

SEW

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Sony Electronics (Wuxi) Co., Ltd.

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リチウムイオン電池認証書

Lithium-ion rechargeable (polymer) cell or battery Certification

No: SEW-PC1501

Date: 15.01.13

- 1. 単電池/single cell single cell battery  
組電池/battery(pack) (セル構成/composition of cell : 1P3S )
- 2. 機種名/customer model name : 45N1110 Sony model name : LIS3098
- 3. 顧客名/customer : Lenovo
- 4. 国連勧告テスト結果/Test results of the UN Recommendations on the Transport of Dangerous Goods

国連勧告テスト及び判定基準 (38.3 リチウム電池)		テスト結果/ test results	備考/remarks
NO	テスト項目 test item		
T1	高度シミュレーション/Altitude simulation	OK	
T2	温度試験/Thermal test	OK	
T3	振動/Vibration	OK	
T4	衝撃/Shock	OK	
T5	外部短絡/External short circuit	OK	
T6	衝突 (Impact) /圧壊 (Crush)	OK	
T7	過充電/Overcharge	OK	single cell は対象外
T8	強制放電/Forced discharge	OK	

試験実施日/Tested Date : 2013/12/16~2013/12/26


梱包試験実施日/Tested Date for Package : 2012/12/04~2012/12/07

5. 定格/rated

項目/item	規格値/specification	備考/remarks
公称電圧/nominal voltage	11.1 V	
定格容量/rated capacity	2090 mAh	
ワット時定格値(Wh) /Watt-hour rating	24 Wh	単電池 ≤ 20Wh 組電池 ≤ 100Wh cells ≤ 20Wh batteries ≤ 100Wh

上記テスト結果は国連勧告試験(UN Manual of Tests and Criteria 5<sup>th</sup> revised edition Amendment 2, Part III, sub-section 38.3)に従い確認した結果であることを証明いたします。

We, Sony Electronics (Wuxi) Co., Ltd., hereby certify that above results are confirmed in accordance with the Manual of Tests and Criteria of the UN Recommendations on the Transport of Dangerous Goods, 5<sup>th</sup> revised edition Amendment 2, Part III, sub-section 38.3.

  
 Weiwei Tang /Senior Manager  
 Quality Assurance Department  
 Sony Electronics (Wuxi) Co., Ltd.

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国联劝告 结果 1

Test Result of UN Recommendations Part 1

No: SEW-PC1501

DATE: 2015.01.13

PAGE: 2 of 5 Page

机种名/Sony Model Name	LIS3098LVPC		
cell使用/Cell Model Name	US673864K6S	构成/Configuration	1P 3S
试验场所/Test Company	索尼电子(无锡)有限公司		
地址/ Address	中国江苏省无锡市新区长江路27号	电话/Tel	86-18068308951
试验室/Test Room	SEW国联劝告试验室	试验期间/Test Dates	2013.12.16~2013.12.26
判定基准/Criterion	UN Manual of Tests and Criteria Rev5, Part III, sub-section 38.3		

试验名称/Test Name		T1: 高度模拟试验 Altitude Simulation				质量减少率/ Mass Loss (0.1%以下)	OCV维持率/ Residual OCV (90%以上)	现象确认/ Occurrence
番号 No.	电池状态 Conditions	试验前/Before		试验后/After				
		Mass(g)	OCV (V)	Mass(g)	OCV (V)			
1	初回满充电/ First cycle, fully charged	130.270	12.312	130.270	12.304	0.00%	99.9%	N
2		130.150	12.398	130.150	12.381	0.00%	99.9%	N
3		130.180	12.428	130.180	12.423	0.00%	100.0%	N
4		130.160	12.342	130.160	12.337	0.00%	100.0%	N
5	50次循环后满充 电/ After 50 cycles, fully charged	130.210	12.354	130.210	12.349	0.00%	100.0%	N
6		130.250	12.361	130.250	12.357	0.00%	100.0%	N
7		130.250	12.460	130.250	12.451	0.00%	99.9%	N
8		130.260	12.367	130.260	12.360	0.00%	99.9%	N

试验名称/Test Name		T2: 温度试验 Thermal				质量减少率/ Mass Loss (0.1%以下)	OCV维持率/ Residual OCV (90%以上)	现象确认/ Occurrence
番号 No.	电池状态 Conditions	试验前/Before		试验后/After				
		Mass(g)	OCV (V)	Mass(g)	OCV (V)			
1	初回满充电/ First cycle, fully charged	130.270	12.304	130.260	12.232	0.00%	99.4%	N
2		130.150	12.381	130.140	12.332	0.00%	99.6%	N
3		130.180	12.423	130.180	12.272	0.00%	98.8%	N
4		130.160	12.337	130.160	12.248	0.00%	99.3%	N
5	50次循环后满充 电/ After 50 cycles, fully charged	130.210	12.349	130.210	12.263	0.00%	99.3%	N
6		130.250	12.357	130.240	12.261	0.00%	99.2%	N
7		130.250	12.451	130.250	12.332	0.00%	99.0%	N
8		130.260	12.360	130.260	12.267	0.00%	99.2%	N

