

SEW

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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-CB1521

Date: 2015-02-17

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 : FC40 Sony model name : LIS1587MRPC
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 : 2015/01/30~2015/02/17

梱包試験実施日 / Tested Date for Package : 2015/01/26~2015/01/29

## 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	2315mAh	
ワート時定格値(Wh) / Watt-hour rating	8.8Wh	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 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, 5th revised edition Amendment 2, Part III, sub-section 38.3.

  
 Weiwei Tang / Senior Manager  
 Quality Assurance Department  
 Sony Electronics (Wuxi) Co., Ltd.  
 品保-報告-039(8) 索尼(中国)有限公司  


## 国联劝告 结果 1

DATE: 2015.2.17

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## Test Result of UN Recommendations Part 1

PAGE: 2 of 5 Page

机种名/Sony Model Name	LIS1587MRPC		
cell使用/Cell Model Name	US425179H4	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	2015.1.30-2015.2.17
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		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	38.373	4.308	38.373	4.303	0.00%	99.9%	N
2		38.383	4.304	38.383	4.298	0.00%	99.9%	N
3		38.393	4.313	38.393	4.307	0.00%	99.9%	N
4		38.371	4.301	38.371	4.296	0.00%	99.9%	N
5		38.385	4.300	38.384	4.294	0.00%	99.9%	N
6		38.362	4.299	38.361	4.294	0.00%	99.9%	N
7		38.412	4.306	38.412	4.301	0.00%	99.9%	N
8		38.356	4.309	38.355	4.303	0.00%	99.9%	N
9		38.404	4.300	38.404	4.295	0.00%	99.9%	N
10		38.393	4.303	38.393	4.298	0.00%	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		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	38.373	4.303	38.372	4.241	0.00%	98.6%	N
2		38.383	4.298	38.379	4.239	0.01%	98.6%	N
3		38.393	4.307	38.387	4.244	0.02%	98.5%	N
4		38.371	4.296	38.364	4.237	0.02%	98.6%	N
5		38.384	4.294	38.380	4.237	0.01%	98.7%	N
6		38.361	4.294	38.359	4.235	0.01%	98.6%	N
7		38.412	4.301	38.411	4.239	0.00%	98.6%	N
8		38.355	4.303	38.353	4.241	0.01%	98.6%	N
9		38.404	4.295	38.402	4.235	0.01%	98.6%	N
10		38.393	4.298	38.391	4.237	0.01%	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		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	38.372	4.241	38.372	4.240	0.00%	100.0%	N
2		38.379	4.239	38.379	4.237	0.00%	100.0%	N
3		38.387	4.244	38.386	4.241	0.00%	99.9%	N
4		38.364	4.237	38.363	4.235	0.00%	100.0%	N
5		38.380	4.237	38.380	4.236	0.00%	100.0%	N
6		38.359	4.235	38.358	4.230	0.00%	99.9%	N
7		38.411	4.239	38.410	4.233	0.00%	99.9%	N
8		38.353	4.241	38.353	4.237	0.00%	99.9%	N
9		38.402	4.235	38.402	4.232	0.00%	99.9%	N
10		38.391	4.237	38.390	4.235	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

No: SEW-CB1521

DATE: 2015.2.17

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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	38.372	4.240	38.372	4.240	0.00%	100.0%	N
2		38.379	4.237	38.379	4.237	0.00%	100.0%	N
3		38.386	4.241	38.386	4.241	0.00%	100.0%	N
4		38.363	4.235	38.363	4.235	0.00%	100.0%	N
5		38.380	4.236	38.380	4.236	0.00%	100.0%	N
6		38.358	4.230	38.358	4.230	0.00%	100.0%	N
7		38.410	4.233	38.410	4.233	0.00%	100.0%	N
8		38.353	4.237	38.353	4.237	0.00%	100.0%	N
9		38.402	4.232	38.402	4.232	0.00%	100.0%	N
10		38.390	4.235	38.390	4.235	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/O ccurrence	番号 N o.	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	55.5°C	N	6	初回满充电/ First cycle, fully charged	55.6°C	N	
2		57.3°C	N	7		55.6°C	N	
3		57.3°C	N	8		55.6°C	N	
4		59.9°C	N	9		55.6°C	N	
5		60.8°C	N	10		55.6°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 (℃) 170℃	现象确认/Occurrence
1	初回 50%充电 (宽面)/ First cycle, 50% charged (wide surface)	<160℃	N
2		<160℃	N
3		<160℃	N
4		<160℃	N
5		<160℃	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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DATE: 2015.2.17

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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

