



TEST REPORT

Shenzhen SEM.Test Technology Co., Ltd.

1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C. (518101)
Report No.: STRD15108106R

Applicant : Shenzhen Honcell Energy Co., Ltd.
Address : 612, Bldg. A, Weidonglong Industrial Zone, Meilong Ave. 194#, Longhua New District, Shenzhen, 518109, China.
Manufacturer : Shenzhen Honcell Energy Co., Ltd.
Address : 612, Bldg. A, Weidonglong Industrial Zone, Meilong Ave. 194#, Longhua New District, Shenzhen, 518109, China.
Brand Name : N/A
Products : Lithium-ion Polymer Battery
Model/P.O NO. : HCP402025W
Receiving Date : 2015-10-30
Testing Period : 2015-10-30 to 2015-11-04

Test Requested:

- (1) For compliance with RoHS directive 2011/65/EU to determine the Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs in the submitted sample.

Test Method:

- (1) With reference to IEC 62321-3-1:2013, scanning by XRF Spectroscopy
- (2) Chemical test method:
 - With reference to IEC 62321-5:2013, determination of Lead, Cadmium, by ICP
 - With reference to IEC 62321-4:2013, determination of Mercury by ICP
 - With reference to IEC 62321:2008, determination of Hexavalent Chromium by UV-VIS
 - With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS

Test Results: Please refer to next page.

Conclusion:

The test result of submitted sample complies with the requirement of 2011/65/EU.

Signed for and on behalf of
Shenzhen SEM.Test Technology Co., Ltd.

Ailis Ma

Ailis Ma
PSQ Executive

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XRF Results:

No.	Name of the sample	Part name	Sample Description	Pb (ppm)	Cd (ppm)	Hg (ppm)	Cr (ppm)	Br (ppm)
1-1-1	Li-ion Battery	Tags	Yellow paper	BL	BL	BL	BL	BL
1-2-1		Shell	Black ink	BL	BL	BL	BL	BL
1-2-2			Silvery metal	BL	BL	BL	BL	N.A.
1-3-1		Aluminum case	Silver piece	BL	BL	BL	BL	N.A.
1-4-1		Wire	Red wire	BL	BL	BL	BL	BL
1-4-2			Black wire	BL	BL	BL	BL	BL
1-4-3			Silvery metal	BL	BL	BL	BL	N.A.
1-5-1		Positive pole	Silver piece	BL	BL	BL	BL	N.A.
1-6-1		Negative pole	Silver piece	BL	BL	BL	BL	N.A.
1-7-1		IC 8205	Black plastic	BL	BL	BL	BL	IN
1-7-2			Silvery metal	BL	BL	BL	BL	N.A.
1-8-1		IC	Black plastic	BL	BL	BL	BL	BL
1-8-2			Silvery metal	BL	BL	BL	BL	N.A.
1-9-1		Soldering tin	Silvery metal	BL	BL	BL	BL	N.A.
1-10-1		PCB	PCB	BL	BL	BL	BL	IN

NOTE:

- ppm=mg/kg=parts per million
- BL=Below limit
- N.A.=Not Applicable
- IN= Inconclusive, chemical analysis necessary

Testing results are only used for reference.

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Test Results:

Flame Retardants	MDL	Law Limit	Result(ppm)		
			1-7-1	1-10-1	
Polybrominated Biphenyls (Mono- Deca)(PBBs)	---	---	---	---	
Monobromobiphenyl	5ppm	1000ppm	N.D.	N.D.	
Dibromobiphenyl	5ppm		N.D.	N.D.	
Tribromobiphenyl	5ppm		N.D.	N.D.	
Tetrabromobiphenyl	5ppm		N.D.	N.D.	
Pentabromobiphenyl	5ppm		N.D.	N.D.	
Hexabromobiphenyl	5ppm		N.D.	N.D.	
Heptabromobiphenyl	5ppm		N.D.	N.D.	
Octabromobiphenyl	5ppm		N.D.	N.D.	
Nonabromobiphenyl	5ppm		N.D.	N.D.	
Decabromobiphenyl	5ppm		N.D.	N.D.	
Polybrominated Diphenylethers (Mono - Deca) (PBDEs)	---		---	---	---
Monobromobiphenyl ether	5ppm		1000ppm	N.D.	N.D.
Dibromobiphenyl ether	5ppm	N.D.		N.D.	
Tribromobiphenyl ether	5ppm	N.D.		N.D.	
Tetrabromobiphenyl ether	5ppm	N.D.		N.D.	
Pentabromobiphenyl ether	5ppm	N.D.		N.D.	
Hexabromobiphenyl ether	5ppm	N.D.		N.D.	
Heptabromobiphenyl ether	5ppm	N.D.		N.D.	
Octabromobiphenyl ether	5ppm	N.D.		N.D.	
Nonabromobiphenyl ether	5ppm	N.D.		N.D.	
Decabromobiphenyl ether	5ppm	N.D.		N.D.	

Note:

1. ppm=mg/kg
2. N.D.=Not Detected (Not detected is reported when the reading is less than detection limit value.)
3. Negative=absence of Cr(VI) in the metallic sample
Positive= presence of Cr(VI) in the metallic sample
(The tested sample should further verifie by boiling-water-extraction method if the spot test result

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cannot be confirmed)

Boiling-water-ectraction:

Negative=absence of Cr(VI) in the metallic sample

Positive=presence of Cr(VI) in the metallic sample

Boiling-water-extraction solution is equal or greater that 0.02mg/kg with 50cm² sample surface area.

4. #=Positive indicates the presence of Cr(VI) on the tested areas and result the regarded as not comply with RoHS requirement.