试验名称/Test Name		T3: 振动试验 Vibration				质量减少率/ Mass Loss (0.1%以下)	OCV维持率/ Residual OCV (90%以上)	现象确认/ Occurrence
番号 No.	电池状态 Conditions	试验前/Before		试验后/After				
		Mass(g)	OCV (V)	Mass(g)	OCV (V)			
1	初回满充电/ First cycle, fully charged	130.260	12.232	130.260	12.227	0.00%	100.0%	N
2		130.140	12.332	130.140	12.327	0.00%	100.0%	N
3		130.180	12.272	130.180	12.272	0.00%	100.0%	N
4		130.160	12.248	130.160	12.250	0.00%	100.0%	N
5	50次循环后满充 电/ After 50 cycles, fully charged	130.210	12.263	130.210	12.258	0.00%	100.0%	N
6		130.240	12.261	130.240	12.256	0.00%	100.0%	N
7		130.250	12.332	130.250	12.332	0.00%	100.0%	N
8		130.260	12.267	130.260	12.262	0.00%	100.0%	N

现象/Occurrence	破裂:R <Rupture> 起火:F <Fire> 解体:D <Disassembly> 排气:V <Venting> 渗漏:L <Leakage> 无异常:N <No rupture, No fire, No disassembly, No venting, No leakage>
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## 国联劝告试验 结果 2

## Test Result of UN Recommendations Part 2

试验名称/Test Name		T4: 冲击试验 Shock						
番号 No.	电池状态 Conditions	试验前/Before		试验后/After		质量减少率/ Mass Loss (0.1%以下)	OCV维持率/ Residual OCV (90%以上)	现象确认/ Occurrence
		Mass(g)	OCV (V)	Mass(g)	OCV (V)			
1	初回满充电/ First cycle, fully charged	130.260	12.227	130.260	12.226	0.00%	100.0%	N
2		130.140	12.327	130.140	12.325	0.00%	100.0%	N
3		130.180	12.272	130.180	12.272	0.00%	100.0%	N
4		130.160	12.250	130.160	12.249	0.00%	100.0%	N
5	50次循环后满充 电/ After 50 cycles, fully charged	130.210	12.258	130.210	12.258	0.00%	100.0%	N
6		130.240	12.256	130.240	12.256	0.00%	100.0%	N
7		130.250	12.332	130.250	12.331	0.00%	100.0%	N
8		130.260	12.262	130.260	12.262	0.00%	100.0%	N
现象/Occurrence		破裂:R <Rupture> 起火:F <Fire> 解体:D <Disassembly> 排气:V <Venting> 渗漏:L <Leakage> 无异常:N <No rupture, No fire, No disassembly, No venting, No leakage>						
试验名称/Test Name		T5: 外短路试验 External Short Circuit						
番号 No.	电池状态 Conditions	最大表面温度/Max. Surface Temperature (°C) 170°C	现象确认/ Occurrence	番号 No.	电池状态 Conditions	最大表面温度/Max. Surface Temperature (°C) 170°C	现象确认/ Occurrence	
1	初回满充电/ First cycle, fully charged	57.4°C	N	5	50次循环后满充电 / After 50 cycles, fully charged	55.9°C	N	
2		57.0°C	N	6		55.9°C	N	
3		56.9°C	N	7		55.9°C	N	
4		56.8°C	N	8		55.9°C	N	
现象/Occurrence		破裂:R <Rupture> 起火:F <Fire> 解体:D <Disassembly> 无异常:N <No rupture, No fire, No disassembly>						
试验名称/Test Name		T6: 撞击(impact)/挤压(crush) 试验						
番号 No.	电池状态 Conditions	最大表面温度/Max. Surface Temperature (°C) 170°C	现象确认/Occurrence					
1	初回	<160°C	N					
2	50%充电	<160°C	N					
3	(宽面)/	<160°C	N					
4	First cycle, 50% charged	<160°C	N					
5	(wide surface)	<160°C	N					
现象/Occurrence		解体: D <Disassembly> 起火: F <Fire> 无异常: N <No fire, No disassembly>						
试验名称/Test Name		T7: 过充电试验 Overcharge						
番号 No.	电池状态 Conditions	现象确认/Occurrence		番号 No.	电池状态 Conditions	现象确认/Occurrence		
1	初回满充电/ First cycle, fully charged	N		5	50次循环后 满充电/ After 50 cycles, fully charged	N		
2		N		6		N		
3		N		7		N		
4		N		8		N		
现象/Occurrence		起火: F <Fire> 解体: D <Disassembly> 无异常: N <No fire, No disassembly>						

\* Temperature Measurement by Thermolabel

No.: SEW-PC1501

DATE: 2015.01.13

PAGE: 4 of 5 Page

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### 国联劝告试验 结果 3

### Test Result of UN Recommendations Part 3

试验名称 / Test Name		T8: 强制放电 Forced Discharge			
番号 No.	电池状态 Conditions	现象确认 / Occurrence	番号 No.	电池状态 Conditions	现象确认 / Occurrence
1	初次循环 完全放电 / First cycle, fully discharged	N	11	50次循环后 完全放电 / After 50 cycles, fully discharged	N
2		N	12		N
3		N	13		N
4		N	14		N
5		N	15		N
6		N	16		N
7		N	17		N
8		N	18		N
9		N	19		N
10		N	20		N
现象 / Occurrence		起火:F <Fire> 解体:D <Disassembly> 无异常:N <No fire, No disassembly>			