



URS PRODUCTS & TESTING PVT. LTD.

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CIN: U21014UP1987PTC008956

SUMMARY OF TEST REPORT

TEST REPORT NO:URS/TEE/EID/17-18/321

DATED:06/12/2017

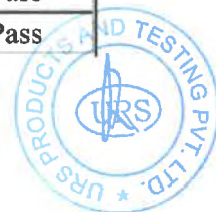
(Number of pages in test report: Page no. 1 to 47)

TEST FORMAT AS PER 16046:2015/IEC 62133:2012

1. Name of Manufacturer: **SHREE SHREE ENERGY COMPANY**
2. Product:Lithium-Ion Battery Pack
3. Model(s): Lead Model: BL2600C1865003S1PGQG
Series Model: GS-1907
4. Model differences provided (if applicable):Yes
5. Model differences verified as per MEITY Guidelines for series formulation:Yes
6. Test Results:See below

S No.	TEST REQUIREMENT	CLAUSE	VERDICT
1.	Parameter measurement tolerances	4.0	Pass
2.	Insulation and wiring	5.2	Pass
3.	Venting	5.3	Pass
4.	Temperature/Current management	5.4	Pass
5.	Terminal contacts	5.5	Pass
6.	Assembly of cells into batteries	5.6	Pass
7.	Quality plan	5.7	Pass
8.	Type test conditions	6.0	Pass
9.	Charging procedure for test purposes	7.1	N/A
10.	Intended use	7.2	N/A
11.	Reasonably foreseeable misuse	7.3	N/A
12.	Charging procedure for test purposes	8.1	Pass
13.	Intended use	8.2	Pass
14.	Reasonably foreseeable misuse	8.3	Pass
15.	Information for Safety	9.0	Pass
16.	Cell marking	10.1	Pass
17.	Battery marking	10.2	Pass
18.	Other Information	10.3	Pass
19.	Packaging	11.0	Pass

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20.	Charging range of secondary lithium ion cells for safe use	Annex A	Pass
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General Information:

The conformity certificates of critical components are verified to ensure complete testing of apparatus under test and details regarding harmonized IEC standards (where IEC standards are not available) are also provided in the list of critical component.

CONCLUSION:

1) Sample meets all relevant requirements of IS 16046:2015/IEC 62133:2012 YES

2) Sample fails to meet the following test requirements: N/A

(Signature of Authorized person with Stamp)





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Manufacturer	MOTOROLA SOLUTIONS COMPANY 100 BROADVIEW AVE. 6TH FLOOR, CHICAGO, ILLINOIS 60611, USA TEL: +1 312 464 1000 FAX: +1 312 464 1001		
Test item:	Lithium-Ion Battery Pack		
Identification	Lead Model:BL2600C1865003S1PGQG Series Model:GS-1907	Serial No.:	Nil
Receipt No.:	URS/TEE/SBLS/17-18/519	Date of receipt:	18/08/2017
Testing laboratory and its address:	URS PRODUCTS AND TESTING PRIVATE LIMITED F-3, Sector-6 Noida-201301		
Test specification:	IS 16046 : 2015 / IEC 62133:2012		
Test Result:	The test item passed the test specification(s)		
Other Aspects:	<p>- Equipment under test(EUT) is Lithium-Ion Battery Pack Lead Model " BL2600C1865003S1PGQG " has been tested as per IS 16046:2015/ IEC 62133:2012 complies to all the applicable parameters.</p> <p>- P=Pass, F=Fail, N/A=Not Applicable</p>		
This test report relates to the test sample submitted and list of documents attached.			

Tested by:	Approved by / Authorized Signatory:	Issued by:
Vivek Kumar Raja , Analyst	Mc Fakhre Alam , Manager Technical	Manoj Sharma , Head
Date: 06/12/2017	Date: 06/12/2017	Date: 06/12/2017



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Test Code	Description	Measurement/ testing	Total No. of tests	Total no. of applicable tests/ Req.	No. of tests/ Req. passed	Page No.
EL 2600	General Requirements	Parameter measurement tolerances(4)	01	01	01	7
EL 2601	General Requirements	General Safety Considerations(5)	07	02	02	8
EL 2602	General Requirements	Venting(5.3)	03	03	03	9
EL 2603	General Requirements	Temperature/voltage/current management(5.4)	04	04	04	10
EL 2604	General Requirements	Terminal Contact(5.5)	05	05	05	11
EL 2605	General Requirements	Assembly of cells into Batteries(5.6)	15	07	07	12
EL 2606	General Requirements	Quality Plan(5.7)	02	02	02	14
EL 2607	Electrical safety	Type test condition(6)	03	03	03	15
EL 2608	Electrical safety	Specific requirements and tests(Nickel Syatems)(7)	02	00	N/A	16
EL 2609	Electrical safety	Intended Use(7.2)	19	00	N/A	17
EL 2610	Electrical safety	Reasonably foreseeable misuse(7.3)	44	00	N/A	19
EL 2611	Electrical safety	Specific requirements and tests(Lithuim Systems)(8)	08	08	08	23
EL 2612	Electrical safety	Intended Use(8.2)	09	05	05	24
EL 2613	Electrical safety	Reasonably foreseeable misuse(8.3)	45	20	20	25
EL 2614	General Requirements	Information for Safety(9)	05	04	04	29
EL 2615	Marking Requirements	Markings(10)	03	01	01	30
EL 2616	Marking Requirements	Battery Markings(10.2)	03	03	03	31
EL 2617	Marking Requirements	Other Information(10.3)	03	03	03	32
EL 2618	Mechanical Properties	Packaging(11)	02	02	02	33
EL 2619	Electrical Safety	Charging range of secondary lithium ion cells for safe use(A)	Annex A	19	19	34

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.



19/12/17



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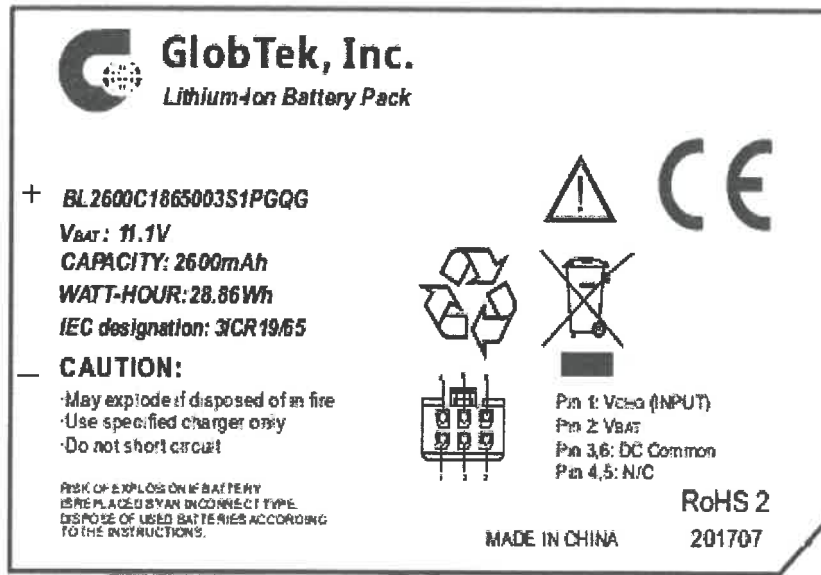
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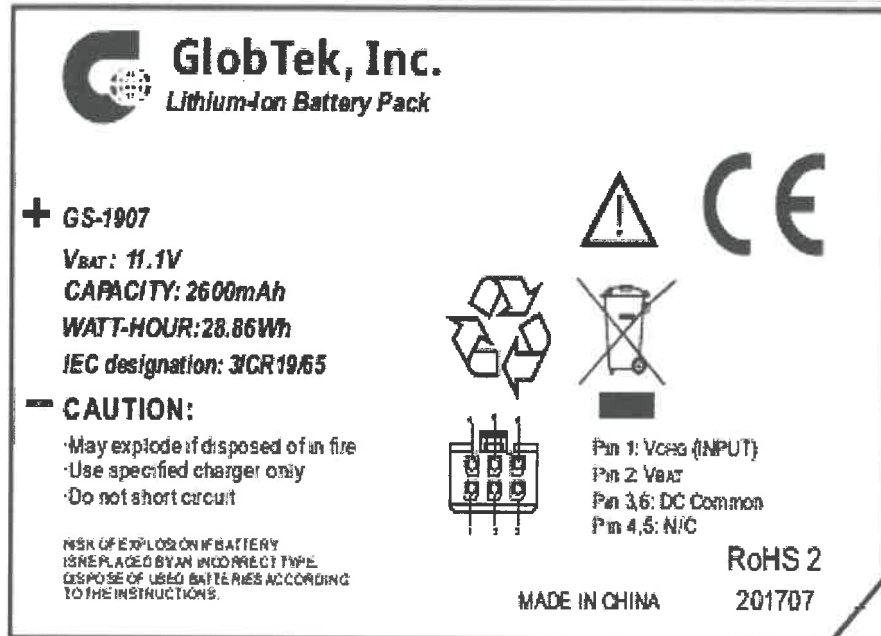
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Copy of marking label:



Marking Label of Lead Model



Marking Label of Series Model





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Table – List of Attachments

Attachment No.	Attachment Description	No. of pages in Attachment
Attachment-1	Photo document	45-47

General remarks:

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

Test item Particulars.....:

Classification Of Instalation and use	Lithium-Ion Battery Pack
Connection To the mains	Class III & used in the portable application
Recommended charging method declared by the manufacturer	Not directly connected to mains
Discharge current (0,2 It A)	CC/CV
Specified final voltage	0.52A
Specified charging period	12.6V
Specified charging rate	Cut off current 26mA
Specified final discharge voltage	520mA
Chemistry	9.0V
	<input type="checkbox"/> Nickel Systems
	<input checked="" type="checkbox"/> Lithium Systems

Recommended charging limit for lithium system.....:

Upper limit charging voltage per cell	4.2V
Maximum charging current	2600mA
Charging temperature upper limit	45°C
Charging temperature lower limit	0°C

Polymer cell electrolyte type

- ☐ gel polymer
☐ solid polymer ☒ NA

Possible test case verdicts:

- test case does not apply to the test object:	N/A
- test object does meet the requirement :	P (Pass)
- test object does not meet the requirement :	F (Fail)

Testing:

Date of receipt of test item:	18/08/2017
Date(s) of performance of tests:	23/08/2017 to 05/12/2017

Laboratory conditions

Ambient Temperature:	(15-35)°C
Ambient Humidity:	(45-75)%RH

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General product information:

1) Application details / Description of the product:

The Equipment under test (EUT) is Lithium-Ion Battery Pack Model: "BL2600C1865003S1PGQG" has been tested as per IS 16046:2015/IEC 62133:2012 complies to all the applicable parameters.

Equipment under test details mention below:

Test Item Lithium-Ion Battery Pack

Brand Name: G GlobTek, Inc. (Refer same as page no. 4 of marking label)

Model: Lead Model: BL2600C1865003S1PGQG, Series Model: GS-1907

Overall Size of Equipment: 55.16mm(W), 74.18mm(H), 23.24mm(T)

Mass of Equipment: 0.16kg(approx)

Rating: 11.1V, 2600mAh, 28.86Wh

(Copy of marking label page no. 4)

Charging Description:-

Model	Charging Voltage (Vdc)	Standard Charging Current (mA)	Maximum Charging Current (mA)	Discharging Current (mA)	End Discharge Voltage (Vdc)	Cut-off Current(mA)
BL2600C1865003S1PGQG	12.6	520	2600	520	9.0	26

Max. specified ambient temperature (°C): Charging Temperature(0°C ~ 45°C), Discharging Temperature(-20°C ~ 60°C)

2) Differences between the models:

Similarities:

- a) Same Nominal Voltage(11.1V)
- b) Same Cell Construction Design(Cylindrical Type)
- c) Same Type of Electrode/Electrolytes Used

Differences:

Only Model Name

Model Name	Voltage (V)	Capacity(mAh)
BL2600C1865003S1PGQG (Lead Model)	11.1	2600
GS-1907	11.1	2600

Model No. tested with-in the family series

BL2600C1865003S1PGQG (Worst Case)

3) Options:

The equipment was tested without any optional accessory installed. Hence, this report does not cover parameters that are influenced by the installation of optional accessory that might affect safety in the meaning of this standard.

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Tests relating to General Requirements

EL 2600 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4	Parameter measurement tolerances*	EL 2600-00	All controlled and measured values were within the tolerances.	P

*- Total number of Requirements to be observed / inspected =01
Total No of applicable Requirement =01
No of Requirements for which the sample passed =01
Total number of tests to be conducted =00
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



(Approving Authority)

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Tests relating to General Requirements

EL 2601 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5	General Safety Considerations*	EL 2601-00	See below	P
5.1	General*	EL 2601-01	The battery is safe and Continue to function in all respect of its intended use, the battery is safe and does not present significant Hazards under the condition of reasonably foreseeable misuse	P
5.2	Insulations and Wiring	EL 2601-02	See below	N/A
	The insulation resistance between the positive terminal and externally exposed metal surfaces of the battery (excluding electrical contact surfaces) is not less than 5 MΩ	EL 2601-03	No conductive part in the Outer case	N/A
	Insulation resistance (MΩ):		As above	N/A
	Internal wiring and insulation are sufficient to withstand maximum anticipated current, voltage and temperature requirements.	EL 2601-04	Internal wiring and insulation are used within their rating and are checked for correct application	N/A
	Orientation of wiring maintains adequate creepage and clearance distances between conductors	EL 2601-05	No hazards present	N/A
	Mechanical integrity of internal connections accommodates reasonably foreseeable misuse	EL 2601-06	No hazards present	N/A

*- Total number of Requirements to be observed / inspected =02
Total No of applicable Requirement =02
No of Requirements for which the sample passed =02
Total number of tests to be conducted =05
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2602 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5.3	Venting*	EL 2602-00	See below	P
5.3.1	Battery cases and cells incorporate a pressure relief mechanism or are constructed so that they relieve excessive internal pressure at a value and rate that will preclude rupture, explosion and self-ignition.	EL 2602-01	The open space near the terminal was considered as the pressure relief mechanism, which can release the pressure during the abnormal operation	P
5.3.2	Encapsulation used to support cells within an outer casing does not cause the battery to overheat during normal operation nor inhibit pressure relief.	EL 2602-02	No overheat during normal operation nor inhibit pressure relief	P

*- Total number of Requirements to be observed / inspected =01

Total No of applicable Requirement =01

No of Requirements for which the sample passed =01

Total number of tests to be conducted =02

Total No of applicable Tests =02

No. of tests for which the sample passed =02

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2603 – V2.0

CI.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5.4	Temperature/voltage/current management	EL 2603-00	See below	P
	Batteries are designed such that abnormal temperature rise conditions are prevented	EL 2603-01	Batteries are designed with abnormal temperature rise protection	P
	Batteries are designed to be within temperature, voltage and current limits specified by the cell manufacturer	EL 2603-02	Overcharge, over-discharge, over current and short circuit proof circuit used in the battery	P
	Batteries are provided with specifications and charging instructions for equipment manufacturers so that associated chargers are designed to maintain charging within the temperature, voltage and current limits specified	EL 2603-03	Satisfactory	P

*- Total number of Requirements to be observed / inspected =00
Total No of applicable Requirement =00
No of Requirements for which the sample passed =N/A
Total number of tests to be conducted =04
Total No of applicable Tests =04
No. of tests for which the sample passed =04

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Tests relating to General Requirements

EL 2604 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5.5	Terminal Contact*	EL 2604-00	See below	P
	Terminals have a clear polarity marking on the external surface of the battery*	EL2604-01	Clear marking provided on external surface of battery	P
	The size and shape of the terminal contacts ensure that they can carry the maximum anticipated current.*	EL2604-02	The terminal contacts are designed to carry the maximum anticipated current	P
	External terminal contact surfaces are formed from conductive materials with good mechanical strength and corrosion resistance.*	EL2604-03	No hazard present	P
	Terminal contacts are arranged to minimize the risk of short circuits.*	EL2604-04	No hazard present	P