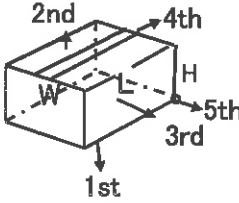
No : SEW-CB1521

DATE 2015.2.17

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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	2015.1.26-2015.1.29	試験番号/ Test N
機種名/ Sony Model Name	LIS1587MRPC		梱包入り数/ Quantity	120 pcs
使用セル/ Cell Model Name	US425179H4	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	8.0 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	145 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	試供品は漏洩があつてはならない。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 / Senior Manager  
 Quality Assurance Department  
 Sony Electronics (Wuxi) Co., Ltd.  
 品保-P检-022(3)

総合判定

合格/OK

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## 1. 2m落下試験写真／1. 2mDrop Test Photo

リチウムイオン電池／lithium-ion cell or battery

ソニー機種名／Sony model name: LIS1587MRPC

### Before



### After



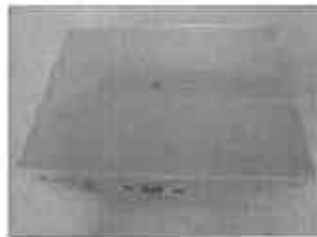
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## 積み重ね試験写真／/Stacking Test Photo

リチウムイオン電池／lithium-ion cell or battery

ソニー機種名／Sony model name: LIS1587MRPG

### Before



### After



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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-CB1521

Date: 2015-02-17

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 : FC40 Sony model name : LIS1587MRPC
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 : 2015/01/30~2015/02/17

梱包試験実施日 / Tested Date for Package : 2015/01/26~2015/01/29

## 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	2315mAh	
ワート時定格値(Wh) / Watt-hour rating	8.8Wh	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 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, 5th revised edition Amendment 2, Part III, sub-section 38.3.

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

品保-報告-039(8)

3202010018171



## 国联劝告 结果 1

DATE: 2015.2.17

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## Test Result of UN Recommendations Part 1

PAGE: 2 of 5 Page

机种名/Sony Model Name	LIS1587MRPC		
cell使用/Cell Model Name	US425179H4	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	2015.1.30-2015.2.17
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		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	38.373	4.308	38.373	4.303	0.00%	99.9%	N
2		38.383	4.304	38.383	4.298	0.00%	99.9%	N
3		38.393	4.313	38.393	4.307	0.00%	99.9%	N
4		38.371	4.301	38.371	4.296	0.00%	99.9%	N
5		38.385	4.300	38.384	4.294	0.00%	99.9%	N
6		38.362	4.299	38.361	4.294	0.00%	99.9%	N
7		38.412	4.306	38.412	4.301	0.00%	99.9%	N
8		38.356	4.309	38.355	4.303	0.00%	99.9%	N
9		38.404	4.300	38.404	4.295	0.00%	99.9%	N
10		38.393	4.303	38.393	4.298	0.00%	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		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	38.373	4.303	38.372	4.241	0.00%	98.6%	N
2		38.383	4.298	38.379	4.239	0.01%	98.6%	N
3		38.393	4.307	38.387	4.244	0.02%	98.5%	N
4		38.371	4.296	38.364	4.237	0.02%	98.6%	N
5		38.384	4.294	38.380	4.237	0.01%	98.7%	N
6		38.361	4.294	38.359	4.235	0.01%	98.6%	N
7		38.412	4.301	38.411	4.239	0.00%	98.6%	N
8		38.355	4.303	38.353	4.241	0.01%	98.6%	N
9		38.404	4.295	38.402	4.235	0.01%	98.6%	N
10		38.393	4.298	38.391	4.237	0.01%	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		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	38.372	4.241	38.372	4.240	0.00%	100.0%	N
2		38.379	4.239	38.379	4.237	0.00%	100.0%	N
3		38.387	4.244	38.386	4.241	0.00%	99.9%	N
4		38.364	4.237	38.363	4.235	0.00%	100.0%	N
5		38.380	4.237	38.380	4.236	0.00%	100.0%	N
6		38.359	4.235	38.358	4.230	0.00%	99.9%	N
7		38.411	4.239	38.410	4.233	0.00%	99.9%	N
8		38.353	4.241	38.353	4.237	0.00%	99.9%	N
9		38.402	4.235	38.402	4.232	0.00%	99.9%	N
10		38.391	4.237	38.390	4.235	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

