TEST RECORD NO. 1

SAMPLES:

The manufacturer furnished representative samples of the cell Model noted below for the investigation. These samples were subjected to the test program described on the following pages.

Model	Cell Chemistry	Cell Shape	Energy Density, mAh/mm3	End Point Voltage, V dc	Nominal Voltage Rating, V dc	Capacity, Ah	Maximum Charging Current, A	Maximum Charging Voltage, V dc
INR14500-800	LiNi0.5Co0.2Mn0.3O2+6C===LixC6+Li1-xNi0.5Co0.2Mn0.3O2	Cylindrical	0.107645195	2.75	3.7	0.8	0.4	4.2

Samples of the following models were also tested after the following pre-conditioning:

	Type		Preconditioning		
Model	Primary	Secondary	Complete Discharged	One Half Discharged	Charge/Discharge Cycled
INR14500-800	-	X	-	-	X

GENERAL:

Test results relate only to the items tested.

All tests are conducted at Guangdong ESTL Technology Co., Ltd(Part Site NO 2377039) under WTDP. (Address: Room 101, Unit 2, Building 1, No. 11 and Room 101, 201-208, Unit 1, Building 1, No. 9 Headquarters 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China)

Full test program on Model INR14500-800 (both fresh and cycled cells).

The following tests were conducted.

Model	Test	UL 1642, Section	Complied, Y, N Or N/A	Comments
INR14500- 800(A, D)	Short Circuit: (At room temperature)	10	Y	Complying
INR14500- 800(A, D)	Short Circuit: (At 55℃)	10	Y	Complying
INR14500- 800(A, D)	Abnormal Charging	11	Y	Complying
INR14500- 800(A, D)	Crush	13	Y	Complying
INR14500- 800(A, D)	Impact	14	Y	Complying
INR14500- 800(A, D)	Shock	15	Y	Complying
INR14500- 800(A, D)	Vibration	16	Y	Complying
INR14500- 800(A, D)	Heating	17	Y	Complying
INR14500- 800(A, D)	Temperature Cycling	18	Y	Complying
INR14500- 800(A, D)	Low Pressure	19	Y	Complying
INR14500- 800(A)	Projectile	20	Y	Complying
Cell Condition Key: (A)- Fresh (Not preconditioned). (D)- Preconditioned (Charge- discharged cycled).				

The test methods and results of the above tests have been reviewed and found in accordance with the requirements in the Standard for Lithium Batteries, UL 1642, 5th Edition, Dated March 13, 2012, including revision through June 23, 2015.

Test Record Summary:

The results of this investigation, including construction review and testing, indicate that the products evaluated comply with the applicable requirements in the UL Standard for Safety for Lithium Batteries, UL 1642, 5th Edition, Dated March 13, 2012, including revision through including June 23, 2015, therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report. Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

TEST RECORD NO. 2

SAMPLES:

The manufacturer furnished representative samples of the cell Models noted below for the investigation. These samples were subjected to the test program described on the following pages.

Model	Cell Chemistry	Cell Shape	Energy Density, mAh/mm3	End Point Voltage, V dc	Nominal Voltage Rating, V dc	Capacity, mAh	Maximum Charging Current, mA	Maximum Charging Voltage, V dc
INR21700-4500	$LiNi_{0.5}Co_{0.2}Mn_{0.3}O_2$+6C	Cylindrical	0.1706123	2.75	3.7	4500	2250	4.2
INR18650-2600			0.1498148	2.75	3.7	2600	1300	4.2
INR18500-1600			0.1242087	2.75	3.7	1600	800	4.2
INR14430-650			0.1001094	2.75	3.7	650	325	4.2

GENERAL:

Test results relate only to the items tested.

The tests were conducted by WTDP, at SHANGHAI TRURON TESTING TECHNOLOGY CO LTD, 3F, 2F, 1F BLDG 1 NO. 685, HUISHAN ROAD, SHANGHAI, 201815, CHINA.