*- Total number of Requirements to be observed / inspected =05
Total No of applicable Requirement =05
No of Requirements for which the sample passed =05
Total number of tests to be conducted =00
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

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Tests relating to General Requirements

EL 2605- V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5.6	Assembly of cells into Batteries*	EL 2605-00	See below	P
5.6.1	General*	EL 2605-01	See below	P
	If there is more than one battery housed in a single battery case, cells used in the assembly of each battery have closely matched capacities, be of the same design, be of the same chemistry and be from the same manufacturer.*	EL 2605-02	Assembly of cell used to same capacities, design, chemistry and manufacturer	P
	Each battery has an independent control and protection.*	EL 2605-03	Satisfactory	P
	Manufacturers of cells make recommendations about current, voltage and temperature limits so that the battery manufacturer/designer may ensure proper design and assembly.*	EL 2605-04	Battery is designed within the recommended cell specifications	P
	Batteries that are designed for the selective discharge of a portion of their series connected cells incorporate separate circuitry to prevent the cell reversal caused by uneven discharges.*	EL 2605-05	Batteries are not designed for selective discharge	P
	Protective circuit components are added as appropriate and consideration given to the end-device application.*	EL 2605-06	See list of critical component	P
	When testing a battery, the manufacturer of the battery provides a test report confirming the compliance according to this standard.*	EL 2605-07	Certificate of component cell and UN38.3 test reports were evaluated	P
5.6.2	Design recommendation for lithium systems only.*	EL 2605-08	See below	N/A
	For the battery consisting of a single cell or a single cellblock: - Charging voltage of the cell does not exceed the upper limit of the charging voltage specified in Clause 8.1.2, Table 4; or*	EL 2605-09	Battery management system has the upper limit charging voltage protection of 4.2Vdc per cell	N/A
	- Charging voltage of the cell does not exceed the different upper limit of the charging voltage determined through Clause 8.1.2, NOTE 1.*	EL 2605-10	As above	N/A
	For the battery consisting of series-connected plural single cells or series-connected plural cellblocks: - The voltages of any one of the single cells or single cellblocks does not exceed the upper limit of the charging voltage, specified in Clause 8.1.2, Table 4, by monitoring the voltage of every single	EL 2605-11	As above	N/A

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cell or the single cellblocks; or*			
- The voltages of any one of the single cells or single cellblocks does not exceed the different upper limit of the charging voltage, determined through Clause 8.1.2, NOTE 1, by monitoring the voltage of every single cell or the single cellblocks*	EL 2605-12	As above	N/A
For the battery consisting of series-connected plural single cells or series-connected plural cellblocks: - Charging is stopped when the upper limit of the charging voltage, specified in Clause 8.1.2, Table 4, is exceeded for any one of the single cells or single cellblocks by measuring the voltage of every single cell or the single cellblocks; or*	EL 2605-13	As above	N/A
- Charging is stopped when the upper limit of the different charging voltage, determined through Clause 8.1.2, NOTE 1, is exceeded for any one of the single cells or single cellblocks by measuring the voltage of every single cell or the single cellblocks*	EL 2605-14	As above	N/A

*- Total number of Requirements to be observed / inspected =15
Total No of applicable Requirement =07
No of Requirements for which the sample passed =07
Total number of tests to be conducted =00
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2606 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5.7	Quality Plan*	EL 2606-00	See below	P
	The manufacturer prepares and implements a quality plan that defines procedures for the inspection of materials, components, cells and batteries and which covers the whole process of producing each type of cell or battery.*	EL 2606-01	The manufactures provide an ISO 9001 Certificate for reference	P

*- Total number of Requirements to be observed / inspected =02
Total No of applicable Requirement =02
No of Requirements for which the sample passed =02
Total number of tests to be conducted =00
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2607 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
6	Type test condition*	EL 2607-00	See below	P
6.1	Tests were made with the number of cells or batteries specified in Table 1 for nickel-cadmium and nickel-metal hydride systems and Table 2 for lithium systems, using cells or batteries that are not more than six months old.*	EL 2607-01	Provided Samples are complied within 6 month from the manufacturing date	P
6.2	Unless noted otherwise in the test methods, testing was conducted in an ambient of 20°C±5°C.*	EL 2607-02	Considered and evaluated for the batteries	P

*- Total number of Requirements to be observed / inspected =03
Total No of applicable Requirement =03
No of Requirements for which the sample passed =03
Total number of tests to be conducted =00
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2608 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
7	Specific requirements and tests(Nickel Syatems)*	EL 2608-00	Considered only for nickel system	N/A
7.1	Charging Procedure for test purposes	EL 2608-01	See above	N/A

*- Total number of Requirements to be observed / inspected =01
Total No of applicable Requirement =00
No of Requirements for which the sample passed =N/A
Total number of tests to be conducted =00
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

Certificate: It is certified that the above tests were performed and found to be not applicable in the requirement tested.



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Tests relating to General Requirements

EL 2609 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
7.2	Intended Use*	EL 2609-00	See below	N/A
7.2.1	Continuous Low Rate Charging*	EL 2609-01	See below	N/A
	a) Requirement		This is not a Nickel system	N/A
	A Continuous Low Rate Charge shall not cause fire or explosion*	EL 2609-02	As above	N/A
	b) Test		As above	N/A
	Fully charged cells are subjected for 28 days to a charge as specified by the manufacturer.	EL 2609-03	As above	N/A
	c) Acceptance criteria:		As above	N/A
	Results: no fire, no explosion*	EL 2609-04	As above	N/A
7.2.2	Vibration	EL 2609-05	See below	N/A
	a) Requirements		This is not a Nickel system	N/A
	Vibration encountered during transportation shall not cause leakage, fire or explosion*	EL 2609-06	As above	N/A
	b) Test		As above	N/A
	The cells or batteries are subjected to a vibration sequence with a simple harmonic motion is applied to cells/batteries with an amplitude of 0.76 mm and a total maximum excursion of 1.52 mm. The frequency was varied at the rate of 1 Hz/min between the limits of 10 Hz and 55 Hz. The entire range of frequencies (10 Hz to 55 Hz) and return (55 Hz to 10 Hz) was traversed in 90 min±5 min for each mounting position	EL 2609-07	As above	N/A
	The vibration was applied in each of three mutually perpendicular directions. Then rest cell for 1 hour	EL 2609-08	As above	N/A
	c) Acceptance criteria:		As above	N/A
	Results: no fire, no explosion, no leakage*	EL 2609-09	As above	N/A
7.2.3	Moulded case stress at high ambient temperature(batteries)	EL 2609-10	See below	N/A
	a) Requirements:		This is not a Nickel system	N/A
	Internal components of batteries shall not be exposed to during at high temperature*	EL 2609-11	As above	N/A
	b) Test:		As above	N/A
	Fully charged batteries were placed in an air-circulating oven at a temperature of 70°C±2°C for 7 hours. Afterwards, they are removed and allowed to return to room temperature.	EL 2609-12	As above	N/A
	c) Acceptance criteria:		As above	N/A

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	Results: no physical distortion of the battery casing resulting in exposure if internal components.*	EL 2609-13	As above	N/A
7.2.4	Temperature cycling	EL 2609-14	See below	N/A
	a) Requirements:		This is not a Nickel system	N/A
	Repeated exposure to high and low temperature shall not cause fire or explosion*	EL 2609-15	As above	N/A
	b)Test:		As above	N/A
	Fully charged cells or batteries were subjected to temperature cycling (-20C, +75C) in forced draught chambers according to the procedure outlined in Fig. 1 4.2.4.	EL 2609-16	As above	N/A
	After the fifth cycle, the cells or batteries were stored for 24 hrs prior to examination.	EL 2609-17	As above	N/A
	c) Acceptance criteria:		As above	N/A
	Results: No fire, no explosion, no leakage*	EL 2609-18	As above	N/A

*- Total number of Requirements to be observed / inspected =10
Total No of applicable Requirement =00
No of Requirements for which the sample passed =N/A
Total number of tests to be conducted =09
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

Certificate: It is certified that the above tests were performed and found to be not applicable in the requirement tested.



