



惠州基安比新能源有限公司
Huizhou Markyn New Energy Co., LTD.

锂电池UN38.3测试报告

Lithium Battery UN38.3 Test Report

Sample Description

& Model Li Polymer Cell GMB283048

Applicant Huizhou Markyn New Energy Co. Ltd.

Manufacturer Huizhou Markyn New Energy Co. Ltd.



1. SAMPLES DESCRIPTION

Sample Name	Polymer Li-ion Cell	Model	GMB283048		
Manufacturer	Huizhou Markyn New Energy Co. Ltd.				
Nominal Voltage	3.6V	Capacity	300mAh	Limiting Charge Voltage	4.24
Charge Current	160mA	Maximum Continuous Current	160mA	End Charge Current	160mA
Cutoff Voltage	3.04	Maximum + Charge Current	300mA	Self	Digital Protection
Cell Number	1PC-	Cell Model	GMB283048	Capacity	300mAh
Manufacturer Code	GMB				
Chemical Composition	LiCoO ₂				
Client Code	2016.4.12	Initial Code	2016.4.1:		

II REFERENCE METHOD

Reference Method: National Commission on Standards (International) * Dangerous Goods Manual * (Electrical) Criteria
 (-G., C.10.11.1.1) (-G., C.10.11.1.2)

III TEST ITEM

- Thermal Simulation
 - Thermal Test
 - Insertion
 - Shock
0. Eternal Short & Impact
 3. Crush
 6.7. or " + Charge

IV CONCLUSION

Test Item	Sample No.	Result	Criteria
Thermal Simulation	N19N10	#N38.3	P, --
Thermal Test			P, --
Insertion			P, --
Shock			P, --
Eternal Short & Impact			P, --
Crush	N119N10		P, --
or " + Charge	N209N2: C09C14		P, --

The sample is in compliance with the #N Manual of (Electrical) Criteria for 888 Series.

Prepared by: _____ Checked by: _____ Reported by: _____

Issue Date: 2016/4/1:





Notes:

N1~N10,N16~N19:Cells at first cycle in fully charged states;

N11~N15:Cells at first cycle at 50% of the design rated capacity;

N20~N29:Cells after 50 cycles in fully discharged states;

C1~C4:Cells after 50 cycles ending in fully charged states;

C5~C14:Cells after 50 cycles ending in fully discharged states;

V、PHOTO OF THE SAMPLE



Authenticate the photo on original report only



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T.3 Vibration

Cells and batteries are firmly secured to the platform of the vibration machine without distorting the cells in such a manner as to faithfully transmit the vibration. The vibration shall be a sinusoidal waveform with a logarithmic sweep between 7Hz and 200Hz and back to 7Hz traversed in 15 minutes. This cycle shall be repeated 12 times a total of 3 hours for each of three mutually perpendicular mounting positions of the cell .One of the directions of vibration must be perpendicular to the terminal face

The logarithmic frequency sweep shall differ for cells and batteries with a gross mass of not more than 12 kg(cells and small batteries),and for batteries with a gross mass of more than 12 kg(large batteries).

For cells and small batteries from 7Hz a peak acceleration of 1gn is maintained until 18Hz is reached. The amplitude is then maintained at 0.8mm(1.6mm total excursion) and the frequency increased until a peak acceleration of 8 gn occurs (approximately 50 Hz) .

A peak acceleration of 8 gn is then maintained until the frequency is increased to 200Hz.

For large batteries from 7Hz to a peak acceleration of 1 gn is maintained until 18Hz is reached. The amplitude is then maintained at 0.8mm (1.6mm total excursion) and the frequency increased until a peak acceleration of 2 gn occurs (approximately 25Hz) .A peak acceleration of 2 gn is then maintained until the frequency is increased to 200Hz.

Cells and batteries meet this requirement if there is no leakage, no disassembly, no rupture and fire during the test and if the open circuit voltage of each test cell or battery directly after testing in its third perpendicular mounting position is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not application to test cells and batteries at fully discharged states.

T.4 Shock

Test cells and batteries shall be secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each test battery. Each cell or battery shall be subjected to a half-sine shock of peak acceleration of 150 gn and pulse duration of 6 milliseconds. Each cell or battery shall be subjected to three shocks in the direction followed by three shocks in the negative direction of three mutually perpendicular mounting positions of the cell or battery for a total of 18 shocks.

However ,large cells and large batteries shall be subjected to a half- sine shock of peak acceleration of 50 gn and pulse duration of 11 milliseconds. Each cell or battery is subjected to three shocks in the positive direction followed by three shocks in the negative direction of each of three mutually perpendicular mounting position of the cell for a total of 18 shocks.

Cells and batteries meet this requirement if there no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test and batteries at fully discharged states.



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IX. DATA

1. Altitude simulation

NO.	Pre-test		After test		Mass loss(%)	Voltage loss (%)	Whether leakage, Venting, disassembly, Rupture, fire(Y/N)
	Mass (g)	Voltage (V)	Mass (g)	Voltage (V)			
N1	8.518	3.83	8.518	3.83	0.000	0.000	N
N2	8.505	3.86	8.505	3.84	0.000	0.518	N
N3	8.522	3.80	8.522	3.80	0.000	0.000	N
N4	8.512	3.81	8.512	3.81	0.000	0.000	N
N5	8.516	3.82	8.516	3.82	0.000	0.000	N
N6	8.502	3.90	8.502	3.90	0.000	0.000	N
N7	8.522	3.89	8.522	3.88	0.000	0.257	N
N8	8.515	3.88	8.515	3.88	0.000	0.000	N
N9	8.526	3.81	8.526	3.81	0.000	0.000	N
N10	8.512	3.80	8.512	3.80	0.000	0.000	N

2. Thermal test

NO.	Pre-test		After test		Mass loss(%)	Voltage loss (%)	Whether leakage, Venting, disassembly, Rupture, fire(Y/N)
	Mass (g)	Voltage (V)	Mass (g)	Voltage (V)			
N1	8.518	3.83	8.518	3.83	0.000	0.000	N
N2	8.505	3.86	8.505	3.84	0.000	0.518	N
N3	8.522	3.80	8.522	3.80	0.000	0.000	N
N4	8.512	3.81	8.512	3.81	0.000	0.000	N
N5	8.516	3.82	8.516	3.82	0.000	0.000	N
N6	8.502	3.90	8.502	3.90	0.000	0.000	N
N7	8.522	3.89	8.522	3.88	0.000	0.257	N
N8	8.515	3.88	8.515	3.88	0.000	0.000	N
N9	8.526	3.81	8.526	3.81	0.000	0.000	N
N10	8.512	3.80	8.512	3.80	0.000	0.000	N



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5. External short circuit

NO.	Peak temperature (°C)	Whether disassembly, rupture, fire (Y/N)
N1	56	N
N2	59	N
N3	57	N
N4	58	N
N5	56	N
N6	58	N
N7	59	N
N8	57	N
N9	56	N
N10	58	N



7. Forced discharge

NO.	Whether disassembly, fire (Y/N)
N20	N
N21	N
N22	N
N23	N
N24	N
N25	N
N26	N
N27	N
N28	N
N29	N
C5	N
C6	N
C7	N
C8	N
C9	N
C10	N
C11	N
C12	N
C13	N
C14	N

*****End of report*****