

UN TEST REPORT

Test Summary

Report Number,	SDI-UN-250903-02		
Date of issue.....	2025.09.03		
Test period	2025.07.04 ~ 2025.07.16		
Testing Laboratory.....	Samsung SDI Co., Ltd		
Address	467, Beonyeong-ro, Seobuk-gu, Cheonan-si, Chungcheongnam-do, Korea		
Contact.....	+82-41-965-2908 / http://samsungsdi.co.kr/s_hyeop.sa@samsung.com		
Manufacturer's name	Samsung SDI Co., Ltd		
Address	467, Beonyeong-ro, Seobuk-gu, Cheonan-si, Chungcheongnam-do, Korea		
Contact.....	+82-41-965-2908 / http://samsungsdi.co.kr/s_hyeop.sa@samsung.com		
Test Standard	Manual of Tests and Criteria, section 38.3 Eighth revised edition		
Description.....	Lithium ion cell		
Physical description	Wearable battery		
Model Name	CC4201F101(NS1047)		
Ratings	3.85V	42mAh	(0.162 Wh)
Mass	Max	1.3 g	

Test Result

No.	Test item	Result	Remark
T-1	Altitude	PASS	
T-2	Thermal Cycling	PASS	
T-3	Vibration	PASS	
T-4	Shock	PASS	
T-5	External Short Circuit	PASS	
T-6	Impact / Crush	PASS	
T-7	Overcharge	N/A	Battery only
T-8	Forced Discharge	PASS	

	Name	position	Signature	Date
Reported by	PARK DAE JUN	Engineer		2025.09.03
Approved by	Jung Hyeon kyu	Principal Engineer		2025.09.03

T1	ALTITUDE SIMULATION TEST	Results
Requirements	No leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure.	☒ No leakage, ☒ No venting, ☒ No disassembly, ☒ No rupture, ☒ No fire, ☒ No voltage drop (Residual OCV not less than 90%) See below table

Sample No.	Sample Condition	Voltage Before Test(V)	Weight Before Test(g)	Voltage After Test(V)	Weight After Test(g)	Residual OCV(%)	Percent of Weight Loss(%)
1	A	4.377	1.099	4.375	1.099	99.95	0.00
2	A	4.377	1.100	4.375	1.101	99.95	0.00
3	A	4.376	1.102	4.375	1.102	99.98	0.00
4	A	4.376	1.108	4.374	1.108	99.95	0.00
5	A	4.376	1.098	4.374	1.098	99.95	0.00
6	B	4.376	1.105	4.374	1.105	99.95	0.00
7	B	4.376	1.098	4.374	1.098	99.95	0.00
8	B	4.376	1.100	4.374	1.099	99.95	0.09
9	B	4.376	1.099	4.374	1.100	99.95	0.00
10	B	4.376	1.099	4.374	1.099	99.95	0.00
☐ Supplementary Information: Sample Condition A : at first cycle, in fully charged states(5 pcs) Sample Condition B : after 25th cycles ending in fully charged states(5 pcs)							

T2	THERMAL TEST	Results
Requirements	No leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure.	☒ No leakage, ☒ No venting, ☒ No disassembly, ☒ No rupture, ☒ No fire, ☒ No voltage drop (Residual OCV not less than 90%) See below table

Sample No.	Sample Condition	Voltage Before Test(V)	Weight Before Test(g)	Voltage After Test(V)	Weight After Test(g)	Residual OCV(%)	Percent of Weight Loss(%)
1	A	4.375	1.099	4.316	1.099	98.65	0.00
2	A	4.375	1.101	4.316	1.101	98.65	0.00
3	A	4.375	1.102	4.316	1.102	98.65	0.00
4	A	4.374	1.108	4.313	1.108	98.61	0.00
5	A	4.374	1.098	4.315	1.098	98.65	0.00
6	B	4.374	1.105	4.314	1.105	98.63	0.00
7	B	4.374	1.098	4.314	1.098	98.63	0.00
8	B	4.374	1.099	4.313	1.099	98.61	0.00
9	B	4.374	1.100	4.314	1.099	98.63	0.09
10	B	4.374	1.099	4.313	1.099	98.61	0.00
☐ Supplementary Information: Sample Condition A : at first cycle, in fully charged states(5 pcs) Sample Condition B : after 25th cycles ending in fully charged states(5 pcs)							

T3	VIBRATION TEST	Results
Requirements	No leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure.	☒ No leakage, ☒ No venting, ☒ No disassembly, ☒ No rupture, ☒ No fire, ☒ No voltage drop (Residual OCV not less than 90%) See below table