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Tests relating to General Requirements

EL 2610 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
7.3	Reasonably foreseeable misuse*	EL 2610-00	See below	N/A
7.3.1	Incorrect installation (cells)*	EL 2610-01	See below	N/A
	a)Requirements:		This is not a Nickel system	N/A
	The incorrect installation of a single cell battery in a multi-cell application shall not cause fire or explosion.*	EL 2610-02	As above	N/A
	b) Test:		As above	N/A
	Four fully charged cells of the same brand, type, size and age were connected in series with one of the four cells reversed. The assembly was connected across a 1-ohm resistor until the vent opens or until the temperature of the reversed cell returns to ambient temperature.	EL 2610-03	As above	N/A
	Alternatively, a stabilized dc power supply was used to simulate the conditions imposed on the reversed cell.	EL 2610-04	As above	N/A
	c)Acceptance criteria:		As above	N/A
	Results:no fire, no explosion*	EL 2610-05	As above	N/A
7.3.2	External Short circuit	EL 2610-06	See below	N/A
	a)Requirements:		This is not a Nickel system	N/A
	Short-circuiting of positive and negative terminal shall not cause fire or explosion.*	EL 2610-07	As above	N/A
	b)Test:		As above	N/A
	Fully charged cells or batteries were subjected to a short circuit test at 20°C±5°C.	EL 2610-08	As above	N/A
	Fully charged cells or batteries were subjected to a short circuit test at 55°C±5°C.	EL 2610-09	As above	N/A
	The external resistance did not exceed 80mΩ ± 20mΩ	EL 2610-10	As above	N/A
	The cells or batteries were tested for 24 h or until the case temperature declined by 20% of the maximum temperature rise	EL 2610-11	As above	N/A
	c)Acceptance criteria:		As above	N/A
	Results:no fire, no explosion.*	EL 2610-12	As above	N/A
7.3.3	Free fall	EL 2610-13	See below	N/A
	a)Requirements:		This is not a Nickel system	N/A
	Dropping of a cell or battery shall not cause fire or explosion*	EL 2610-14	As above	N/A
	b)Test:		As above	N/A

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	Fully charged cells or battery is dropped three times from a height of 1 m onto concrete floor so as to obtain impacts in random orientations. Then rest for minimum one hour.	EL 2610-15	As above	N/A
	c)Acceptance criteria:		As above	N/A
	Results:no fire, no explosion*	EL 2610-16	As above	N/A
7.3.4	Mechanical shock (crash hazard)	EL 2610-17	See below	N/A
	a)Requirements:		This is not a Nickel system	N/A
	Shocks encountered during handling or transportation shall not cause fire, explosion or leakage*	EL 2610-18	As above	N/A
	b) Test:		As above	N/A
	Fully charged cells or batteries were subjected to a total of three shocks of equal magnitude applied in each of three mutually perpendicular directions. At least on of the directions was perpendicular to a flat face. During the initial 3 milliseconds, the minimum average acceleration was 75 gn. The peak acceleration was between 125 gn and 175 gn. Then rest for minimum one hour.	EL 2610-19	As above	N/A
	c) Acceptance criteria		As above	N/A
	Results:no fire, no explosion, no leakage*	EL 2610-20	As above	N/A
7.3.5	Thermal abuse (cells)	EL 2610-21	See below	N/A
	a)Requirements		This is not a Nickel system	N/A
	An extremely high temperature shall not fire or explosion*	EL 2610-22	As above	N/A
	b)Test:		As above	N/A
	Fully charged cells were placed in a gravity or circulating air-convection oven. The oven temperature was raised at a rate of 5°C/min±2°C/min to a temperature of 130°C±2°C. The cell remained at that temperature for 10 minutes before the test was discontinued.	EL 2610-23	As above	N/A
	c)Acceptance criteria:		As above	N/A
	Results:no fire, no explosion*	EL 2610-24	As above	N/A
7.3.6	Crushing of cells	EL 2610-25	See below	N/A
	a)Requirements		This is not a Nickel system	N/A
	Severe crushing of a cell shall not cause fire or explosion.*	EL 2610-26	As above	N/A
	b)Test:		As above	N/A
	Fully charged cells were crushed between two flat surfaces with a	EL 2610-27	As above	N/A

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	hydraulic ram exerting a force of 13kN ± 1 kN			
	Once maximum force has been applied , or an abrupt voltage drop of one-third of the original voltage has been obtained, the force is released.	EL 2610-28	As above	N/A
	A cylindrical or prismatic cell was crushed with its longitudinal axis parallel to the flat surfaces of the crushing apparatus	EL 2610-29	As above	N/A
	A second set of prismatic cells was tested, rotated 90 degrees around their longitudinal axis compared to the first set.	EL 2610-30	As above	N/A
	c)Acceptance criteria:		As above	N/A
	Results:no fire, no explosion.*	EL 2610-31	As above	N/A
7.3.7	Low pressure (cells)	EL 2610-32	See below	N/A
	a)Requirements:		This is not a Nickel system	N/A
	Low pressure shall not cause fire or explosion*	EL 2610-33	As above	N/A
	b)Test:		As above	N/A
	Fully charged cells are placed in a vacuum chamber , in an ambient temperature of 20°C \pm 5°C whose internal pressure was gradually reduced to a pressure equal to or less than 11.6 kPa and held at that value for 6 hours.	EL 2610-34	As above	N/A
	c)Acceptance criteria:		As above	N/A
	Results:no fire, no explosion, no leakage*	EL 2610-35	As above	N/A
7.3.8	Overcharge	EL 2610-36	See below	N/A
	a)Requirements:		This is not a Nickel system	N/A
	Charging for longer periods and at a higher rate than specified by the manufacturer shall not cause fire or explosion*	EL 2610-37	As above	N/A
	b)Test:		As above	N/A
	A discharged cell or battery was subjected to a high-rate charge of 2.5 times the recommended charging current for a time that produced a 250% charge input (250% of rated capacity).	EL 2610-38	As above	N/A
	c)Acceptance criteria:		As above	N/A
	Results:no fire, no explosion.*	EL 2610-39	As above	N/A
7.3.9	Forced discharge (cells)	EL 2610-40	See below	N/A
	a)Requirements:		This is not a Nickel system	N/A
	A cell in a multi cell application shall withstand polarity reversal without	EL 2610-41	As above	N/A

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causing fire or explosion.*			
b)Test:		As above	N/A
Discharged cells intended for use in multi-cell applications, were subjected to a reverse charge 1t 1.0 It (A) for 90 minutes.	EL 2610-42	As above	N/A
c)Acceptance criteria:		As above	N/A
Results: no fire, no explosion*	EL 2610-43	As above	N/A

*- Total number of Requirements to be observed / inspected =20
Total No of applicable Requirement =00
No of Requirements for which the sample passed =N/A
Total number of tests to be conducted =24
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

Certificate: It is certified that the above tests were performed and found to be not applicable in the requirement tested.



(Approving Authority)

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Tests relating to General Requirements

EL 2611 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
8	Specific requirements and tests(Lithium Systems)*	EL 2611-00	See below	P
8.1	Charging Procedure for test purposes	EL 2611-01	In compliance	P
8.1.1	First procedure: This charging procedure applied to tests other than those specified in 8.1.2	EL 2611-02	Except Procedure specified in Cl.no. 8.1.2, First procedure used	P
8.1.2	Second procedure: This charging procedure applied to the tests of 8.3.1, 8.3.2, 8.3.4, 8.3.5, and 8.3.9	EL 2611-03	Second Procedure used for test of Cl.no 8.3.2	P
	If a cell's specified upper and/or lower charging temperature exceeds values for the upper and/or lower limit test temperatures of Table 4, the cells were charged at the specified values plus 5 °C for the upper limit and minus 5 °C for the lower limit	EL 2611-04	Charging temperature range declared by manufacturer is:0°C to 45°C. The upper limit test temperature: 45°C The lower limit test temperature: -5°C	P
	A valid rationale was provided to ensure the safety of the cell (see Figure A.1):	EL 2611-05	Complies	P
	For a different upper limit charging voltage (i.e. other than for lithium cobalt oxide systems at 4.25 V), the applied upper limit charging voltage and upper limit charging temperatures were adjusted accordingly	EL 2611-06	Upper limit Charging Voltage:4.2V	P
	A valid rationale was provided to ensure the safety of the cell (see Figure A.1):	EL 2611-07	Complies	P

