	10
9	Coil of L1	Hg	BL P	9 1 9	Pass
4	inductance	Cr(Cr(VI))	BL	OT O	- ot
	511 511 3	Br(PBBs&PBDEs)	31 3	313	7,1
		Pb	BL		
.0	10 10	Cd	BL	No.	10
10	Chip	Hg	BL P	7 1 7	Pass
1		Cr(Cr(VI))	BL	- OT A	- 4
		Br(PBBs&PBDEs)	BL	<b>1</b>	11
.4_	7 7 7	Pb	BL	1	
.0	AT AT	Cd	BL	201 20	4
11	Black wire	Hg	₹ BL ₹	717	Pass
*	jacket	Cr(Cr(VI))	BL	- // /	- *
		Br(PBBs&PBDEs)	BL	1	Harry
1		Pb	BL	1	7
	Red wire jacket	Cd	BL	41 4	4
12		Hg	BL A	515	Pass
*		Cr(Cr(VI))	BL A	- At A	- 1
		Br(PBBs&PBDEs)	BL	~//	1
7		Pb	BL	1	
4	Core of wire	Cd Cd	BL Ø	201 20	.0
13		Hg	BL A	212	Pass
	* *	Cr(Cr(VI))	- BL	- N+ N	- 1
	19 19	Br(PBBs&PBDEs)	391 39	X1 X	1
,	Silvery metal sheet	Pb	BL	1	
.0		Cd	BL	Q1 Q	.0
14		Hg	BL BL	212	Pass
		Cr(Cr(VI))	- BL	- N+ N	- ' ~
	W W	Br(PBBs&PBDEs)	191	101	10

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*	* *	Pb	⊢ BL ∧	- 1	- *
114	1 1 1 1	Cd	BL	1	100
15	Tin solder	Hg	BL	7	Pass
.05	A A	Cr(Cr(VI))	BL Q	41 4	4
£ ,		Br(PBBs&PBDEs)	212	212	2 -
*	* *	Pb	L BL	- 1	- 4
14	A SA	Cd	BL	201	14
16	SMD resistor	Hg	BL	212	Pass
.0	15 15	Cr(Cr(VI))	BL	QT Q	.0
3	5 2 2	Br(PBBs&PBDEs)	S BL	212	2 2
*	* *	Pb	L BL	- <del>/</del> /	- 1
14	19 19 1	Cd	BL	3471 344	147
17	SMD capacitor	Hg	BL S	616	Pass
4		Cr(Cr(VI))	BL	GT Q	.0
3		Br(PBBs&PBDEs)	S BL	313	31 3
*	* *	Pb	L BL	+ d d	- 4
10	10 10	Cd	BL	141	A S
18	SMD diode	Hg	BL C	7/7	Pass
1	Set Set 3	Cr(Cr(VI))	BE 0	- OT O	- 0
300		Br(PBBs&PBDEs)	S'IN S'	N.D.	31
1	1 1 1 N	Pb	BL	1	- ' 1
14	A TO	Cd	BL	201 20	A CO
19	SMD audion	Hg	P BL P	7 1 7	Pass
ot		Cr(Cr(VI))	BL	- or o	4
		Br(PBBs&PBDEs)	BL S	1	31
1	SMD LED lamp	Pb	BL	1	- 1
10		Cd	BL	201 20	
20		Hg	→ BL →	717	Pass
at	at at	Cr(Cr(VI))	BL A	- at a	- 4
100	The state of	Br(PBBs&PBDEs)	BL	11	100



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Note: -N.D. = Not Detected (<MDL)

-MDL = Method Detection Limit -mg/kg = ppm = parts per million

-/=Not Regulated or Not Applicable

-BL = Under the XRF screening limit

-IN = Further chemical test will be conducted when the screening result inconclusive

-OL = Further chemical test will be conducted while the result is above the screening limit.

-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.10  $\mu$ g/cm2 with 50cm2 sample surface area used.

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

Because the storage condition and production date of the sample are not known, the test results of the sample of hexavalent chromium can only represent the state of hexavalent chromium in the samples tested.

Remark: 1.The screening results are only used for reference.

