UN TEST REPORT

Test Summary

Report Number.	SDI-UN-250806-01		
Date of issue.....	2025.08.06		
Test period	2025.06.11 ~ 2025.07.31		
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		
Physical description.....	Mobile phone battery		
Assembled Battery Testing Requirements.....	Not Applicable		
Description.....	Lithium ion battery (1 S - 1 P)		
Model Name	EB-BA166ASE		
Ratings	3.88V 4860 mAh (18.86 Wh)	Mass	64.500 ± 1.935g

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	Component cell
T-7	Overcharge	PASS	
T-8	Forced Discharge	PASS	Component cell

	Name	position	Signature	Date
Reported by	PARK DAE JUN	Engineer		2025. 08. 06
Approved by	Jung Min kyu	principal Engineer		2025. 08. 06

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	4.415	63.234	4.413	63.234	99.95	0.00
2	A	4.415	63.245	4.413	63.245	99.95	0.00
3	A	4.416	63.288	4.414	63.288	99.95	0.00
4	A	4.414	63.245	4.412	63.245	99.95	0.00
5	B	4.415	63.320	4.413	63.320	99.95	0.00
6	B	4.432	63.243	4.431	63.243	99.98	0.00
7	B	4.433	63.363	4.431	63.363	99.95	0.00
8	B	4.433	63.182	4.432	63.182	99.98	0.00

□ Supplementary Information:

Sample Condition A : at first cycle, in fully charged states(4 pcs)

Sample Condition B : after 25th cycles ending in fully charged states(4 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	4.413	63.234	4.340	63.232	98.35	0.00
2	A	4.413	63.245	4.337	63.245	98.28	0.00
3	A	4.414	63.288	4.339	63.287	98.30	0.00
4	A	4.412	63.245	4.337	63.244	98.30	0.00
5	B	4.413	63.320	4.340	63.318	98.35	0.00
6	B	4.431	63.243	4.358	63.242	98.35	0.00
7	B	4.431	63.363	4.362	63.360	98.44	0.00
8	B	4.432	63.182	4.359	63.180	98.35	0.00

□ Supplementary Information:

Sample Condition A : at first cycle, in fully charged states(4 pcs)

Sample Condition B : after 25th cycles ending in fully charged states(4 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	4.340	63.232	4.340	63.232	100.00	0.00
2	A	4.337	63.245	4.337	63.245	100.00	0.00
3	A	4.339	63.287	4.338	63.286	99.98	0.00
4	A	4.337	63.244	4.337	63.243	100.00	0.00
5	A	4.340	63.318	4.339	63.318	99.98	0.00
6	B	4.358	63.242	4.357	63.242	99.98	0.00
7	B	4.362	63.360	4.362	63.360	100.00	0.00
8	B	4.359	63.180	4.359	63.180	100.00	0.00

□ Supplementary Information:

Sample Condition A : at first cycle, in fully charged states(4 pcs)

Sample Condition B : after 25th cycles ending in fully charged states(4 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	4.340	63.232	4.340	63.232	100.00	0.00
2	A	4.337	63.245	4.337	63.245	100.00	0.00
3	A	4.338	63.286	4.337	63.286	99.98	0.00
4	A	4.337	63.243	4.336	63.243	99.98	0.00
5	B	4.339	63.318	4.339	63.318	100.00	0.00
6	B	4.357	63.242	4.357	63.242	100.00	0.00
7	B	4.362	63.360	4.362	63.360	100.00	0.00
8	B	4.359	63.180	4.359	63.180	100.00	0.00

□ Supplementary Information:

Sample Condition A : at first cycle, in fully charged states(4 pcs)

Sample Condition B : after 25th cycles ending in fully charged states(4 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	93.7	O
2	A	104.4	O
3	A	101.7	O
4	A	95.6	O
5	B	92.4	O
6	B	103.7	O
7	B	107.2	O
8	B	99.2	O

□ Supplementary Information:

Sample Condition A : at first cycle, in fully charged states(4 pcs)

Sample Condition B : after 25th cycles ending in fully charged states(4 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(°C)	Test result
T6-1	C	3.880	23.3	O
T6-2	C	3.880	23.1	O
T6-3	C	3.879	23.1	O
T6-4	C	3.881	23.2	O
T6-5	C	3.881	23.4	O
T6-6	D	3.905	23.1	O
T6-7	D	3.909	23.5	O
T6-8	D	3.907	22.9	O
T6-9	D	3.907	23.1	O
T6-10	D	3.909	23.4	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