*- Total number of Requirements to be observed / inspected =01

Total No of applicable Requirement =01

No of Requirements for which the sample passed =01

Total number of tests to be conducted =07

Total No of applicable Tests =07

No. of tests for which the sample passed =07

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2612 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
8.2	Intended Use*	EL 2612-00	See below	P
8.2.1	Continuous charging at constant voltage (cells)*	EL 2612-01	See below	N/A
	a)Requirement		Safety Certified cell used (See table 1)	N/A
	A continuous charge at constant voltage shall not cause fire or explosion.*	EL 2612-02	As above	N/A
	b)Test		As above	N/A
	Fully charged cells are subjected for 7 days to a charge as specified by the manufacturer.	EL 2612-03	As above	N/A
	c)Acceptance criteria:		As above	N/A
	Results: no fire, no explosion, no leakage*	EL 2612-04	As above	N/A
8.2.2	Moulded case stress at high ambient temperature (battery)	EL 2612-05	Complied	P
	a)Requirements:		See below	P
	Internal components of batteries shall not be exposed to during at high temperature*	EL 2612-06	Internal components of batteries not be exposed at high temperature	P
	b)Test:		See below	P
	Fully charged batteries were placed in an air-circulating oven at a temperature of 70°C±2°C for 7 hours. Afterwards, they are removed and allowed to return to room temperature.	EL 2612-07	Three batteries were fully charged as per Cl.8.1.1	P
	c)Acceptance criteria:		See below	P
	Results:no physical distortion of the battery casing resulting in exposure if internal components.*	EL 2612-08	No physical distortion of the battery casing resulting in exposure of internal components	P

*- Total number of Requirements to be observed / inspected =06
Total No of applicable Requirement =03
No of Requirements for which the sample passed =03
Total number of tests to be conducted =03
Total No of applicable Tests =02
No. of tests for which the sample passed =02

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.





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Tests relating to General Requirements

EL 2613 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
8.3	Reasonably foreseeable misuse*	EL 2613-00	See below	P
8.3.1	External short circuit (cell)	EL 2613-01	See below	N/A
	a) Requirements:		Safety certified cell used (See table 1)	N/A
	Short-circuiting of the positive and negative terminals of the cell at ambient temperature shall not cause fire or explosion.*	EL 2613-02	As above	N/A
	b) Test:		As above	N/A
	Fully charged cells were subjected to a short circuit test at 20°C ± 5°C.	EL 2613-03	As above	N/A
	The external resistance did not exceed 80 Ωm ± 20 mΩ	EL 2613-04	As above	N/A
	The cells or batteries were tested for 24 h or until the case temperature declined by 20% of the maximum temperature rise.	EL 2613-05	As above	N/A
	c) Acceptance criteria:		As above	N/A
	Results: no fire, no explosion.*	EL 2613-06	As above	N/A
8.3.2	External short circuit (battery)	EL 2613-07	Complied	P
	a) Requirements:		See below	P
	Short-circuiting of the positive and negative terminals of the battery pack shall not cause fire or explosion.*	EL 2613-08	Not causing fire or explosion after short circuiting positive and negative terminal (See table 8.3.2)	P
	b) Test:		See below	P
	Fully charged batteries were subjected to a short circuit test at 55°C ± 5°C.	EL 2613-09	Ten fully charged Batteries tested for this condition at 55°C ± 5°C	P
	The external resistance did not exceed 80mΩ ± 20mΩ	EL 2613-10	External resistance within (80± 20)mili-ohm	P
	The cells or batteries were tested for 24 h or until the case temperature declined by 20% of the maximum temperature rise.	EL 2613-11	Batteries are tested for 24hrs	P
	In case of rapid decline in short circuit current, the battery pack remained on test for an additional one hour after the current reached a low end steady state condition	EL 2613-12	No such condition is observed	P
	c) Acceptance criteria:		See below	P
	Results: no fire, no explosion.*	EL 2613-13	No fire, no explosion observed	P
8.3.3	Free fall	EL 2613-14	Complied	P
	a) Requirements:		See below	P
	Dropping of a cell or battery shall not cause fire or explosion*	EL 2613-15	Followed the requirement	P
	b) Test:		See below	P
	Fully charged cells or battery is dropped three times from a height of	EL 2613-16	Three fully charged batteries tested for this condition	P

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	1m onto concrete floor so as to obtain impacts in random orientations.			
	c)Acceptance criteria:		See below	P
	Results:no fire, no explosion*	EL 2613-17	no fire, no explosion	P
8.3.4	Thermal abuse (cells)	EL 2613-18	See below	N/A
	a)Requirements:		Safety certified cell used (See table 1)	N/A
	An extremely high temperature shall not cause fire or explosion*	EL 2613-19	As above	N/A
	b)Test:		As above	N/A
	Fully charged cells were placed in a gravity or circulating air-convection oven. The oven temperature was raised at a rate of 5°C/min \pm 2°C/min to a temperature of 130°C \pm 2°C. The cell remained at that temperature for 10 minutes before the test was discontinued.	EL 2613-20	As above	N/A
	c) Acceptance criteria:		As above	N/A
	Results:no fire, no explosion*	EL 2613-21	As above	N/A
8.3.5	Crush (cells)	EL 2613-22	See below	N/A
	a)Requirements:		Safety certified cell used (See table 1)	N/A
	Severe crushing of a cell shall not cause fire or explosion.*	EL 2613-23	As above	N/A
	b)Test:		As above	N/A
	Fully charged cells were crushed between two flat surfaces with a hydraulic ram exerting a force of 13 kN \pm 1 kN.	EL 2613-24	As above	N/A
	Once maximum force has been applied , or an abrupt voltage drop of one-third of the original voltage has been obtained, the force is released	EL 2613-25	As above	N/A
	A cylindrical or prismatic cell was crushed with its longitudinal axis parallel to the flat surfaces of the crushing apparatus.	EL 2613-26	As above	N/A
	c)Acceptance criteria:		As above	N/A
	Results:no fire, no explosion.*	EL 2613-27	As above	N/A
8.3.6	Over-charging of battery	EL 2613-28	Complied	P
	a)Requirements:		See below	P
	Charging for longer periods than specified by the manufacturer shall not cause fire or explosion	EL 2613-29	No fire or explosion (See table 8.3.6)	P
	b)Test:		See below	P
	The test shall be carried out in an ambient temperature of +20 °C \pm 5 °C. Each test battery shall be discharged at a constant current of 0,2 It A, to a final discharge voltage specified by	EL 2613-30	Five fully discharged batteries at 20°C \pm 5°C are tested for this condition	P

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	themanufacturer.			
	Sample batteries shall then be charged at a constant current of 2,0 It A, using a supply voltage (not to exceed the maximum voltage supplied by the recommended charger – if value not available it shall be 5,0 V per cell) sufficient to maintain this current of 2,0 It A throughout the duration of the test or until the supply voltage is reached.	EL 2613-31	Five fully discharged samples were to subjected to over-charge test at 2.0It	P
	A thermocouple shall be attached to each test battery. For battery packs, the temperature shall be measured on the battery pack casing.	EL 2613-32	The temperature was measured and monitored. See table 8.3.6	P
	The test shall be continued until the temperature of the outer casing reaches steady state conditions (less than 10 °C change in 30-minute period) or returns to ambient.	EL 2613-33	The test would be continued until the temperature of the outer casing returns to ambient	P
	c) Acceptance criteria:		See below	P
	Results: no fire, no explosion.*	EL 2613-34	No fire, No explosion	P
8.3.7	Forced discharge (cells)	EL 2613-35	See below	N/A
	a) Requirements		Safety certified cell used (See table 1)	N/A
	A cell in a multi cell application shall withstand polarity reversal without causing fire or explosion.*	EL 2613-36	As above	N/A
	b) Test:		As above	N/A
	Discharged cells intended for use in multi-cell applications, were subjected to a reverse charge 1t 1.0 It (A) for 90 minutes.	EL 2613-37	As above	N/A
	c) Acceptance criteria:		As above	N/A
	Results: no fire, no explosion*	EL 2613-38	As above	N/A
8.3.8	Transport tests	EL 2613-39	See below	P
	Manufacturer's documentation provided to show compliance with UN Recommendations on Transport of Dangerous Goods	EL 2613-40	Manufacturer provided a document (UN 38.3 test report) for compliance	P
8.3.9	Design evaluation – Forced internal short circuit (cells)	EL 2613-41	This is country specific test applicable only in France, Japan, Korea ,Switzerland	N/A
	a) Requirements:		As above	N/A
	Forced internal short circuit test for cylindrical cells and prismatic cells shall not cause fire. This country specific test which is only applicable to France, Japan, Korea and Switzerland and is not required on polymer cells.*	EL 2613-42	As above	N/A
	b) Test:		As above	N/A
	The forced internal short circuit test is performed in a chamber at +10 °C and	EL 2613-43	As above	N/A

