



# Verification Report

Report No.: ZKS200700104-1

Date: Jul.17, 2020

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Applicant : Shenzhen Honcell Energy Co., Ltd.  
 Address : 612B, Bldg. A, Weidonglong Industrial Zone, Meilong Ave.194#, Longhua New District, Shenzhen, 518109, China.  
 Manufacturer : Shenzhen Honcell Energy Co., Ltd.  
 Address : 612B, Bldg. A, Weidonglong Industrial Zone, Meilong Ave.194#, Longhua New District, Shenzhen, 518109, China.  
 Sample Name : Lithium-ion Polymer Battery  
 Sample Model : HCP300812  
 Receiving Date : Jul.09, 2020  
 Testing Period : Jul.09, 2020 to Jul.17, 2020  
 Test Requested : Selected test(s) as requested by client  
 Test Method : Please refer to next page(s).  
 Test Results : Please refer to next page(s).

Conclusion	Test Requested	Conclusion
	The limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.	PASS



Tested by: Barry Peng

Reviewed by: Terry Gao

Approved by: Terry Gao

Date : Jul.17, 2020

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Dongguan ZRLK Testing Technology Co., Ltd.  
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## Verification Method

a) XRF scanning testing

Test method: IEC 62321-3-1:2013.

Element	Polymer	Metal	Composite materials	MDL (mg/kg)	
				Polymer	Other materials
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$	10	50
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$	10	50
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$	10	50
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$	10	50
Br	$BL \leq (300-3\sigma) < X$	/	$BL \leq (250-3\sigma) < X$	10	50

Remark: 1. BL — Below limit, 2. OL — Over limit, need to chemical test,  
 3. X — Inconclusive, need to chemical test, 4.  $3\sigma$  — The repeatability of the XRF,  
 5. MDL — Method detection limit, 6. LOD = MDL.

b) Chemical testing

Test items	Test methods	Instruments	MDL	Limit
Pb	IEC 62321-5:2013	ICP-OES	2 mg/kg	1000 mg/kg
Cd	IEC 62321-5:2013	ICP-OES	2 mg/kg	100 mg/kg
Hg	IEC 62321-4:2013/AMD 1:2017	ICP-OES	2 mg/kg	1000 mg/kg
Cr(VI)	IEC 62321-7-1:2015	UV-Vis	See Remark	Negative
	IEC 62321-7-2:2017	UV-Vis	10 mg/kg	1000 mg/kg
PBBs&	IEC 62321-6:2015	GC-MS	30 mg/kg	1000 mg/kg
PBDEs	IEC 62321-6:2015	GC-MS	30 mg/kg	1000 mg/kg
DIBP	IEC 62321-8:2017	GC-MS	30 mg/kg	1000 mg/kg
DBP	IEC 62321-8:2017	GC-MS	30 mg/kg	1000 mg/kg
BBP	IEC 62321-8:2017	GC-MS	30 mg/kg	1000 mg/kg
DEHP	IEC 62321-8:2017	GC-MS	30 mg/kg	1000 mg/kg

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## Verification Results

Part No.	Part description	Restricted substances	Results of XRF (mg/kg)	Results of chemical testing (mg/kg)	Conclusion
1	Yellow plastic	Pb	BL	---	Pass
		Cd	BL	---	
		Hg	BL	---	
		Cr [Cr(VI)]	BL	---	
		Br (PBBs&PBDEs)	BL	---	
		DIBP	---	ND	
		DBP	---	ND	
		BBP	---	ND	
		DEHP	---	ND	
2	FPC	Pb	BL	---	Pass
		Cd	LOD	---	
		Hg	BL	---	
		Cr [Cr(VI)]	BL	---	
		Br (PBBs&PBDEs)	BL	---	
		DIBP	---	ND	
		DBP	---	ND	
		BBP	---	ND	
		DEHP	---	ND	
3	PCB	Pb	BL	---	Pass
		Cd	LOD	---	
		Hg	BL	---	
		Cr [Cr(VI)]	BL	---	
		Br (PBBs&PBDEs)	BL	---	
		DIBP	---	ND	
		DBP	---	ND	
		BBP	---	ND	
		DEHP	---	ND	
4	Chip IC	Pb	BL	---	Pass
		Cd	LOD	---	
		Hg	BL	---	
		Cr [Cr(VI)]	BL	---	
		Br (PBBs&PBDEs)	BL	---	
		DIBP	---	ND	
		DBP	---	ND	
		BBP	---	ND	

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Part No.	Part description	Restricted substances	DEHP	---	ND	Conclusion
			Results of XRF (mg/kg)	Results of chemical testing (mg/kg)		
5	Chip resistor	Pb	BL	---	Pass	
		Cd	LOD	---		
		Hg	BL	---		
		Cr [Cr(VI)]	BL	---		
		Br (PBBs&PBDEs)	BL	---		
		DIBP	---	ND		
		DBP	---	ND		
		BBP	---	ND		
6	Chip capacitor	Pb	BL	---	Pass	
		Cd	LOD	---		
		Hg	BL	---		
		Cr [Cr(VI)]	BL	---		
		Br (PBBs&PBDEs)	BL	---		
		DIBP	---	ND		
		DBP	---	ND		
		BBP	---	ND		
7	Silvery metal	Pb	BL	---	Pass	
		Cd	BL	---		
		Hg	BL	---		
		Cr [Cr(VI)]	BL	---		
		Br (PBBs&PBDEs)	---	---		
		DIBP	---	---		
		DBP	---	---		
		BBP	---	---		
8	Aluminum plastic film	Pb	BL	---	Pass	
		Cd	BL	---		
		Hg	BL	---		
		Cr [Cr(VI)]	BL	---		
		Br (PBBs&PBDEs)	BL	---		
		DIBP	---	ND		
		DBP	---	ND		
		BBP	---	ND		
DEHP	---	ND				