Due to similarity of Models INR18650-1500, INR18650-1800, INR18650-2000, INR18650-2200, INR18650-2500, INR18650-2600, INR18500-1200, INR18500-1400, INR18500-1600, INR18500-1900, INR14650-1100, INR21700-3000, INR21700-4000, INR21700-4500, INR14430-650 to R/C Models for this manufacturer in this report, except for capacity, weight, dimension, energy density, separator, only the following tests were conducted necessary.

Abbreviated tests program (V1) was conducted on Model INR21700-4500, cell with larger capacity and density in family.

Abbreviated tests program (V1 Covered V3, V10) was conducted on Model INR18650-2600, cell with intermediate capacity , energy density and different separator in family.

Abbreviated tests program (V1 Covered V3) was conducted on Model INR18500-1600, cell with intermediate capacity and energy density in family.

Abbreviated tests program (V2) was conducted on Model INR14430-650, cell with smaller capacity in family.

The tests conducted on cell Models INR21700-4500, INR18650-2600, INR18500-1600, INR14430-650 were considered representative of the remaining aforementioned models.

Tests were considered covered as follows:

Test	File Reference	Report Date	Test Record No.
Short circuit at room temperature, Shock, Vibration, Temperature Cycling, Low Pressure	MH65016	2021- 04- 19	1

The following tests were conducted.

Model	Test	UL 1642, Section	Complied, Y, N Or N/A	Comments
INR21700- 4500, INR18650- 2600, INR18500- 1600, INR14430- 650	Short Circuit: (At 55℃)	10	Y	Complying
	Abnormal Charging	11	Y	Complying
	Crush	13	Y	Complying
	Impact	14	Y	Complying
	Heating	17	Y	Complying
	Projectile	20	Y	Complying

The test methods and results of the above tests have been reviewed and found in accordance with the requirements in the Standard for Lithium Batteries, UL 1642, 6th Edition, Dated September 29, 2020.

Test Record Summary:

The results of this investigation, indicate that the products evaluated comply with the applicable requirements in the UL Standard for Safety for Lithium Batteries, UL 1642, 6th Edition, Dated September 29, 2020, therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report. Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Test Record by:
Jissea Liu
Senior Project Engineer

Reviewed by:
Becky Li
Senior Project Engineer

CONCLUSION

Samples of the components covered by this Report have been found to comply with the requirements covering the category and the components are found to comply with UL's applicable requirements. The description and test result in this Report are only applicable to the sample(s) investigated by UL and does not signify the product(s) described as being covered under UL's Follow-Up Service Program. When covered under UL's Follow-Up Service Program, the manufacturer is authorized to use the Recognized Marking on such products which comply with UL's Follow-Up Service Procedure and any other applicable requirements of UL LLC. The Recognized Component Mark of UL LLC on the product, or the Recognized Marking symbol on the product and the Recognized Component Mark on the smallest unit container in which the product is packaged, is the only method to identify products investigated by UL to published requirements and manufactured under UL's Recognition and Follow-Up Service.

This Report is intended solely for the use of UL LLC (UL) and the Applicant for establishment of UL certification coverage of the described product(s) under UL's Follow-Up Service. UL retains all rights, title and interest (including exclusive ownership) in this Report and all copyright therein. The Applicant or its designated agent shall not disclose or otherwise distribute this Report or its contents to any third party, except as required for purposes of compliance with laws, regulations, or other existing agreements or schemes in which UL is currently a participant. Any other use of this Report including, without limitation, evaluation or certification by a party other than UL is prohibited and renders this Report null and void. UL shall not incur any obligation or liability for any loss, expense, or punitive damages, arising out of, or in connection with, the use or reliance upon the contents of this Report to anyone other than the Applicant as provided in the agreement between UL and Applicant. Any use or reference to UL's name or certification mark(s) by anyone other than the Applicant in accordance with the agreement is prohibited without the express written approval of UL. Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. UL shall not otherwise be responsible to anyone for the use of or reliance upon the contents of this Report.

Report by:
Devin He
Project Engineer

Reviewed by:
Elly Ai(T)
Project Engineer

Hugo Wen
Project Engineer