No: SEW-CB1521

DATE: 2015.2.17

PAGE: 3 of 5 Page

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	38.372	4.240	38.372	4.240	0.00%	100.0%	N
2		38.379	4.237	38.379	4.237	0.00%	100.0%	N
3		38.386	4.241	38.386	4.241	0.00%	100.0%	N
4		38.363	4.235	38.363	4.235	0.00%	100.0%	N
5		38.380	4.236	38.380	4.236	0.00%	100.0%	N
6		38.358	4.230	38.358	4.230	0.00%	100.0%	N
7		38.410	4.233	38.410	4.233	0.00%	100.0%	N
8		38.353	4.237	38.353	4.237	0.00%	100.0%	N
9		38.402	4.232	38.402	4.232	0.00%	100.0%	N
10		38.390	4.235	38.390	4.235	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/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	55.5°C	N	6	初回满充电/ First cycle, fully charged	55.6°C	N		
2		57.3°C	N	7		55.6°C	N		
3		57.3°C	N	8		55.6°C	N		
4		59.9°C	N	9		55.6°C	N		
5		60.8°C	N	10		55.6°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 (℃) 170℃	现象确认/Occurrence
1	初回 50%充电 (宽面)/ First cycle, 50% charged (wide surface)	<160℃	N
2		<160℃	N
3		<160℃	N
4		<160℃	N
5		<160℃	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

No.: SEW-CB1521

DATE: 2015.2.17

PAGE: 4 of 5 Page

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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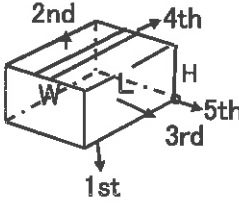
# 国連勧告試験 梱包結果

Test Result of UN Recommendations for Package

No : SEW-CB1521  
DATE 2015.2.17  
PAGE 5 of 5 Page

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	2015.1.26-2015.1.29	試験番号/ Test N SEW-CB1521
機種名/ Sony Model Name	LIS1587MRPC		梱包入り数/ Quantity	120 pcs
使用セル/ Cell Model Name	US425179H4	構成/ Configuration	1P1S	梱包製造所/ Package Factor SEW
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	8.0 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		145 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	試供品は漏洩があつてはならない。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 / Senior Manager  
 Quality Assurance Department  
 Sony Electronics (Wuxi) Co., Ltd.  
 品保-P检-022(3)

総合判定  
**合格/OK**

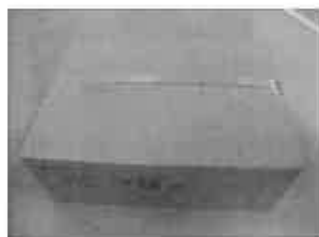
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## 1. 2m落下試験写真／1. 2mDrop Test Photo

リチウムイオン電池／lithium-ion cell or battery

ソニー機種名／Sony model name: LIS1587MRPC

### Before



### After



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## 積み重ね試験写真／/Stacking Test Photo

リチウムイオン電池／lithium-ion cell or battery

ソニー機種名／Sony model name: LIS1587MRPC

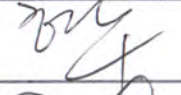
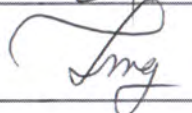
### Before



### After



**Model name : FC40**

Executive Div.	Safety Center	Confidential	
	Name / Title	Signature	Date
Reported by	Hamhyungwoo		2015. 3. 6
Approved by	Jung Min Kym		2015. 3. 6

**Test report; UN Manual of Tests and Criteria,**  
**Part III, Subsection 38.3**

2013, Rev.5, Amend.2

**Document No : SDI-UN-150305-01**

**SAMSUNG SDI**  
**Energy Business Division**



## ***Product Information***

1. Model name: FC40
2. Product classification: Li rechargeable battery pack (Single cell battery)
3. Nominal voltage: 3.8V
4. Rated capacity: 2315 mAh minimum
5. Wh Capacity: 8.8Wh min / 9.4Wh typ
6. Weight of product: 38.11 g typical (47.0g Max)
7. Test Date: 2015/01/29 ~ 2015/02/25
8. Test Location: **SAMSUNG SDI Safety Center, 508 Sungsungdong, Cheonan  
Chungcheongnamdo, Korea**



## Test summary

Test No.	Test item	Relating Std.	Test begins on (YYYY/MM/DD)	Test Completed on (YYYY/MM/DD)	Judgment (Pass/Fail)
T1	Altitude simulation	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.1	2015/01/29	2015/01/29	Pass
T2	Thermal test	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.2	2015/01/30	2015/02/05	Pass
T3	Vibration	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.3	2015/02/06	2015/02/06	Pass
T4	Shock	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.4	2015/02/08	2015/02/08	Pass
T5	External short circuit	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.5	2015/02/10	2015/02/10	Pass
T6	Impact / Crush	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.6	2015/02/10	2015/02/10	Pass
T7	Overcharge	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.7	2015/02/17	2015/02/25	Pass
T8	Forced discharge	UN Manual of Tests and Criteria, Part III, Subsection 38.3.4.8	2015/02/18	2015/02/25	Pass
Total Judgment(Pass/Fail)					Pass

- Tests T-1 through T-5 shall be conducted in sequence with the same cell/pack/single cell battery.
- For test 6, test should be conducted for Li-ion cells or component cell contained in a battery.
- T7 shall be performed only for Li-ion rechargeable battery or rechargeable single cell battery not cell.
- T8 should be conducted for Li-ion cells or component cell contained in a battery.

