



LG Chem, Ltd.

188, Moonji-ro, Yuseong-gu, Daejeon, 305-738

Declaration

We, LG Chem, Ltd. hereby declares, that the product

Product Name : **Rechargeable Li-ion Battery Pack**

Regulatory Model Number : **L17L3P51**

Series Model Number : **L17L3P52**

Based on the request of SRICI, LG Chem, Ltd. submits a letter of authorization regarding below changes have no impact on UN38.3 test report. LG Chem, Ltd. confirms all specifications are identical except for below changes.

Difference

- Only model number is different. Ratings and design are fully same.
- One hook was applied in upper side for new system type.

Sample – L17L3P51



Sample – L17L3P52 (Series model of L17L3P51)



Date: June 29th, 2017

Name / Title: Dae Ho Nam / Senior Manager



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CERTIFICATE OF COMPLIANCE

The following product has been evaluated according to the 5th revised edition Amendment2 of the UN Manual of Tests and Criteria.

We, LG Chem, Ltd., hereby certify that this battery meets the requirements of the regulation for transportation of lithium-ion cells and batteries and single cell batteries.

<input type="checkbox"/> Lithium-ion cell <input checked="" type="checkbox"/> Lithium-ion battery <input type="checkbox"/> Lithium-ion single cell battery	
Model name	L17L3P51
Cell Model name	ICP595490L1
Nominal voltage	11.1 V
Electric power capacity	45 Wh

Conducted By: Min Je Woo

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Document Number	QDI-170516-B-L17L3P51	
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Approved	DaeHo Nam	<i>[Signature]</i>

UN38.3 Test Report

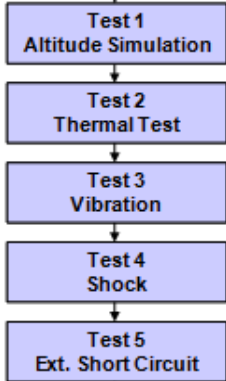
- L17L3P51 (Nom.45Wh, 11.1V)-

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2017. 05. 16

1. UN38.3 Test Condition

Test item	Test Condition	Requirements	Etc.
Test 1. Altitude Simulation	Storing at (low pressure)11.6kPa for 6hr at 20+/-5℃	<ul style="list-style-type: none"> - After OCV (%) ≥ 90% - No leakage, no venting, no disassembly, no rupture, no fire - Mass loss limit (leakage) <ol style="list-style-type: none"> 1) If $M < 1g$, less than 0.5%, 2) If $1g \leq M \leq 75g$, less than 0.2%, 3) If $M > 75g$, less than 0.1% 	T1~T5 : Sequence Tests  <pre> graph TD T1[Test 1 Altitude Simulation] --> T2[Test 2 Thermal Test] T2 --> T3[Test 3 Vibration] T3 --> T4[Test 4 Shock] T4 --> T5[Test 5 Ext. Short Circuit] </pre>
Test 2. Thermal Test	[72±2℃,6hr ↔ -40±2℃,6hr, interval max. 30min] x 10cycle Storing at 20±5℃ for 24h		
Test 3. Vibration	[7Hz↔200Hz↔7Hz, in 15min] x 12 times x 3 direction 1) sinusoidal waveform with a logarithmic sweep 2) 7Hz 18Hz (maintaining 1g) app. 50Hz (until 8gn) 200Hz (maintaining 8gn), 1.6mm total excursion		
Test 4. Shock	Half sine shock (peak acceleration : 150gn, pulse duration : 6msec) x 6 (±x, y, z), direction x 3 cycle		
Test 5. External Short Circuit	100mΩ ext. short-circuit at 55±2℃ 1hr continue after returning at 55±2℃		
Test 6. Impact	Φ=15.8±0.1mm bar, 9.1±0.1kg mass, 61±2.5cm height	<ul style="list-style-type: none"> - No disassembly, no fire within 6 hours after the test - Max. Temp ≤ 170℃ 	for cylindrical cells (not less than 18mm diameter)
Test 6. Crush	Crushing rate :1.5cm/s, until 13kN±0.78kN or 100mV drop or 50% deformation		for cylindrical cells (less than 18mm diameter) for prismatic, pouch, coin/button cells
Test 7. Overcharge	Current = Manufacturer's recommended max. continuous charge current X 2 Voltage 1.If charge voltage ≤ 18V, V (min.) = 2 x (max. charge voltage) or 22V. 2.If charge voltage > 18V, V (min.) = 1.2 x (max. charge voltage)	<ul style="list-style-type: none"> - No disassembly, no fire within 7 days after the test 	Only for Single Cell Battery / Battery
Test 8. Forced Discharge	Discharge at max. discharge current (connecting in series with 12V DC power supply), Duration time = rated capacity/initial test current	<ul style="list-style-type: none"> - No disassembly, no fire within 7 days after the test 	Resistance of Electric Loader 1/Ω = (max. discharge current) / (12 + Initial OCV)

