

Model name : ICR18650-30B

Revision 0.0

Executive Div.	Safety Center	Confidential	
	Name / Title	Signature	Date
Reported by	JS Lim / Technician		201302.01
Approved by	JH Kim / Senior manager		201302.01

Test report; UN Manual of Tests and Criteria,
Part II, Subsection 38.3

2013, 5th Revision

Document No : MT0019956

SAMSUNG SDI
Energy Business Division



Product Information

1. Model name: **ICR18650-30B**
2. Product classification: **Li-ion cylindrical cell**
2. Nominal voltage: **3.78v**
3. Rated capacity: **2950mAh**
4. Wh Capacity: **11.151Wh**
5. Weight of product: **48g**
6. Test Date: **2013.01.08 ~ 2013.01.14**
7. Test Location: **SAMSUNG SDI Safety Center, 508 Sungsungdong, Cheonan
Chungcheongnamdo, Korea**

Test summary

Test No.	Test item	Relating Std.	Test begins on	Test Completed on	Judgment
T1	Altitude simulation	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.1	2013.01.17	2013.01.18	Pass
T2	Thermal test	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.2	2013.01.18	2013.01.23	Pass
T3	Vibration	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.3	2013.01.26	2013.01.26	Pass
T4	Shock	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.4	2013.01.26	2013.01.26	Pass
T5	External short circuit	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.5	2013.01.28	2013.01.31	Pass
T6	Impact	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.6	2013.01.11	2013.01.11	Pass
T7	Overcharge	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.7	N/A	N/A	N/A
T8	Forced discharge	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.8	2013.01.13	2013.01.14	Pass
P1	Packaging Drop	2009 IATA Dangerous Goods Regulations 50 th Edition	2013.02.01	2013.02.01	Pass

- Tests T-1 through T-5 shall be conducted in sequence with the same call
- For test 6, test should be conducted for cells in a pack
- T7 shall be performed only for Li-rechargeable battery not Li-ion cell.
- T8 shall be performed only for Li-ion cell not Li-rechargeable battery.

T-1~T-5) Transportation Test: Pass

	Initial		T1		T2		T3		T4		T5
Sample No.	Weight(g)	OCV(V)	Weight(g)	OCV(V)	Weight(g)	OCV(V)	Weight(g)	OCV(V)	Weight(g)	OCV(V)	Max Temperature(°C)
1	46.98	4.263	46.98	4.262	46.98	4.224	46.98	4.223	46.98	4.223	69
2	46.92	4.255	46.92	4.254	46.89	4.219	46.9	4.216	46.9	4.216	64
3	46.89	4.256	46.88	4.255	46.89	4.222	46.88	4.219	46.89	4.218	64
4	46.91	4.256	46.91	4.254	46.91	4.222	46.91	4.221	46.9	4.222	66
5	46.93	4.256	46.93	4.253	46.93	4.222	46.93	4.221	46.93	4.222	71
6	46.71	4.324	46.71	4.322	46.71	4.248	46.7	4.247	46.7	4.247	69
7	46.93	4.326	46.73	4.322	46.72	4.248	46.73	4.247	46.73	4.247	67
8	46.69	4.325	46.69	4.322	46.69	4.247	46.69	4.247	46.69	4.244	69
9	46.79	4.323	46.78	4.321	46.77	4.245	46.78	4.244	46.78	4.244	65
10	46.7	4.325	46.7	4.324	46.69	4.247	46.68	4.243	46.68	4.242	73
Avg.	46.845	4.2909	46.823	4.2889	46.818	4.2344	46.818	4.2328	46.818	4.2323	67.7
Max.	46.98	4.326	46.98	4.324	46.98	4.248	46.98	4.247	46.98	4.247	73
Min.	46.69	4.255	46.69	4.253	46.69	4.219	46.68	4.216	46.68	4.216	64

T-6) Impact Test: Pass

	Initial	T6
Sample No.	OCV(V)	Max. Temperature(°C)
1	3.833	22
2	3.832	22
3	3.831	54
4	3.833	46
5	3.833	21
Avg.	3.8324	33
Max.	3.833	54
Min.	3.831	21

■ T1~T5: Tests were performed in sequence with same samples

■ T6: Prismatic type cell test condition;

- From sample no.1~5: Wide side impact

- From sample no.6~10: Narrow side impact

Other type cells

- Only 5 samples shall be tested.

T-7) Over charge Test: N/A

- Test Condition: N/A

T-8) Forced discharge Test: Pass

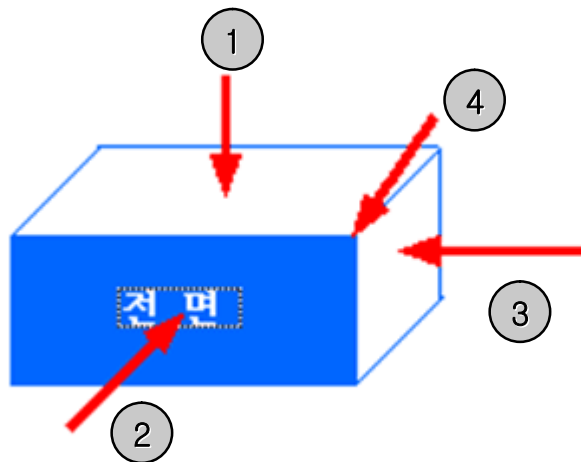
- Test condition: 6A / 1Hr

	Fresh cell 0% SOC	50 Cycled cell 0% SOC
Sample No.	Max. temperature	Max. temperature
1	72	64
2	72	71
3	82	84
4	88	63
5	49	74
6	56	75
7	57	73
8	78	77
9	60	74
10	70	63
Avg.	68.4	71.8
Max.	88	84
Min.	49	63

P-1) Packaging Drop Test: Pass

	Before test	After test
Weight (Kg)	9.901Kg	9.899Kg
Remark	Outer packaging is damaged but samples inside the package remain intact and no damage, no shifting, no release of contents for samples inside the package.	

■ Test Method



■ Sample picture