# T-1~T-5) Transportation Test (Test Result: Pass)

Fresh Pack 100% SOC												
Initial							T1					
No.	Weight(g)	OCV(V)					Weight(g)	OCV(V)	Mass Loss(%)	Residual OCV(%)	Appearance	Result
1	38.073	4.28					38.073	4.28	0.00	100.00	O	PASS
2	38.155	4.28					38.154	4.28	0.00	100.00	O	PASS
3	38.118	4.28					38.118	4.28	0.00	100.00	O	PASS
4	38.412	4.28					38.414	4.28	-0.01	100.00	O	PASS
5	38.232	4.28					38.232	4.28	0.00	100.00	O	PASS
6	38.020	4.28					38.022	4.28	-0.01	100.00	O	PASS
7	37.988	4.28					37.985	4.28	0.01	100.00	O	PASS
8	38.092	4.28					38.092	4.28	0.00	100.00	O	PASS
9	38.019	4.28					38.017	4.28	0.01	100.00	O	PASS
10	38.330	4.28					38.332	4.28	-0.01	100.00	O	PASS
T2							T3					
No.	Weight(g)	OCV(V)	Mass Loss(%)	Residual OCV(%)	Appearance	Result	Weight(g)	OCV(V)	Mass Loss(%)	Residual OCV(%)	Appearance	Result
1	38.070	4.25	0.01	99.30	O	PASS	38.072	4.25	-0.01	100.00	O	PASS
2	38.154	4.25	0.00	99.30	O	PASS	38.154	4.25	0.00	100.00	O	PASS
3	38.118	4.25	0.00	99.30	O	PASS	38.117	4.25	0.00	100.00	O	PASS
4	38.410	4.25	0.01	99.30	O	PASS	38.412	4.25	-0.01	100.00	O	PASS
5	38.233	4.25	0.00	99.30	O	PASS	38.233	4.25	0.00	100.00	O	PASS
6	38.022	4.25	0.00	99.30	O	PASS	38.020	4.25	0.01	100.00	O	PASS
7	37.981	4.25	0.01	99.30	O	PASS	37.984	4.25	-0.01	100.00	O	PASS
8	38.094	4.25	-0.01	99.30	O	PASS	38.091	4.25	0.01	100.00	O	PASS
9	38.017	4.25	0.00	99.30	O	PASS	38.014	4.25	0.01	100.00	O	PASS
10	38.333	4.25	0.00	99.30	O	PASS	38.333	4.25	0.00	100.00	O	PASS
T4							T5					
No.	Weight(g)	OCV(V)	Mass Loss(%)	Residual OCV(%)	Appearance	Result	Max T(°C)	Appearance				Result
1	38.070	4.25	0.01	100.00	O	PASS	55	O				PASS
2	38.154	4.25	0.00	100.00	O	PASS	56	O				PASS
3	38.115	4.25	0.01	100.00	O	PASS	56	O				PASS
4	38.413	4.25	0.00	100.00	O	PASS	55	O				PASS
5	38.233	4.25	0.00	100.00	O	PASS	56	O				PASS
6	38.022	4.25	-0.01	100.00	O	PASS	56	O				PASS
7	37.985	4.25	0.00	100.00	O	PASS	56	O				PASS
8	38.091	4.25	0.00	100.00	O	PASS	55	O				PASS
9	38.011	4.25	0.01	100.00	O	PASS	55	O				PASS
10	38.334	4.25	0.00	100.00	O	PASS	55	O				PASS
[Appearance] O-No Leakage, No Venting, No Disassembly, No Rupture, No Fire / L-Leakage / V-Venting / D-Disassembly / R-Rupture / F-Fire												
[Criteria] T1~T4: No Leakage / No Venting / No Disassembly / No Rupture / No Fire / Residual OCV not less than 90%												
T5: External temperature does not exceed 170°C, no disassembly, no rupture, and no fire within 6 hours of this test												

## ***T-6) Impact/Crush Test (Test Result: Pass)***

### **■ Cell type**

- ☐ Cylindrical cells not less than 18.0 mm in diameter  
☒ Prismatic, Pouch, Cylindrical cells less than 18.0 mm in diameter

### **■ Test procedure**

- ☐ Impact  
☒ Crush

Fresh Pack 50% SOC				
	Initial	T6		
No.	OCV(V)	Max Temp(℃)	Appearance	Result
1	3.85	22	0	PASS
2	3.85	22	0	PASS
3	3.85	22	0	PASS
4	3.85	22	0	PASS
5	3.85	22	0	PASS
[Appearance] 0-No Disassembly, No Fire / D-Disassembly / F-Fire				
[Criteria] External temperature does not exceed 170℃, no disassembly, and no fire within 6 hours of this test.				