2. General Information

1. Standard charge / discharge Condition

	Mode	Condition	End Condition
Charge	CC / CV	Current = 3945 mA Voltage = 12.6 V	Current = 198 mA
Discharge	CC	Current = 789 mA	Voltage = 9.0 V

2. Cycle Condition

	Mode	Condition	End Condition
Charge	CC / CV	Current = 3945 mA Voltage = 12.6 V	Current = 198 mA
Discharge	CC	Current = 789 mA	Voltage = 9.0 V

3. Test Condition

	Mode	Condition
Test 7. Overcharge	CC / CV	Max. Charge Current = 3945 mA CC/CV 2Imax (7890mA) 22 V cut-off 24Hr
Test 8. Forced Discharge	CC	Max. Discharge Current = 3945 mA Duration Time = 60.5 min

3-1. T1-T4 Test Result

Before			Altitude (T1)					Thermal (T2)					Vibration (T3)					Shock (T4)				
NO.	OCV	Mass (g)	After OCV (V)	Mass (g)	After OCV(%)	Mass Loss(%)	Result	After OCV (V)	Mass (g)	After OCV(%)	Mass Loss(%)	Result	After OCV (V)	Mass (g)	After OCV(%)	Mass Loss(%)	Result	After OCV (V)	Mass (g)	After OCV(%)	Mass Loss(%)	Result

A. 1st cycle fully charged state

1	12.571	215.40	12.559	215.38	99.90	0.009	Pass	12.413	215.38	98.84	0.000	Pass	12.314	215.37	99.20	0.005	Pass	12.283	215.36	99.75	0.005	Pass
2	12.543	215.55	12.522	215.54	99.83	0.005	Pass	12.385	215.53	98.91	0.005	Pass	12.295	215.51	99.27	0.009	Pass	12.234	215.50	99.50	0.005	Pass
3	12.541	215.37	12.521	215.36	99.84	0.005	Pass	12.391	215.36	98.96	0.000	Pass	12.283	215.35	99.13	0.005	Pass	12.242	215.34	99.67	0.005	Pass
4	12.540	215.30	12.519	215.30	99.83	0.000	Pass	12.401	215.28	99.06	0.009	Pass	12.285	215.28	99.06	0.000	Pass	12.241	215.27	99.64	0.005	Pass

B. 50th cycle fully charged state

5	12.562	215.42	12.546	215.40	99.87	0.009	Pass	12.418	215.40	98.98	0.000	Pass	12.296	215.39	99.02	0.005	Pass	12.272	215.37	99.80	0.009	Pass
6	12.561	215.55	12.545	215.53	99.87	0.009	Pass	12.409	215.53	98.92	0.000	Pass	12.288	215.52	99.02	0.005	Pass	12.251	215.52	99.70	0.000	Pass
7	12.566	215.62	12.551	215.61	99.88	0.005	Pass	12.413	215.61	98.90	0.000	Pass	12.293	215.61	99.03	0.000	Pass	12.266	215.60	99.78	0.005	Pass
8	12.569	215.52	12.554	215.52	99.88	0.000	Pass	12.415	215.51	98.89	0.005	Pass	12.298	215.50	99.06	0.005	Pass	12.269	215.49	99.76	0.005	Pass

3-2. T5/T7 Test Result

EXT.Short Circuit (T5)

NO.	Initial OCV(V)	Max. Temp (°C)	Result
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A. 1st cycle fully charged state

1	12.283	55.51	Pass
2	12.234	55.82	Pass
3	12.242	55.41	Pass
4	12.241	54.74	Pass

B. 50th cycle fully charged state

5	12.272	55.83	Pass
6	12.251	55.81	Pass
7	12.266	55.42	Pass
8	12.269	55.18	Pass

Over Charge (T7)

NO.	Initial OCV(V)	Max. Temp (°C)	Result
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A. 1st cycle fully charged state

9	12.543	24.77	Pass
10	12.544	24.65	Pass
11	12.545	23.56	Pass
12	12.541	23.78	Pass

Over Charge (T7)

NO.	Initial OCV(V)	Max. Temp (°C)	Result
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B. 50th cycle fully charged state

13	12.522	23.74	Pass
14	12.523	23.87	Pass
15	12.521	24.03	Pass
16	12.525	23.69	Pass

3-3. T6/T8 Test Result (ICP595490L1)

Crush (T6)			
NO.	Initial OCV(V)	Max. Temp (°C)	Result

A. 1st cycle 50% charged state

C-1	3.733	24.25	Pass
C-2	3.723	23.95	Pass
C-3	3.724	23.69	Pass
C-4	3.733	23.45	Pass
C-5	3.727	23.47	Pass

Forced Discharge (T8)							
NO.	Initial OCV(V)	Max. Temp (°C)	Result	NO.	Initial OCV(V)	Max. Temp (°C)	Result