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+45 °C (ambient internal chamber temperature) according to the following procedure.			
c) Acceptance criteria:		As above	N/A
Results: No fire.*	EL 2613-44	As above	N/A

*- Total number of Requirements to be observed / inspected =17

Total No of applicable Requirement =07

No of Requirements for which the sample passed =07

Total number of tests to be conducted =29

Total No of applicable Tests =13

No. of tests for which the sample passed =13

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2614 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
9	Information for Safety*	EL 2614-00	See below	P
9.1	The manufacturer of secondary cells ensures that information is provided about current, voltage and temperature limits of their products.*	EL 2614-01	Safety certified cell used	N/A
9.2	The manufacturer of batteries ensures that equipment manufacturers and, in the case of direct sales, end-users are provided with information to minimize and mitigate hazards.*	EL 2614-02	Provided in the product specification, which will be merged into the user manual of the end product	P
9.3	Systems analyses performed by device manufacturers to ensure that a particular battery design prevents hazards from occurring during use of a product.*	EL 2614-03	As above	P
9.4	As appropriate, information relating to hazard avoidance resulting from a system analysis is provided to the end user.*	EL 2614-04	As above	P

*- Total number of Requirements to be observed / inspected =05
Total No of applicable Requirement =04
No of Requirements for which the sample passed =04
Total number of tests to be conducted =00
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2615 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
10	Markings*	EL 2615-00	See below	P
10.1	Cell Marking*	EL 2612-01	The product is Lithium-Ion Battery Pack	N/A
	Cells marked as specified in the applicable cell standards: IEC 61951-1, IEC 61951-2 or IEC 61960.*	EL 2615-02	As above	N/A

*- Total number of Requirements to be observed / inspected =03
Total No of applicable Requirement =01
No of Requirements for which the sample passed =01
Total number of tests to be conducted =00
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2616 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
10.2	Battery Markings*	EL 2616-00	See below	P
	Batteries marked in accordance with the requirements for the cells from which they are assembled.	EL 2616-01	Marked(See copy of marking label page no. 4)	P
	Batteries marked with an appropriate caution statement.	EL 2616-02	Marked(See copy of marking label page no. 4)	P

*- Total number of Requirements to be observed / inspected =01

Total No of applicable Requirement =01

No of Requirements for which the sample passed =01

Total number of tests to be conducted =02

Total No of applicable Tests =02

No. of tests for which the sample passed =02

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2617 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
10.3	Other Information*	EL 2617-00	See below	P
	Storage and disposal instructions marked on or supplied with the battery.	EL 2617-01	The disposal instructions are provided in the instructions manual	P
	Recommended charging instructions marked on or supplied with the battery.	EL 2617-02	The disposal instructions are provided in the instructions manual	P

*- Total number of Requirements to be observed / inspected =01

Total No of applicable Requirement =01

No of Requirements for which the sample passed =01

Total number of tests to be conducted =02

Total No of applicable Tests =02

No. of tests for which the sample passed =02

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2618 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
11	Packaging*	EL 2618-00	See below	P
	The materials and packaging design are chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of environmental contaminants.*	EL 2618-01	The package method had been indicated in the product specification, had been passed the environment test to ensure the well packaging method to prevent the unintentional electrical condition	P

*- Total number of Requirements to be observed / inspected =02
Total No of applicable Requirement =02
No of Requirements for which the sample passed =02
Total number of tests to be conducted =00
Total No of applicable Tests =00
No. of tests for which the sample passed =N/A

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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Tests relating to General Requirements

EL 2619 – V2.0

Cl.No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
A	Charging range of secondary lithium ion cells for safe use	EL 2619-00	Safely Certified Cell used	P
A.1	General	EL 2619-01	See below	P
A.2	Safety of lithium-ion secondary battery	EL 2619-02	4.2V applied	P
A.3	Consideration on charging voltage	EL 2619-03	See below	P
A.3.1	General	EL 2619-04	Charging voltage is not exceeded the value which is specified by the manufacturer	P
A.3.2	Upper limit charging voltage	EL 2619-05	See below	P
A.3.2.1	General	EL 2619-06	Upper limit charging voltage is 4.2V	P
A.3.2.2	Explanation of safety viewpoint	EL 2619-07	Not exceeded 4.2V	N/A
A.3.2.3	Safety requirements, when different upper limit charging voltage is applied	EL 2619-08	Considered	P
A.4	Consideration of temperature and charging current	EL 2619-09	In compliance	P
A.4.1	General	EL 2619-10	See below	P
A.4.2	Recommended temperature range	EL 2619-11	Charge temperature declared by the manufacture 0~45°C	P
A.4.2.1	General	EL 2619-12	See below	P
A.4.2.2	Safety consideration when a different recommended temperature range is applied	EL 2619-13	Test carried out at temperature range -5°C~45°C	P
A.4.3	High temperature range	EL 2619-14	See below	N/A
A.4.3.1	General	EL 2619-15	Higher temperature range is not exceed 45°C	N/A
A.4.3.2	Explanation of safety viewpoint	EL 2619-16	As above	N/A
A.4.3.3	Safety considerations when specifying charging conditions in high temperature range	EL 2619-17	As above	N/A
A.4.3.4	Safety consideration when specifying new upper limit in high temperature range	EL 2619-18	As above	N/A
A.4.4	Low temperature range	EL 2619-19	See below	P
A.4.4.1	General	EL 2619-20	Lower temperature range is 0°C	P
A.4.4.2	Explanation of safety view point	EL 2619-21	Considered	P
A.4.4.3	Safety considerations, when specifying charging conditions in low temperature range	EL 2619-22	Charge at -5°C for lower temperature range	P
A.4.4.4	Safety considerations when specifying a new lower limit in the low temperature range	EL 2619-23	Considered	P
A.4.5	Scope of the application of charging current	EL 2619-24	In compliance	P
A.5	Sample preparation	EL 2619-25	This is country specific test applicable only in France, Japan, Korea, Switzerland	N/A
A.5.1	General	EL 2619-26	As above	N/A





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A.5.2	Insertion procedure for nickel particle to generate internal short	EL 2619-27	As above	N/A
	The insertion procedure carried out at 20°C±5°C and under -25 °C of dew point	EL 2619-28	As above	N/A
A.5.3	Disassembly of charged cell	EL 2619-29	As above	N/A
A.5.4	Shape of nickel particle	EL 2619-30	As above	N/A
A.5.5	Insertion of nickel particle to cylindrical cell	EL 2619-31	As above	N/A
A.5.5.1	Insertion of nickel particle to winding core	EL 2619-32	As above	N/A
A.5.5.2	Mark the position of nickel particle on the both end of winding core of the separator	EL 2619-33	As above	N/A
A.5.6	Insertion of nickel particle to prismatic cell	EL 2619-34	As above	N/A

*- Total number of Requirements to be observed / inspected =00
Total No of applicable Requirement =00
No of Requirements for which the sample passed =N/A
Total number of tests to be conducted =35
Total No of applicable Tests =19
No. of tests for which the sample passed =19

Certificate: It is certified that the above tests were performed and found to be Passing in the requirement tested.