## T-7) Over charge Test (Test Result: Pass)

■ Test condition: 8.7V / 4.63A / 24Hr

Fresh pack 100% SOC			50 cycled pack 100% SOC	
No.	Appearance	Result	Appearance	Result
1	0	PASS	0	PASS
2	0	PASS	0	PASS
3	0	PASS	0	PASS
4	0	PASS	0	PASS
[Appearance] 0-No Disassembly, No Fire / D-Disassembly / F-Fire				
[Criteria] No disassembly and no fire within 7 days of the test				

## T-8) Forced discharge Test (Test Result: Pass)

■ Test condition:

- Initial test current: 2.315A

- Time interval: 60MIN

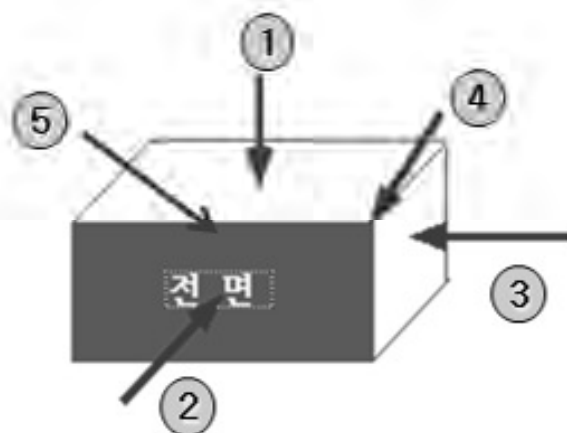
Fresh Pack 0% SOC				50 cycled Pack 0% SOC		
No.	Max. tempe(℃)	Appearance	Result	Max. temp(℃)	Appearance	Result
1	25	0	PASS	26	0	PASS
2	24	0	PASS	25	0	PASS
3	25	0	PASS	25	0	PASS
4	25	0	PASS	26	0	PASS
5	26	0	PASS	26	0	PASS
6	25	0	PASS	24	0	PASS
7	26	0	PASS	25	0	PASS
8	25	0	PASS	26	0	PASS
9	26	0	PASS	25	0	PASS
10	24	0	PASS	26	0	PASS
[Appearance] 0-No Disassembly, No Fire / D-Disassembly / F-Fire						
[Criteria] No disassembly and no fire within 7 days of the test						

## Annex 1 - 1.2m Packaging Drop Test

### ■ Test Summary



Test No.	Test item	Relating Std.	Test begins on (YYYY/MM/DD)	Test Completed on (YYYY/MM/DD)	Judgment (Pass/Fail)
P1	Packaging Drop	2015 IATA Dangerous Goods Regulations 56 <sup>th</sup> Edition	2015/02/25	2015/02/25	Pass
Total Judgment(Pass/Fail)					Pass

### ■ Test Method





## P-1 1.2m Packaging Drop Test (Test Result: Pass)

### ■ Sample Picture

	Front	Back
Sample Picture		

### ■ Test result

	Before Test	After Test
Weight (Kg)	0.478	0.478
Test Result		
Remark	Outer packaging is damaged but samples inside the package remain intact and no damage, no shifting, no release of contents for samples inside the package.	
Criteria	<ul style="list-style-type: none"><li>- Without damage to cells or batteries contained therein.</li><li>- Without shifting of the contents so as to allow battery to battery(or Cell to cell) contact.</li><li>- Without release of contents.</li></ul>	



**LG Chem, Ltd.**

128, Yeoui-daero, Yeongdeungpo-gu,  
Seoul, Korea

Certification & Evaluation Team

Tel: 82-42-870-6195, Fax: 82-42-863-0182

If any of pages is not legible or has not been received,  
please notify our office for re-transmission

## CERTIFICATE OF COMPLIANCE

The following product has been evaluated according to the 5<sup>th</sup> 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.


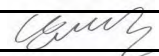

<input type="checkbox"/> Lithium-ion cell <input type="checkbox"/> Lithium-ion battery <input checked="" type="checkbox"/> Lithium-ion single cell battery	
Model name	<b>FC40</b>
Cell Model name	<b>ICP415279L1</b>
Nominal voltage	<b>3.8 V</b>
Electric power capacity	<b>8.8 Wh</b>

Conducted By: Dae Ho Nam

Manager  
Certification & Evaluation  
LG Chem, Ltd.  
E-mail: [kkammy@lgchem.com](mailto:kkammy@lgchem.com)

Reviewed By: Byung Soo Kim

General Manager  
Certification & Evaluation  
LG Chem, Ltd.  
E-mail: [bskim@lgchem.com](mailto:bskim@lgchem.com)