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Part No.	Part description	Restricted substances	Results of XRF (mg/kg)	Results of chemical testing (mg/kg)	Conclusion
9	White plastic (Diaphragm)	Pb	BL	---	Pass
		Cd	BL	---	
		Hg	BL	---	
		Cr [Cr(VI)]	BL	---	
		Br (PBBs&PBDEs)	BL	---	
		DIBP	---	ND	
		DBP	---	ND	
		BBP	---	ND	
DEHP	---	ND			
10	Green plastic	Pb	BL	---	Pass
		Cd	BL	---	
		Hg	BL	---	
		Cr [Cr(VI)]	BL	---	
		Br (PBBs&PBDEs)	BL	---	
		DIBP	---	ND	
		DBP	---	ND	
		BBP	---	ND	
DEHP	---	ND			
11	Green plastic	Pb	BL	---	Pass
		Cd	BL	---	
		Hg	BL	---	
		Cr [Cr(VI)]	BL	---	
		Br (PBBs&PBDEs)	BL	---	
		DIBP	---	ND	
		DBP	---	ND	
		BBP	---	ND	
DEHP	---	ND			
12	Aluminum foil	Pb	BL	---	Pass
		Cd	BL	---	
		Hg	BL	---	
		Cr [Cr(VI)]	BL	---	
		Br (PBBs&PBDEs)	---	---	
		DIBP	---	---	
		DBP	---	---	
		BBP	---	---	
DEHP	---	---			

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Part No.	Part description	Restricted substances	Results of XRF (mg/kg)	Results of chemical testing (mg/kg)	Conclusion
13	Copper foil	Pb	BL	---	Pass
		Cd	BL	---	
		Hg	BL	---	
		Cr [Cr(VI)]	BL	---	
		Br (PBBs&PBDEs)	---	---	
		DIBP	---	---	
		DBP	---	---	
		BBP	---	---	
DEHP	---	---			
14	Electrolyte	Pb	BL	---	Pass
		Cd	BL	---	
		Hg	BL	---	
		Cr [Cr(VI)]	BL	---	
		Br (PBBs&PBDEs)	BL	---	
		DIBP	---	ND	
		DBP	---	ND	
		BBP	---	ND	
DEHP	---	ND			

### Remark:

1. There are the results on total Br while test items on restricted substances are PBBs and PBDEs. There is the result on total Cr while test item on restricted substances is Cr(VI).
2. Results are obtained by XRF for primary screening, and chemical testing by ICP-OES (for Pb, Cd, Hg), UV-VIS (for Cr(VI)) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration Exceeds the below warning value according to IEC 62321-3-1:2013.
3. ND = Not detected (<MDL), mg/kg = ppm = 0.0001%.
4. “---” = Not conducted.
5. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13  $\mu\text{g}/\text{cm}^2$ , the sample coating is considered to contain Cr(VI). The sample is negative for Cr(VI) if the Cr(VI) concentration is less than 0.10  $\mu\text{g}/\text{cm}^2$ , the sample is considered a non-Cr(VI) based coating. The result between 0.10 $\mu\text{g}/\text{cm}^2$  and 0.13 $\mu\text{g}/\text{cm}^2$  is considered to be inconclusive, unavoidable coating variations may influence the determination.

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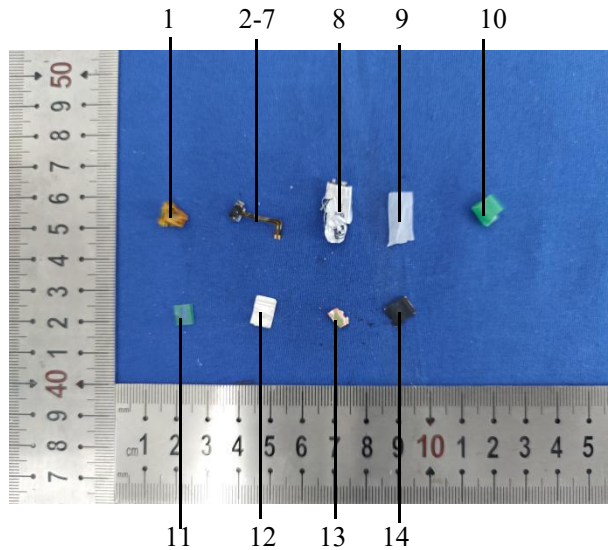
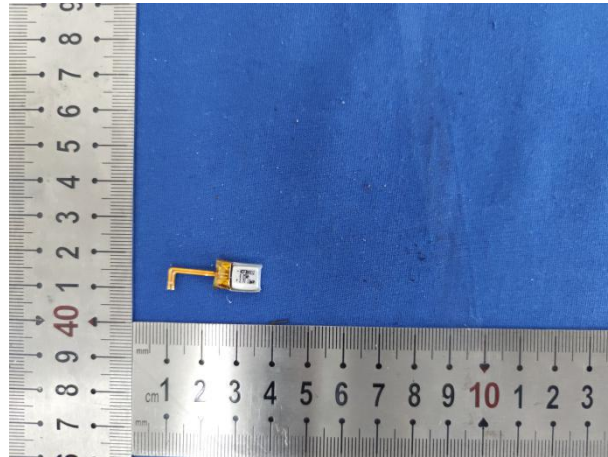
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## Sample Photo:



\*\*\*\*\*End or report\*\*\*\*\*

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