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5.1-5.6

TABLE 1: List of critical Components

P

Object/part No.	Manufacturer/ trademark	Type/Model	Technical Data	Standard	Marks of Conformity
Cell	SAMSUNG	ICR18650-26H	3.7V, 2600mAh	IS 16046:2015	BIS(R-41018465)
PCB Material	ShenZhen Sayea Circuit Technology Co Ltd	SY-D	V-0, 130°C	UL 796(Flammability test equivalent to IEC 60695-11-10)	UL(E476823)
Plastic Enclosure	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AC3710	V-1, 80°C, 1.20mm	UL 94(Flammability test equivalent to IEC 60695-11-10)	UL(E162823)
MOSFET(Q2, Q1 & Q3)	AOS	A04407A	VDS=30V, ID=12A	IS 16046:2015	Tested with appliance
IC(U1)	SII	S-8254AANFTTB	VCU=4.250± 0.025V VDL=2.50± 0.080V VCL=4.150±0.050V	IS 16046:2015	Tested with appliance
Lead wire	DONGGUAN XIONGXIN ELECTRONICS CO LTD	1007	80°C, 20AWG	UL 758(No equivalent IEC is available)	UL(E358766)

Supplementary information:

Evidences provided by the manufacturer for the listed components are verified by us and the evidences are conforming to the requirements of the relevant standard.

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TABLE: 7.2.1		Continuous Low Rate Charge Test			N/A
Model	Recommended Charging Method, CC, CV, or CC/CV	Recommended Charging Voltage Vc,Vdc	Recommended Charging Current Irec, A	OCV at Start of Test, Vdc	Results
--	--	--	--	--	--

Supplementary information:
This is not a Nickel system

TABLE: 7.2.2		Vibration Test		N/A
Model	OCV at start of Test,Vdc		Results	
--	--		--	

Supplementary information:
This is not a Nickel system

TABLE: 7.3.1		Incorrect installation (cells)		N/A
Model	OCV of reversed cell,(Vdc)		Results	
--	--		--	

Supplementary information:
This is not a Nickel system

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TABLE: 7.3.2		External short circuit			N/A
Model	Ambient (at 20°C ± 5°C or 55°C ± 5°C)	OCV at start of test, (Vdc)	Resistance of circuit, (Ω)	Maximum case temperature rise ΔT, (°C)	Results
--	--	--	--	--	--

Supplementary information:
This is not a Nickel system

TABLE: 7.3.6		Crush		N/A	
Model	OCV at start of test, (Vdc)		OCV at removal of crushing force, (Vdc)		Results
---	---		---		---

Supplementary information:
This is not a Nickel system

TABLE: 7.3.8		Overcharge			N/A
Model	OCV prior to charging, (Vdc)	Maximum charge current, (A)	Time for charging, (hours	Results	
--	--	--	--	--	

Supplementary information:
This is not a Nickel system

TABLE: 7.3.9		Forced discharge (cells)			N/A
Model	OCV before application of reverse charge, (Vdc)	Measured reverse charge It, (A)	Time for reversed charge, (minutes)	Results	
--	--	--	--	--	

Supplementary information:
This is not a Nickel system

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TABLE: 8.2.1		Continuous charging at constant voltage (cells)			N/A
Model	Recommended charging voltage Vc, (Vdc)	Recommended charging current Irec, (A)	OCV at start of test, (Vdc)	Results	
--	--	--	--	--	
Supplementary information: Safety certified cell used (See table1)					

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TABLE: 8.3.1		External short circuit (cell)				N/A
Model	Ambient, (°C)	OCV at start of test, (Vdc)	Resistance of circuit, (Ω)	Maximum case temperature rise ΔT, (°C)	Results	
Samples charged at charging temperature upper limit :						
--	--	--	--	--	--	
Samples charged at charging temperature lower limit :						
--	--	--	--	--	--	
Supplementary information: Safety certified cell used (See table1)						

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TABLE: 8.3.2		External short circuit (battery)				P
Model	Ambient, (°C)	OCV at start of test, (Vdc)	Resistance of circuit, (Ω)	Maximum case temperature rise ΔT, (°C)	Results	
Samples charged at charging temperature upper limit: 45°C						
BL2600C1865003S1PGQG	55°C ± 5°C	12.59	80 milli-ohm	0.9	A	
BL2600C1865003S1PGQG	55°C ± 5°C	12.51	80 milli-ohm	1.2	A	
BL2600C1865003S1PGQG	55°C ± 5°C	12.61	80 milli-ohm	1.3	A	
BL2600C1865003S1PGQG	55°C ± 5°C	12.68	80 milli-ohm	1.1	A	
BL2600C1865003S1PGQG	55°C ± 5°C	12.58	80 milli-ohm	1.0	A	
Samples charge at charging temperature lower limit: -5°C						
BL2600C1865003S1PGQG	55°C ± 5°C	12.62	80 milli-ohm	1.1	A	
BL2600C1865003S1PGQG	55°C ± 5°C	12.69	80 milli-ohm	0.9	A	
BL2600C1865003S1PGQG	55°C ± 5°C	12.56	80 milli-ohm	1.2	A	
BL2600C1865003S1PGQG	55°C ± 5°C	12.58	80 milli-ohm	1.0	A	
BL2600C1865003S1PGQG	55°C ± 5°C	12.59	80 milli-ohm	0.9	A	
Supplementary information: -A: No fire or explosion -B: No leakage -C: Leakage -D: Fire -E: Explosion -F: Bulge -G: Others (please explain)						

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TABLE: 8.3.5		Crush				N/A	
Model	OCV at start of test, (Vdc)	OCV at removal of crushing force, (Vdc)	Width/ diameter of cell before crush, (mm)	Required deformation for crush, (mm)	Results		
Samples charged at charging temperature upper limit:							
--	--	--	--	--	--		
Samples charged at charging temperature lower limit:							
--	--	--	--	--	--		
Supplementary information: Safety certified cell used (See table1)							

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TABLE: 8.3.6	Over-charging of battery	P	
Constant charging current (A) :	5.2A		
Supply voltage (Vdc) :	15.0V		
Model	OCV before charging, (Vdc)	Maximum outer casing temperature, (°C)	Results
BL2600C1865003S1PGQG	8.91	23.6	A
BL2600C1865003S1PGQG	9.01	25.4	A
BL2600C1865003S1PGQG	9.05	23.8	A
BL2600C1865003S1PGQG	9.03	24.1	A
BL2600C1865003S1PGQG	8.99	24.8	A
Supplementary information: -A: No fire or explosion -B: No leakage -C: Leakage -D: Fire -E: Explosion -F: Bulge -G: Others (please explain)			

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TABLE: 8.3.7		Forced discharge (cells)			N/A
Model	OCV before application of reverse charge, (Vdc)	Measured Reverse charge It, (A)	Time for reversed charge, (minutes)	Results	
--	--	--	--	--	

Supplementary information:
Safety certified cell used (See table1)

TABLE: 8.3.9		Forced internal short circuit (cells)				N/A
Model	Chamber ambient, (°C)	OCV at start of test, (Vdc)	Particle location 1)	Maximum applied pressure, (N)	Results	
--	--	--	--	--	--	