문서번호	QAE-EF02-150326-PKFC40	
Prepared	남익현	
	장승현	
Reviewed	남대호	
	우민제	
Approved	김병수	

**Solution**Partner

# UN Test Report

## - FC40 (Min.8.8Wh, 3.8V) -

### — 목 차 —

1. UN Transportation Regulation Test
  2. Test Procedure
  3. Test Result
  4. Sample Image
- Appendix. Drop Test Report

2015. 03. 26





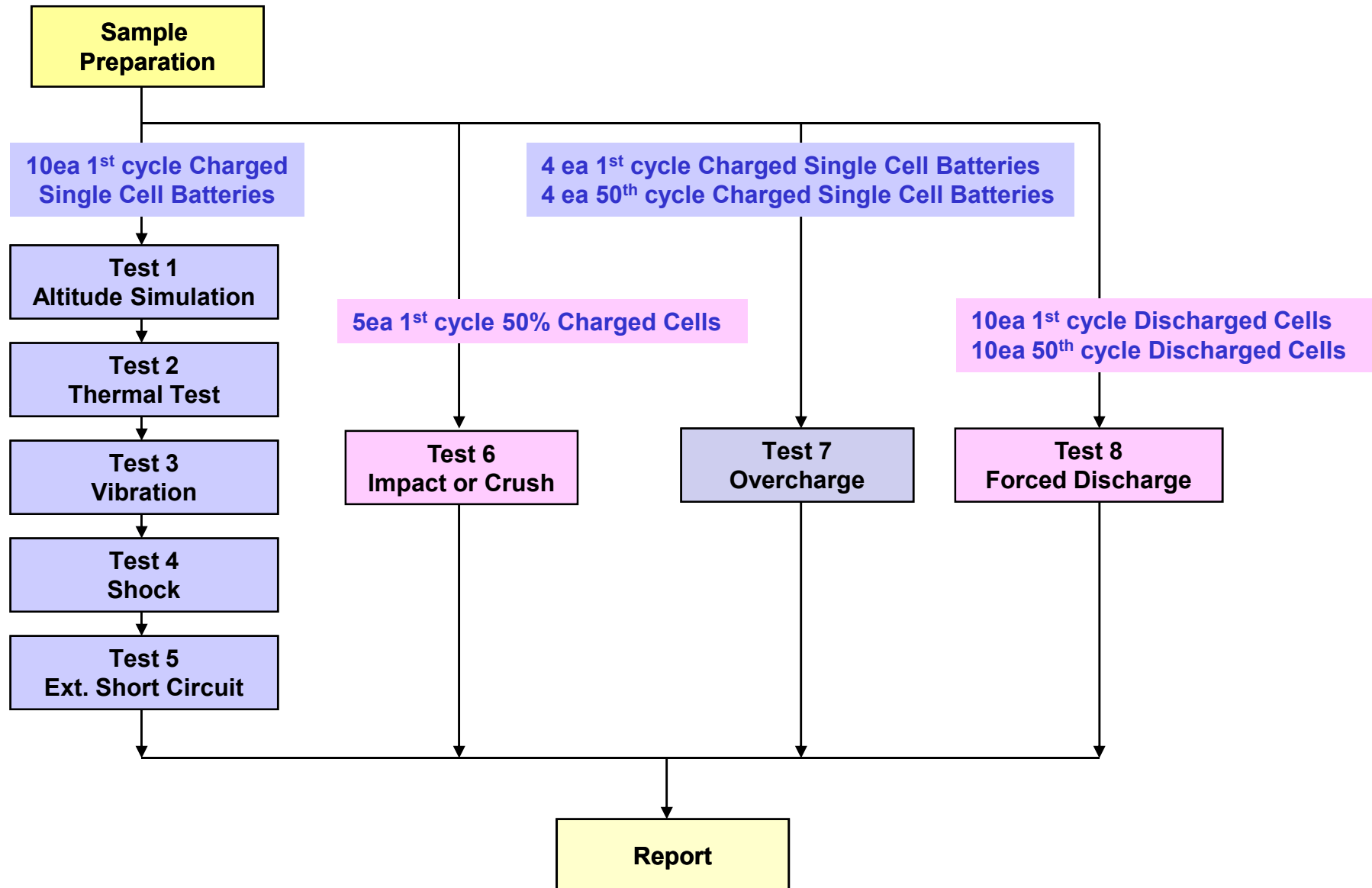
# 1. UN Transportation Regulation Test

Test	Condition	Requirements
Test 1. Altitude Simulation	Storing at (low pressure) 11.6kPa for 6hr at 20+/-5℃	<ul style="list-style-type: none"> <li>- Measuring mass before/ after each test (If M&lt;1g, less than 0.5%, If 1g≤M≤75g, less than 0.2%, If M&gt;75g, less than 0.1%)</li> <li>- Measuring voltage before/ after each test (more than 90%)</li> <li>- No leakage, no venting, no disassembly, no rupture, no fire</li> </ul>
Test 2. Thermal Test	[72±2℃, 6hr ↔ -40±2℃, 6hr, interval max. 30min] x 10 cycle 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 1gn) 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℃	<ul style="list-style-type: none"> <li>- No disassembly, no rupture, no fire within 6 hours after the test</li> <li>- Temp. monitoring (max. 170℃)</li> </ul>
Test 6. Impact for cylindrical cells ( > 18mm diameter)	Φ=15.8mm bar, 9.1kg mass, 61±2.5cm height	<ul style="list-style-type: none"> <li>- No disassembly, no fire within 6 hours after the test</li> <li>- Temp. monitoring (max. 170℃)</li> </ul>
Test 6. Crush for cylindrical cells ( ≤ 18mm diameter) for prismatic, pouch, coin/button cells	Crushing rate : 1.5cm/s, until 13kN±0.78kN or 100mV drop or 50% deformation	
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 V (min.) = 22V. 2.If charge voltage > 18V, V (min.) = 1.2 x (max. charge voltage)	<ul style="list-style-type: none"> <li>- No disassembly, no fire within 7 days after the test</li> </ul>
Test 8. Forced Discharge	Discharge at max. discharge current (with 12V DC power supply), Duration time = rated capacity/initial test current	

\* Tests through T1-T5 shall be conducted in sequence with the same samples.