Negative indicates the presence of Cr(VI) on the tested areas and result the regarded as comply with RoHS requirement

5. MDL=Method Detection Limit

Remark:

(1) (a) It is the result on total Br while test item on restricted substances is PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr⁶⁺.

(b) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP(for Cd, Pb, Hg), UV-VIS(for CrVI) and GCMSD (for PBBs, PBDEs) is recommended to be performed. If the concentration exceeds the below warning value according to IEC 62321 Ed.1 111/95/2nd CDV (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma)$ $\leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma)$ $\leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$
Br	$BL \leq (300-3\sigma) < X$	---	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

(c) OL=Over Limit, BL=Below Limit. LOD=limit of Detection, ---=not conducted.

(d) The XRF screening test for RoHS elements- The reading may be different to the actual content in the sample be of non-uniformity composition.

(2) (a)mg/kg=ppm=0.0001%, N.D.=not detected(<MDL),

(b)Unit and Method Detection Limit(MDL) in wet chemical test.

Test Items	Pb	Cd	Hg
Units	Mg/kg	Mg/kg	Mg/kg
MDL	2	2	2

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The MDL for single compound of PBBs & PBDEs is 5mg/kg and MDL of Cr⁶⁺ for polymer & composite sample is 2mg/kg.

(c) According to IEC 62321:2008 Ed.1 111/95/2nd CDV, result on Cr⁶⁺ for metal sample is shown as Positive/Negative.

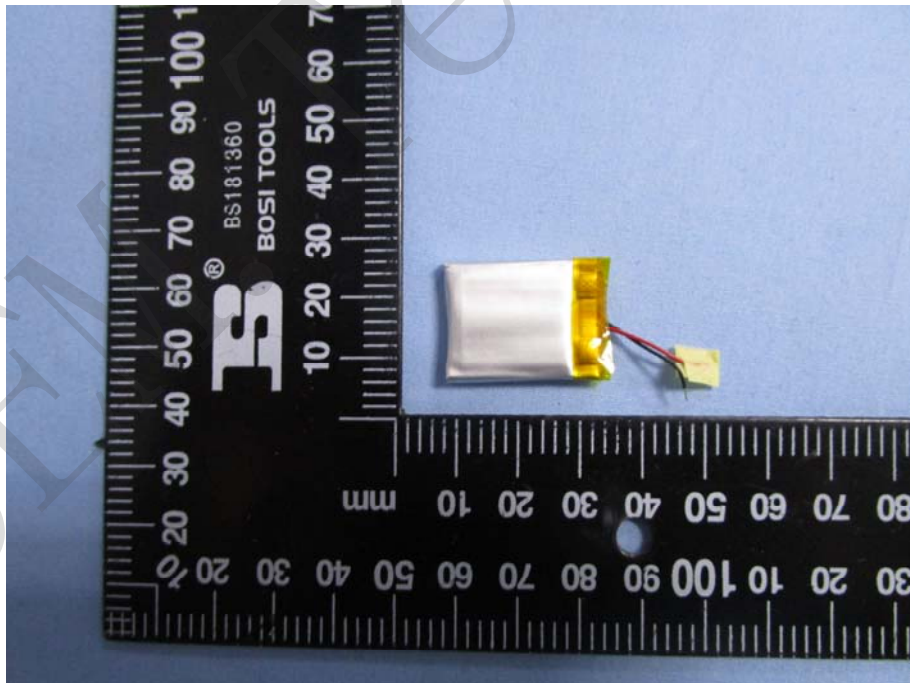
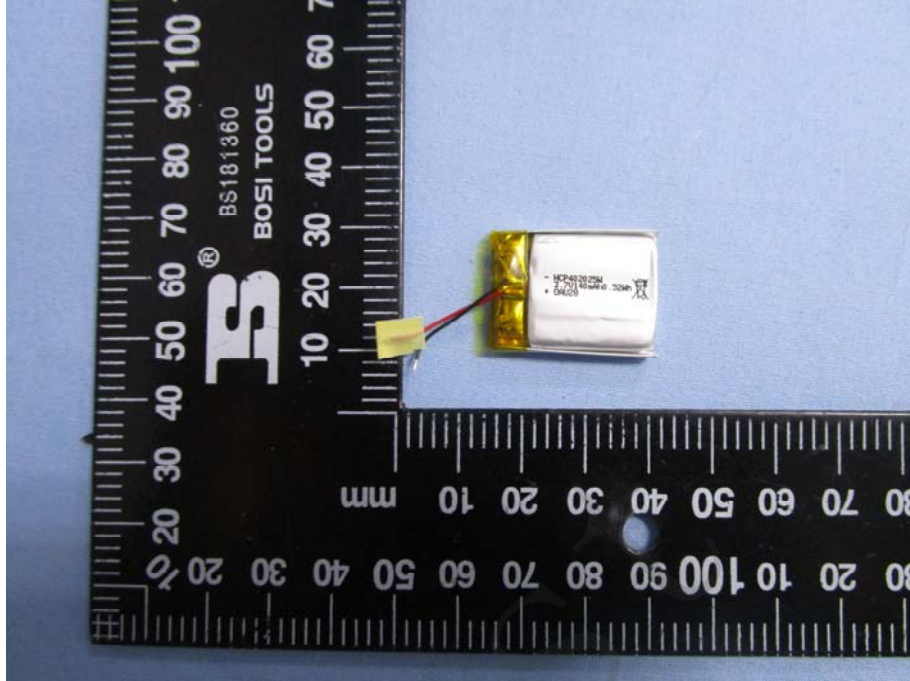
Negative=Absence of Cr⁶⁺ coating, Positive= Persence of Cr⁶⁺ coating.

(d)According to 2005/717/EC, DecaBDE is exempt.

SEM. Test

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PHOTOS:



*****End of Report *****

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