A. 1st cycle fully discharged state

C-6	3.396	80.41	Pass
C-7	3.395	81.99	Pass
C-8	3.399	86.40	Pass
C-9	3.401	79.60	Pass
C-10	3.397	90.31	Pass
C-11	3.980	81.89	Pass
C-12	3.399	84.08	Pass
C-13	3.398	81.53	Pass
C-14	3.398	82.76	Pass
C-15	3.400	73.80	Pass

B. 50th cycle fully discharged state

C-16	3.780	88.63	Pass
C-17	3.588	78.32	Pass
C-18	3.542	99.41	Pass
C-19	3.591	76.73	Pass
C-20	3.605	88.63	Pass
C-21	3.616	81.87	Pass
C-22	3.572	86.43	Pass
C-23	3.581	88.18	Pass
C-24	3.612	88.15	Pass
C-25	3.578	85.56	Pass

4. Sample Image



Lenovo

M2xL4

M2xL4

Lenovo, ThinkPad is the trademark of Lenovo, used under license.
 Lenovo, ThinkPad is the trademark of Lenovo Group Co., Ltd., used under license.
 Rechargeable Li-ion Battery Pack / 충전식 리튬 이온 배터리
 NOM 11.1V 4.05Ah/45Wh 锂离子电池组
 额定容量: 3880mAh 充电限制电压: 12.6V



CAUTION: Replace with same type only. Use of another battery may present a fire or explosion
 PLEASE REFER TO USER MANUAL OR FOLLOW LOCAL ORDINANCES AND/OR REGULATIONS FOR DISPOSAL

注意: 用错误型号电池更换会有爆炸危险, 务必按照说明处置用完的电池
 注意: 用错误型号电池更换会有爆炸危险, 务必按照说明处置用完的电池
 EU contact: Lenovo, Einstrinova 21,854 01 Bratislava, Slovakia

Model Name型号: L17L3P51
 ASM P/N : SB10K97606
 FRU P/N : 01AV445

IS 16046/IEC 62133



TIS 2217-2548
 Lenovo (Thailand) Limited

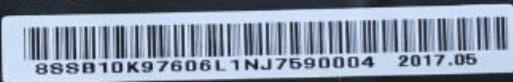
3ICP6/55/90
 For Use With ThinkPad
 Manufactured By LG Chem, Ltd.
 Cell made in China Pack processed in China
 制造地: 中国 / 中国
 制造商: LG Chem, Ltd.



제조사명 : LG Chem (Nanjing) & E Materials Co., Ltd.
 연락처 : 1670-0088



11.1V 3.88Ah
 レノボ・ジャパン株式会社



US & Canada Only



DANGER DO NOT OPEN OR EXPOSE TO HEAT ABOVE 100°C
 FARA ÖPPNA INTE BATTERIET OCH UTSÄTT DET INTE FÖR VÄRME ÖVER 100°C
 GEVAAR! NIET OPENEN, NIET BLOOTSTELLEN AAN TEMPERATUREN BOVEN 100°C
 FARLIG! MÅ IKKE ÅPNE ELLER UDSÆTTES FOR TEMPERATUREN OVER 100°C
 DANGER! NE PAS OUVRIER NI EXPOSER À PLUS DE 100°C
 FARE MÅ IKKE ÅPNE ELLER UTSETTES FOR VARME OVER 100°C
 VAARA ÄLÄ NÄMÄ AUKKUA ÄLÄVÄ KÜUMENNA SITÄ YLI 100 ASTEEN LÄMPÖTILAA
 PERIGO NÃO ABRA OU EXPOÑHA A AQUECIMENTO ACIMA DE 100°C
 PELIGRO NO ABRIR O EXPONER A TEMPERATURAS SUPERIORES A 100°C
 PERIGO NÃO ABRIR NEM EXPOR A TEMPERATURAS SUPERIORES A 100°C
 ATTENZIONE! NON APRIRE O RISCALDARE AD UNA TEMPERATURA SUPERIORE AI 100°C
 VORSICHT! NICHT REPARIEREN ODER ZERLEGEN, MIT WASSER IN BERÜHRUNG BRINGEN ODER ÜBER 100°C ERHITZEN



危険 発熱、発火、破裂の恐れがあるため。
 ●衝撃を与えないでください。衝撃を与えたバッテリー・パックは、使用をやめてください。
 ●稼働時間が短くなったバッテリー・パックは新しいものと交換してください。
 ●分解・破損、火中への投下、100°C以上の加熱、および高温での使用・放置をしないでください。
 ●指定の充電方法以外で充電しないでください。
 ●バッテリー・パックの金属端子をショート(短絡)させないでください。
 위험 본체나 100°C 이상 가열 하지 마십시오.
 危險 禁止拆解、撞击、挤压或投入火中。若出现严重鼓胀，请勿继续使用。
 请勿置于高温环境中，电池浸水后禁止使用！



Li-ion00
 使用后はリサイクルへ



min. 3880mAh