T7	OVERCHARGE	Results
Requirements	Rechargeable batteries 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	Voltage Before Test(V)	Test result
T7-1	A	4.466	O
T7-2	A	4.452	O
T7-3	A	4.462	O
T7-4	A	4.464	O
T7-5	B	4.456	O
T7-6	B	4.445	O
T7-7	B	4.454	O
T7-8	B	4.459	O

□ Supplementary Information:

Sample Condition A : at first cycle, in fully charged states(4 pcs)

Sample Condition B : after 25th cycles ending in fully charged states(4 pcs)

Test result : O-No Disassembly, No Fire / D-Disassembly / F-Fire

□ Test Conditions

Charge voltage : 8.94V, Charge current : 12A, Test time : 24 Hr

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:

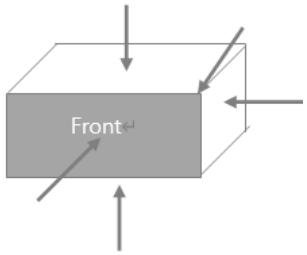
Sample Condition E : at first cycle, in fully discharged states (10 pcs)

Sample Condition F : after 25th cycles ending in fully discharged states(10 pcs)

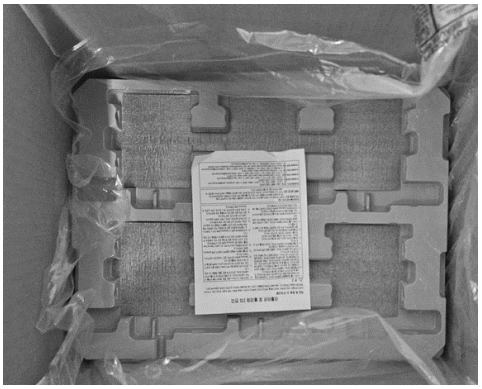
Test result : O-No Disassembly, No Fire / D-Disassembly / F-Fire

□ Test Conditions

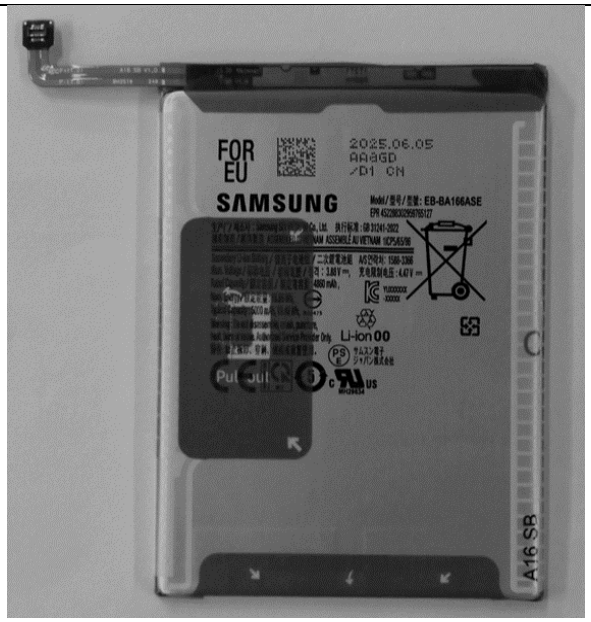
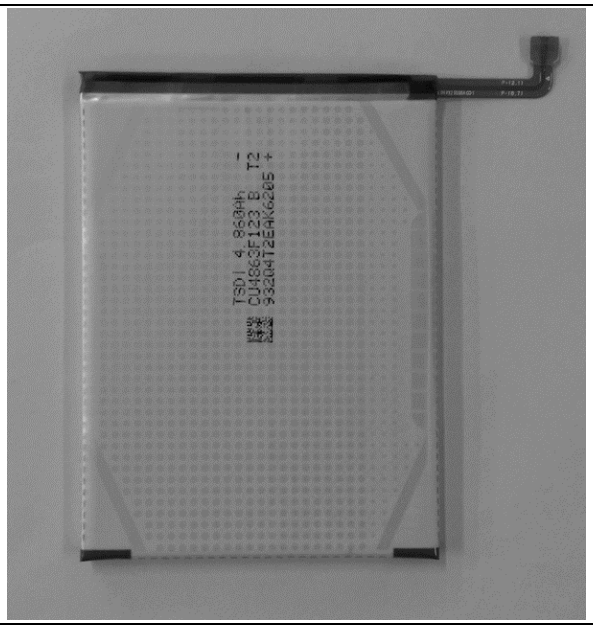
Initial test current : 4.860A, Test duration : 1hr

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

Battery Qty per box	Battery weight (kg)	Net weight per box (kg)
132	0.063	8.316

	Before Test	After Test
Weight (kg)	11.175	11.175
Test result		

Sample Photo

front	back
	

Change History

Document No.	Modification
SDI-UN-250806-01	Newly created document

- End of Report -