Supplementary information:
This is country specific test

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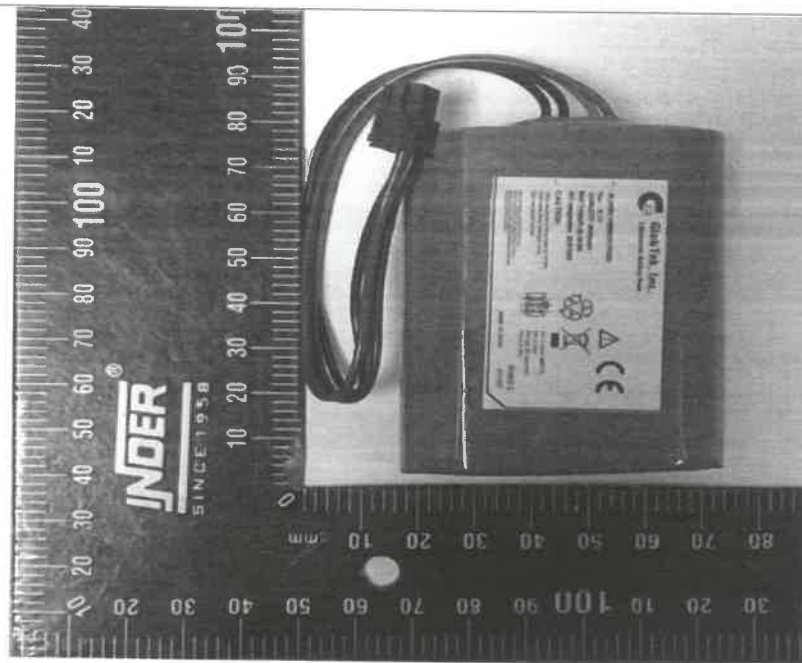
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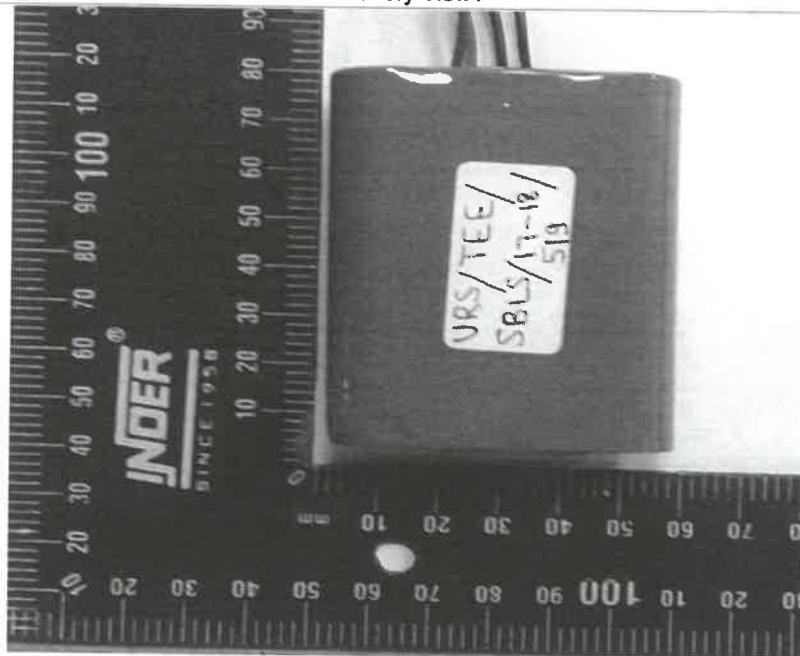
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Battery View1



Battery View2

Handwritten signature





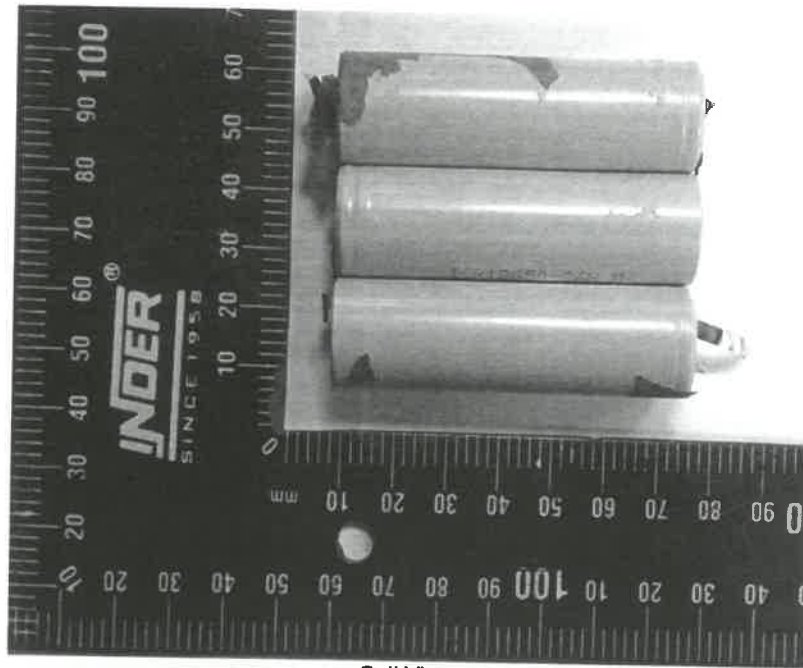
URS PRODUCTS & TESTING PVT. LTD.

F-3, Sector - 6, Noida - 201301, India
T: +91 (0120) 6404223 - 26 F: +91 (0120) 4750296
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CIN: U21014UP1987PTC008956

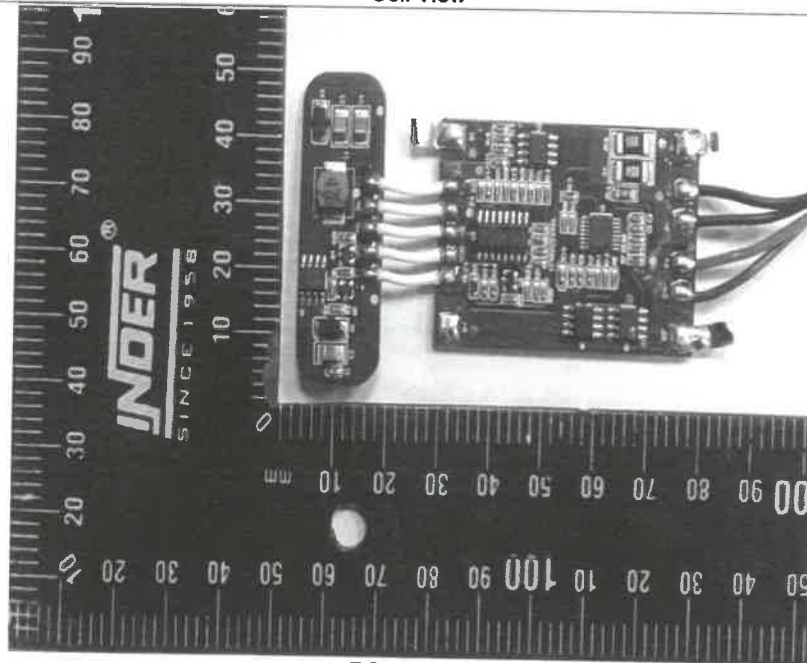
Report No- URS/TEE/EID/17-18/321
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Cell View



PCB View1

Handwritten signature





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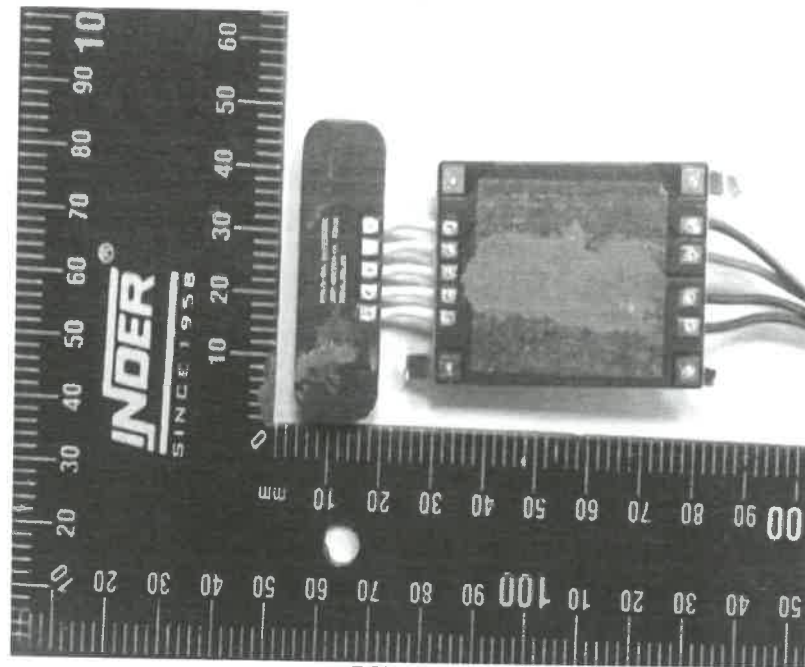
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PCB View2

Work