Sample No.	Sample Condition	Voltage Before Test(V)	Weight Before Test(g)	Voltage After Test(V)	Weight After Test(g)	Residual OCV(%)	Percent of Weight Loss(%)
1	A	4.316	1.099	4.315	1.099	99.98	0.00
2	A	4.316	1.101	4.316	1.101	100.00	0.00
3	A	4.316	1.102	4.316	1.102	100.00	0.00
4	A	4.313	1.108	4.313	1.108	100.00	0.00
5	A	4.315	1.098	4.314	1.098	99.98	0.00
6	B	4.314	1.105	4.314	1.105	100.00	0.00
7	B	4.314	1.098	4.314	1.098	100.00	0.00
8	B	4.313	1.099	4.312	1.099	99.98	0.00
9	B	4.314	1.099	4.313	1.099	99.98	0.00
10	B	4.313	1.099	4.313	1.099	100.00	0.00
☐ Supplementary Information: Sample Condition A : at first cycle, in fully charged states(5 pcs) Sample Condition B : after 25th cycles ending in fully charged states(5 pcs)							

T4	SHOCK	Results
Requirements	No leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure.	☒ No leakage, ☒ No venting, ☒ No disassembly, ☒ No rupture, ☒ No fire, ☒ No voltage drop (Residual OCV not less than 90%) See below table

Sample No.	Sample Condition	Voltage Before Test(V)	Weight Before Test(g)	Voltage After Test(V)	Weight After Test(g)	Residual OCV(%)	Percent of Weight Loss(%)
1	A	4.315	1.099	4.315	1.099	100.00	0.00
2	A	4.316	1.101	4.316	1.101	100.00	0.00
3	A	4.316	1.102	4.316	1.102	100.00	0.00
4	A	4.313	1.108	4.313	1.108	100.00	0.00
5	A	4.314	1.098	4.314	1.098	100.00	0.00
6	B	4.314	1.105	4.314	1.105	100.00	0.00
7	B	4.314	1.098	4.313	1.098	99.98	0.00
8	B	4.312	1.099	4.312	1.099	100.00	0.00
9	B	4.313	1.099	4.313	1.099	100.00	0.00
10	B	4.313	1.099	4.313	1.099	100.00	0.00
☐ Supplementary Information: Sample Condition A : at first cycle, in fully charged states(5 pcs) Sample Condition B : after 25th cycles ending in fully charged states(5 pcs)							

T5	EXTERNAL SHORT-CIRCUIT	Results
Requirements	External temperature does not exceed 170 °C and there is no disassembly, no rupture and no fire within six hours of this test.	☒ No disassembly, ☒ No rupture ☒ No fire. ☒ External Temperature did not exceed 170 °C. see below table

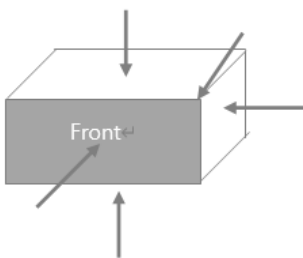
Sample No.	Sample Condition	Maximum Temperature(°C)	Test result
1	A	57.0	O
2	A	56.7	O
3	A	61.6	O
4	A	64.2	O
5	A	63.9	O
6	B	59.5	O
7	B	56.5	O
8	B	58.1	O
9	B	56.6	O
10	B	58.4	O
☐ Supplementary Information: Sample Condition A : at first cycle, in fully charged states(5 pcs) Sample Condition B : after 25th cycles ending in fully charged states(5 pcs) Test result : O-No Disassembly, No Rupture, No Fire / D-Disassembly / R-Rupture / F-Fire			

T6	☐ Impact / ☒ Crush	Results
Requirements	Cells and component cells meet this requirement if their external temperature does not exceed 170℃ and there is no disassembly and no fire during the test and within six hours after this test.	☒ External temperature did not exceed 170℃, ☒ no disassembly, ☒ no fire during test and within 6 hours after test See below table

Sample No.	Sample Condition	Voltage Before Test(V)	Maximum Temperature(℃)	Test result
T6-1	C	3.897	23.4	O
T6-2	C	3.898	23.2	O
T6-3	C	3.897	23.1	O
T6-4	C	3.898	23.3	O
T6-5	C	3.898	23.5	O
T6-6	D	3.898	23.1	O
T6-7	D	3.898	22.9	O
T6-8	D	3.898	23.2	O
T6-9	D	3.898	23.4	O
T6-10	D	3.898	23.2	O
☐ Supplementary Information: Sample Condition C : at first cycle, in 50% charged states(5 pcs) Sample Condition D : at 25th cycle, in 50% charged states(5 pcs) Test result : O-No Disassembly, No Fire / D-Disassembly / F-Fire				

