

Sony Electronics (Wuxi) Co., Ltd.

No.27, Changjiang Road, New District, Wuxi, Jiangsu Province, 214028 P.R.C.

Phone: 86-510-8523-9120 / Fax: 86-510-8523-8505

## リチウムイオン電池認証書

## Lithium-ion rechargeable (polymer) cell or battery Certification

No: SEW-CB13198

Date:2013-12-23

1. 単電池/single cell single cell battery  
組電池/battery(pack) (セル構成/composition of cell : 1P1S )

2. 機種名/customer model name : EL40 Sony model name : LIS1544MRPC

3. 顧客名/customer : MOTOROLA

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 : 2013/12/9~2013/12/19

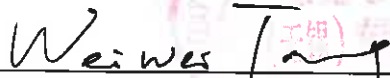
梱包試験実施日/Tested Date for Package : 2013/11/11~2013/11/14

5. 定格/rated

項目/item	規格値/specification	備考/remarks
公称電圧/nominal voltage	3.8V	
定格容量/rated capacity	1860mAh	
ワート時定格値(Wh) /Watt-hour rating	7.4Wh	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 5th revised edition Amendment 1, 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, 5th revised edition Amendment 1, Part III, sub-section 38.3.

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

机种名/Sony Model Name	LIS1544MRPC		
cell使用/Cell Model Name	US405074H2	构成/Configuration	1P 1S
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	2013.12.9-2013.12.19
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	
番号 No.	电池状态 Conditions	试验前/Before	试验后/After	OCV维持率/ Residual OCV (90%以上)	现象确认/ Occurrence
		OCV (V)	OCV (V)		
1	初回满充电/ First cycle, fully charged	4.32	4.295	99.5	N
2		4.321	4.298	99.5	N
3		4.319	4.299	99.5	N
4		4.312	4.306	99.9	N
5		4.316	4.308	99.8	N
6		4.319	4.312	99.8	N
7		4.309	4.302	99.8	N
8		4.315	4.310	99.9	N
9		4.313	4.309	99.9	N
10		4.312	4.308	99.9	N

试验名称/Test Name		T2: 温度试验		Thermal	
番号 No.	电池状态 Conditions	试验前/Before	试验后/After	OCV维持率/ Residual OCV (90%以上)	现象确认/ Occurrence
		OCV (V)	OCV (V)		
1	初回满充电/ First cycle, fully charged	4.295	4.245	98.8	N
2		4.298	4.248	98.8	N
3		4.299	4.245	98.7	N
4		4.306	4.244	98.6	N
5		4.308	4.235	98.3	N
6		4.312	4.251	98.6	N
7		4.302	4.230	98.3	N
8		4.310	4.248	98.6	N
9		4.309	4.250	98.6	N
10		4.308	4.248	98.6	N

试验名称/Test Name		T3: 振动试验		Vibration	
番号 No.	电池状态 Conditions	试验前/Before	试验后/After	OCV维持率/ Residual OCV (90%以上)	现象确认/ Occurrence
		OCV (V)	OCV (V)		
1	初回满充电/ First cycle, fully charged	4.245	4.241	99.9	N
2		4.248	4.243	99.9	N
3		4.245	4.242	99.9	N
4		4.244	4.243	100.0	N
5		4.235	4.231	99.9	N
6		4.251	4.244	99.8	N
7		4.230	4.228	100.0	N
8		4.248	4.245	99.9	N
9		4.250	4.243	99.8	N
10		4.248	4.244	99.9	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	OCV维持率/ Residual OCV (90%以上)	现象确认/ Occurrence
		OCV (V)	OCV (V)		
1	初回满充电/ First cycle, fully charged	4.241	4.240	100.0	N
2		4.243	4.243	100.0	N
3		4.242	4.242	100.0	N
4		4.243	4.242	100.0	N
5		4.231	4.231	100.0	N
6		4.244	4.243	100.0	N
7		4.228	4.228	100.0	N
8		4.245	4.244	100.0	N
9		4.243	4.243	100.0	N
10		4.244	4.244	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/O ccurrence	番号 No.	电池状态 Conditions	最大表面温度/Max. Surface Temperature (°C) 170°C	现象确认/O ccurrence
1	初回满充电/ First cycle, fully charged	55.7°C	N	6	初回满充电/ First cycle, fully charged	55.6°C	N
2		55.3°C	N	7		55.3°C	N
3		55.3°C	N	8		55.3°C	N
4		55.3°C	N	9		55.3°C	N
5		55.3°C	N	10		55.3°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,	<160°C	N
5	50% charged (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