\* We declare that the above-mentioned test is the result of being checked according to UN Test  
( Manual of Test and Criteria ST/SG/AC.10/11/Rev.5/Amd.2)

## 2. Test Procedure



# 3-1. T1-T4 Test Result

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

## A. 1st cycle fully charged state

1	4.323	37.574	4.322	37.573	99.98	0.003	Pass	4.269	37.571	98.77	0.005	Pass	4.268	37.568	99.98	0.008	Pass	4.266	37.567	99.95	0.003	Pass
2	4.322	37.571	4.321	37.571	99.98	0.000	Pass	4.272	37.567	98.87	0.011	Pass	4.270	37.565	99.95	0.005	Pass	4.267	37.565	99.93	0.000	Pass
3	4.323	37.576	4.321	37.575	99.95	0.003	Pass	4.268	37.575	98.77	0.000	Pass	4.267	37.575	99.98	0.000	Pass	4.266	37.574	99.98	0.003	Pass
4	4.321	37.573	4.320	37.573	99.98	0.000	Pass	4.269	37.571	98.82	0.005	Pass	4.267	37.571	99.95	0.000	Pass	4.266	37.571	99.98	0.000	Pass
5	4.322	37.573	4.320	37.573	99.95	0.000	Pass	4.267	37.571	98.77	0.005	Pass	4.266	37.571	99.98	0.000	Pass	4.264	37.570	99.95	0.003	Pass
6	4.322	37.574	4.321	37.574	99.98	0.000	Pass	4.269	37.569	98.80	0.013	Pass	4.267	37.569	99.95	0.000	Pass	4.265	37.568	99.95	0.003	Pass
7	4.323	37.572	4.322	37.572	99.98	0.000	Pass	4.268	37.569	98.75	0.008	Pass	4.266	37.566	99.95	0.008	Pass	4.264	37.566	99.95	0.000	Pass
8	4.322	37.573	4.321	37.572	99.98	0.003	Pass	4.268	37.570	98.77	0.005	Pass	4.267	37.567	99.98	0.008	Pass	4.265	37.566	99.95	0.003	Pass
9	4.323	37.574	4.321	37.574	99.95	0.000	Pass	4.267	37.573	98.75	0.003	Pass	4.266	37.572	99.98	0.003	Pass	4.265	37.571	99.98	0.003	Pass
10	4.322	37.573	4.321	37.573	99.98	0.000	Pass	4.268	37.572	98.77	0.003	Pass	4.267	37.570	99.98	0.005	Pass	4.264	37.569	99.93	0.003	Pass
Ave.	4.322	37.573	4.321	37.573	99.97	0.001	-	4.269	37.571	98.79	0.006	-	4.267	37.569	99.97	0.004	-	4.265	37.569	99.96	0.002	-

### Requirement

- Measuring mass before/after each test (If  $M > 75g$ , less than 0.1%,  $1g \leq M \leq 75$ , less than 0.2%,  $M < 1g$ , less than 0.5%)
- Measuring voltage before/after each test (more than 90%, only charged samples)
- No leakage, no venting, no disassembly, no rupture, no fire