T8	FORCED DISCHARGE	Results
Requirements	Rechargeable cells meet this requirement if there is no disassembly and no fire during the test and within seven days after the test.	☒ No disassembly, ☒ no rupture, ☒ no fire during the test and within seven days after the test. See below table

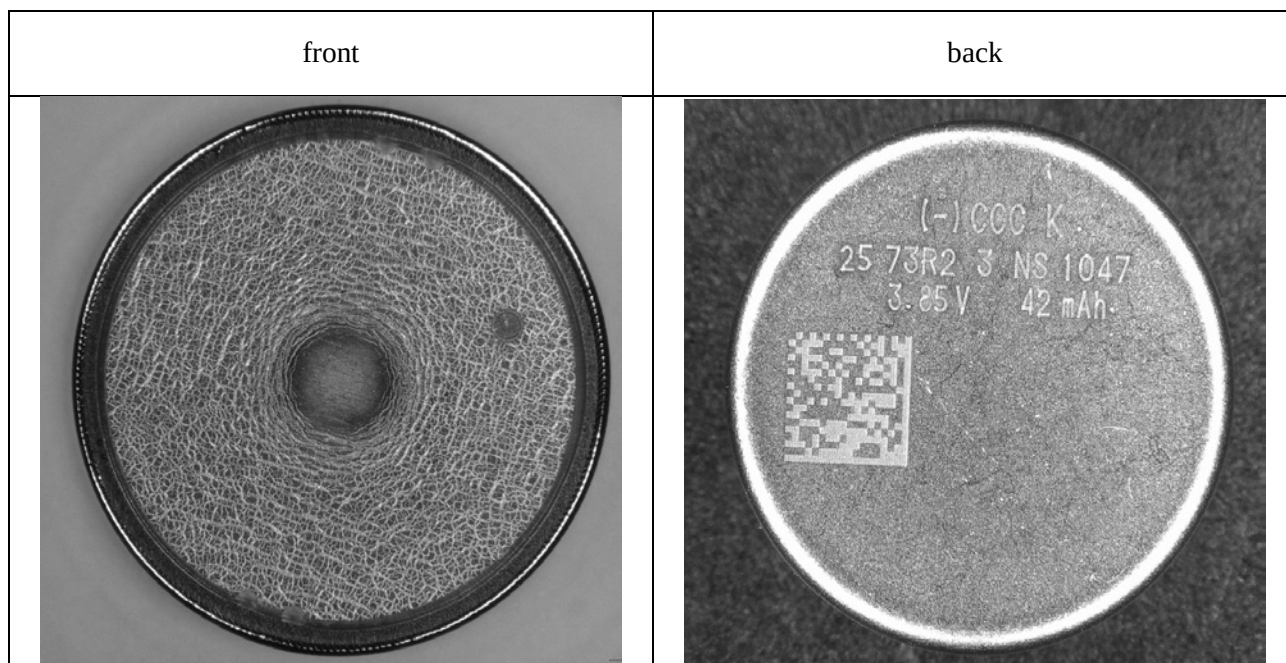
Sample No.	Sample Condition	Test result	Sample No.	Sample Condition	Test result
T8-1	E	O	T8-11	F	O
T8-2	E	O	T8-12	F	O
T8-3	E	O	T8-13	F	O
T8-4	E	O	T8-14	F	O
T8-5	E	O	T8-15	F	O
T8-6	E	O	T8-16	F	O
T8-7	E	O	T8-17	F	O
T8-8	E	O	T8-18	F	O
T8-9	E	O	T8-19	F	O
T8-10	E	O	T8-20	F	O
☐ Supplementary Information: Sample Condition E : at first cycle, in fully discharged states (10 pcs) Sample Condition F : after 25th cycles ending in fully discharged states(10 pcs) Test result : O-No Disassembly, No Fire / D-Disassembly / F-Fire ☐ Test Conditions Initial test current : 42 mAh, Test duration : 1 Hr					

P1	Package Drop Test	Results
Procedure	IATA Dangerous Goods Regulations Each package must be capable of withstanding a 1.2m drop test in any orientation 	☒ Without damage to cells or batteries contained therein, ☒ Without shifting of the contents so as to allow battery to battery(or Cell to cell) contact. ☒ Without release of contents See below photo

Cell Qty per box	Cell weight (kg)	Net weight per box (kg)
5120	0.001108	5.67296

	Before Test	After Test
Weight (kg)	8.055	8.055
Test result		

Sample Photo



Change History

Document No.	Modification
SDI-UN-250717-01	Newly created document
SDI-UN-250903-02	Cell Photo change

- End of Report -