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国联劝告试验 结果 3

Test Result of UN Recommendations Part 3

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试验名称 /Test Name		T8: 强制放电 Forced Discharge			
番号 N	电池状态 Conditions	现象确认 /Occurrence	番号 N	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>			

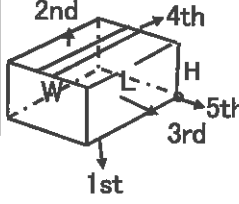
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国連勧告試験 梱包結果

Test Result of UN Recommendations for Package

No : SEW-CB13198  
 DATE 2013.12.23  
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試験場所/ Test Company	索尼电子(无锡)有限公司			
住所/ Address	中国江苏省无锡市新区长江路27号		電話/ Tel	86-18068308951
試験室/ Test Room	SEW国联劝告試験室	試験期間/ Test Dates	2013.11.11-2013.11.14	試験番号/ Test N
機種名/ Sony Model Name	LIS1544MRPC		梱包入り数/ Quantity	160 pcs
使用セル/ Cell Model Name	US405074H2	構成/ Configuration	1P1S	梱包製造所/ Package Factor
包装等級/ Packing Group	等級 II /Packing Group Number II			
寸法・質量/ Dimensions and Gross Weight	長辺/Length (L)	短辺 /Wide (W)	高さ/Height (H)	質量 /Gross Weight (kg)
	400 mm	300 mm	160 mm	9.0 kg

■ 落下試験/Drop Test			
試験設備	HORAD PD-315		
試験条件/ Test condition	落下高さ /Drop height	1.2m	試験結果 /Occurrence
落下姿勢(方向)/ Five (one for each drop) 	1回目の落下試験	底面を水平に/ flat on the bottom	著しい破損なし/No Leakage, No damage liable to affect safety during
	2回目の落下試験	天面を水平に / flat on the top	著しい破損なし/No Leakage, No damage liable to affect safety during
	3回目の落下試験	長側面を水平に/ flat on the long side	著しい破損なし/No Leakage, No damage liable to affect safety during
	4回目の落下試験	短側面を水平に/ flat on the short side	著しい破損なし/No Leakage, No damage liable to affect safety during
	5回目の落下試験	コーナー(角)※/ on a corner	著しい破損なし/No Leakage, No damage liable to affect safety during
※コーナー: 容器が最も破損を受ける方向を選択			
判定基準/ Criterion	外装容器及び袋の場合、外装容器の最も外側の層に輸送中の安全を脅かすようないかなる破損が生じてはならない。		判定/ Judgment
			合格/OK

■ 積み重ね試験/Stacking Test			
試験条件/Test condition	No	試験結果 /Occurrence	
試験荷重値/Weight Load	165 kg	1	漏洩・破損・歪みなし/No leakage, No distortion, No deterioration
		2	漏洩・破損・歪みなし/No leakage, No distortion, No deterioration
		3	漏洩・破損・歪みなし/No leakage, No distortion, No deterioration
判定基準/ Criterion	試供品は漏洩があってはならない。試供品は、輸送の安全性を損なうような劣化、又はその強度を減じたり、又は輸送物の積み重ねを不安定にするような歪みが生じてはならない。		判定/ Judgment
			合格/OK

*Weiwei Tang*

Weiwei Tang / Senior Manager  
 Quality Assurance Department  
 Sony Electronics (Wuxi) Co., Ltd.  
 品保-P検-022(3)

総合判定  
**合格/OK**

**Manufacturer:**

Sony Electronics (Wuxi) Co., Ltd.

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## Test Laboratory:

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