## 3-2. T5/T7 Test Result

EXT.Short Circuit (T5)			
NO.	Initial OCV(V)	Max. Temp (°C)	Result

A. 1st cycle fully charged state

1	4.266	53.14	Pass
2	4.267	52.17	Pass
3	4.266	54.87	Pass
4	4.266	53.66	Pass
5	4.264	52.71	Pass
6	4.265	52.37	Pass
7	4.264	52.36	Pass
8	4.265	53.69	Pass
9	4.265	54.18	Pass
10	4.264	55.23	Pass
MAX.	4.267	55.23	-

Over Charge (T7)				
	NO.	Initial OCV(V)	Max. Temp (°C)	Result

A. 1st cycle fully charged state

Charge	11	4.323	23.12	Pass
	12	4.323	24.25	Pass
	13	4.323	23.60	Pass
	14	4.323	23.22	Pass
	MAX.	4.323	24.25	-

Test Condition	
- Max. Charge Current : 2390mA - CC/CV 2Imax(4780mA) 8.7V cut-off 24Hr	

Over Charge (T7)				
	NO.	Initial OCV(V)	Max. Temp (°C)	Result

B. 50th cycle fully charged state

Charge	15	4.322	23.65	Pass
	16	4.323	24.66	Pass
	17	4.324	21.45	Pass
	18	4.323	22.21	Pass
	MAX.	4.324	24.66	-

Requirement	
- No disassembly, no fire within 7 day after the test	

Test Condition
- 100mΩ ext. short-circuit at 55±2°C

Requirement
- Temperature < 170 (°C) - No disassembly, no rupture, no fire within 6 hours after the test

## 3-3. T6/T8 Test Result (ICP415279L1)

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

### A. 1st cycle 50% charged state

Flat	C-1	3.845	23.76	Pass
	C-2	3.844	22.23	Pass
	C-3	3.845	23.21	Pass
	C-4	3.846	23.16	Pass
	C-5	3.845	23.24	Pass
MAX.		3.846	23.76	-

Test Condition	
- Crushing rate :1.5cm/s, until 13kN±0.78kN or 100mV drop or 50% deformation	

Requirement	
- Temperature < 170 (°C)	
- No disassembly, no fire within 6 hours after the test	

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

### A. 1st cycle fully discharged state

C-6	3.010	45.71	Pass
C-7	3.011	45.34	Pass
C-8	3.014	44.12	Pass
C-9	3.016	47.15	Pass
C-10	3.010	46.82	Pass
C-11	3.013	46.46	Pass
C-12	3.007	47.45	Pass
C-13	3.012	47.15	Pass
C-14	3.010	47.45	Pass
C-15	3.013	47.22	Pass
MAX.	3.016	47.45	-

### B. 50th cycle fully discharged state

C-16	3.122	45.62	Pass
C-17	3.122	44.23	Pass
C-18	3.120	44.14	Pass
C-19	3.119	43.25	Pass
C-20	3.118	45.26	Pass
C-21	3.123	45.35	Pass
C-22	3.119	44.49	Pass
C-23	3.121	44.52	Pass
C-24	3.120	46.42	Pass
C-25	3.115	42.71	Pass
MAX.	3.122	46.42	-

Test Condition	
- Discharge at max. discharge current : 2390mA (with 12V DC power supply), Duration time: rated capacity (60min)	

Requirement	
- No disassembly, no fire within 7 days after the test	

## 4. Sample Image



# Appendix 1. 1.2m Drop Test Report

## A. Test Result

No	Name of Test Items	Standard requirement or The Clause Number of Standard	Test Result		Conclusion
1	1.2m Drop Test	* UNITED NATIONS “Recommendations on the TRANSPORT OF DANGEROUS GOODS” Model Regulations(18 <sup>th</sup> ) special provisions 188	Face	The package is not cracked, the contents are not damaged and not shifted.	Passed
			Edge	The package is not cracked, the contents are not damaged and not shifted.	
			Angle	The package is not cracked, the contents are not damaged and not shifted.	
2	Gross Weight Measure	* UNITED NATIONS “Recommendations on the TRANSPORT OF DANGEROUS GOODS” Model Regulations(18 <sup>th</sup> ) special provisions 188	6.860 kg		Passed

## B. Sample Description

Dimensions	400×300×87mm	Net Weight of Batteries	5.07Kg	Battery Type	Rechargeable Li-polymer Battery
Gross weight	6.860 kg	Battery number	135Pcs / Carton	** Description	Covered by Styrofoam

## C. Image After Test



\* Recommendations on the transport of dangerous goods as below  
Each package of cells or batteries, or the completed package must be capable of withstanding a 1.2 m drop test in any orientation without:

- 1) damage to cells or batteries contained therein
- 2) shifting of the contents so as to allow battery to battery (or cell to cell) contact
- 3) release of contents.

\*\* Description: Description about the protection of short-circuit