2. 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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#### **Test Method:**

when screening results exceed the XRF screening limit in IEC62321-3-1: 2013, further use of chemical methods are required to test the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs) and Polybrominated Diphenyl Ethers(PBDEs)

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

10	Limit of IEC 62321-3-1:2013 (unit:mg/kg)				
Element	Polymers	Metals	Composite material		
Ph.	BL≤(700-3σ) <x< td=""><td>BL≤(700-3σ) <x< td=""><td>BL≤(500-3σ)<x< td=""></x<></td></x<></td></x<>	BL≤(700-3σ) <x< td=""><td>BL≤(500-3σ)<x< td=""></x<></td></x<>	BL≤(500-3σ) <x< td=""></x<>		
₹ Pb	<(1300+3σ)≤OL	<(1300+3σ)≤OL	<(1500+3σ)≤OL		
64	BL≤(70-3σ) <x <<="" td=""><td>BL≤(70-3σ)<x <<="" td=""><td>LOD <x<(150+3σ)< td=""></x<(150+3σ)<></td></x></td></x>	BL≤(70-3σ) <x <<="" td=""><td>LOD <x<(150+3σ)< td=""></x<(150+3σ)<></td></x>	LOD <x<(150+3σ)< td=""></x<(150+3σ)<>		
Cd	(130+3σ) ≤OL	(130+3σ) ≤OL	≤OL		
l la	BL≤(700-3σ) <x< td=""><td>BL≤(700-3σ)<x< td=""><td>BL≤(500-3σ)<x< td=""></x<></td></x<></td></x<>	BL≤(700-3σ) <x< td=""><td>BL≤(500-3σ)<x< td=""></x<></td></x<>	BL≤(500-3σ) <x< td=""></x<>		
Hg	<(1300+3σ)≤OL	<(1300+3σ)≤OL	<(1500+3σ)≤OL		
Cr	BL≤(700-3σ)< X	BL≤(700-3σ)< X	BL≤(500-3σ)< X		
Br	BL≤(300-3σ)< X	4 10 0	BL≤(250-3σ)< X		

#### 2.Chemical Test

Test item	Test method	Test instrument	MDL	Limit
Lead(Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES	10 mg/kg	1000 mg/kg
Cadmium(Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES	10mg/kg	100 mg/kg
Mercury(Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES	10mg/kg	1000 mg/kg
Hexavalent	IEC62321-7-1:2015 Ed.1.0	LIVANIA	0.10 μg/cm <sup>2</sup>	1000 mg/kg
Chromium(Cr VI)	IEC 62321-7-2:2017 Ed.1.0	UV-Vis	10mg/kg	
PBBs	IEC 62321-6:2015 Ed.1.0	GC-MS	100mg/kg	1000 mg/kg
PBDEs	IEC 62321-6:2015 Ed.1.0	GC-MS	100mg/kg	1000 mg/kg

Note: -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

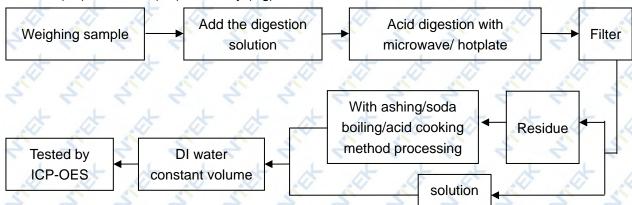
-LOD= Detection limit



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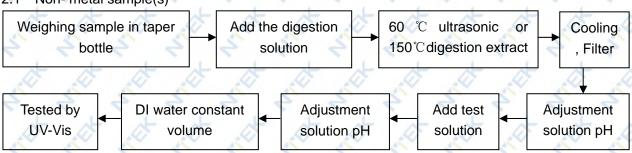
#### Test Flow:

1. Lead(Pb), Cadmium(Cd), Mercury (Hg)

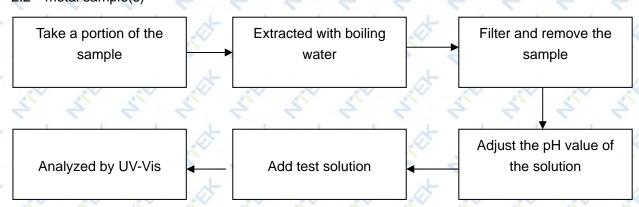


## 2. Hexavalent Chromium(Cr VI)

#### 2.1 Non- metal sample(s)



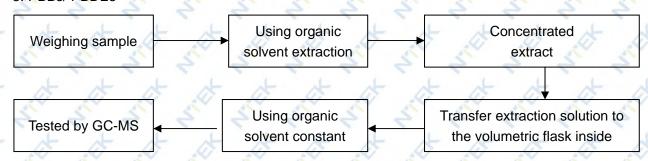
## 2.2 metal sample(s)



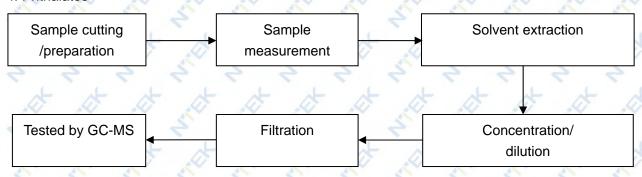


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#### 3. PBBs/ PBDEs



#### 4. Phthalates





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## Sample photo(s):



Fig.1



Fig.2



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Fig.3



Fig.4

# \*\*\*\*End of Report\*\*\*\*

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