SONY
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リチウムイオン電池認証書（類似機種用）
Lithium-ion cell or battery(polymer) cell or battery Certification for Similar Models

No.：SEW-PC1059
Date:2010/1/5

1．□単電池／cell　■組電池／battery(pack)（セル構成／composition of cell：2P3S　　）
2．機種名／customer model name：AS10D41　　Sony model name：LIP6296ACPC
3．顧 客 名／customer：　Acer
4．定格／rated

項目／item	規格値／specification	備考／remarks
公称電圧／nominal voltage	10.8V	
公称容量／nominal capacity	4400mAh	
エネルギー量(Wh) ／Watt-hour	48Wh	

5．類似機種及び試験結果／Similar Model and Test Result
1）類似機種名／Similar Model（Sony model name）：LIP6253（11.1V　4800mAh　53Wh）
2）試験結果／Test Result

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	内部短絡／Impact	OK	
T7	過充電／Overcharge	OK	単電池は対象外／for pack only
T8	強制放電／Forced discharge	—	組電池は対象外／for cell only

試験実施日／Tested Date：2008/12/08～2008/12/24
梱包試験実施日／Tested Date for Package：2008/12/09～2008/12/10

上記テスト結果は国連勧告試験(Manual of Tests and Criteria Rev15, 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 Corporation Energy Business Group, 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, Rev15, Part Ⅲ, sub-section 38.3.

3）類似機種とのエネルギー量（Wh）、電圧比率／Ratios for Watt-hour ,Voltage
類似機種に対して、エネルギー量（Wh）、電圧はいずれも２０%以内の変化率を証明します。
We certify the ratios of the subject model to the similar model are within 20% for Watt-hour 、Voltage.
LIP6296／LIP6253：　エネルギー量（Wh）比／Watt-hour Ratio＝96%、
電圧比／Voltage Ratio＝91%

Weiwei Tang / Assistant Manager
Quality Assurance Department
Sony Electronics(Wuxi) Co.,LTD

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A : Checklist for Judging New Type Cell or not

When there is no change in all items, it is NOT considered to be a New Type Cell.
(Change ⇒ ○、 No change ⇒ −)

Battery Pack Model : LIP6296 Component Cell Model : US18650G

Check item	The element which is given influence	Presence of change
Cell dimensions	Are the dimensions of this cell the same as those of the test completion cell?	−
Safety parts and mechanical components	Are the safety parts and mechanical components of this cell the same as those of the test completion cell?	−
Cathode material system	Is cathode material system of this cell the same as that of the test completion cell?	−
Anode material system	Is anode material system of this cell the same as that of the test completion cell?	−
Electrolyte material system	Is electrolyte material system of this cell the same as that of the test completion cell?	−
Mass of cathode material	Is mass difference of the design center of each cell concerning cathode less than 20%?	−
Mass of anode material	Is mass difference of the design center of each cell concerning anode less than 20%?	−
Mass of electrolyte	Is mass difference of the design center of each cell concerning electrolyte less than 20%?	−
Judgment result	New Type or not	Not new

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B : Checklist for Judging New Type Battery or not

Confirmation of presence of change in "The element which is given influence"
(Change ⇒ ○、 No change ⇒ −)
When there is no change in all items, it is NOT considered to be a New Type Battery.

Battery Pack Model : LIP6296

Test Item (Function)	The element which is given influence	Presence of change
T1 : Altitude Simulation (Decompression load)	· Crimped part, Gasket (Cell) · Gas Release Vent, Cell Case (Cell) · Pack (Plastic) Case · Holding Member (Insulator, Insulation Tape, Both Sides Tape) · Coating materials	−
T2 : Thermal Shock (Repetition of high temp. and low temp.)	· Crimped part, Gasket (Cell) · Gas Release Vent, Cell Case (Cell) · Finished state of Wound Electrodes (Cell) · Pack (Plastic) Case · Holding Member (Insulator, Insulation Tape, Both Sides Tape) · Coating materials	−
T3 : Vibration (Vibration load)	· Finished state of Wound Electrodes (Cell) · Electric wiring member · Electronic Parts on a circuit board · Cell Holding Member (Adhesive, Both Sides Tape, Lib of Plastic Case)	−
T4 : Shock (Shock load)	· Wiring Member · Electronic Parts on a circuit board · Cell Holding Member (Adhesive, Both Sides Tape, Lib of Plastic Case) · Finished state of Wound Electrodes (Cell)	−
T5 : External Short Circuit (Short current)	· Over-voltage Protection · Current Control Device · Safety Device of cell (Cell) · Lead Tab	−
T6(Cell) : Impact (Crash load)	· Separator (Cell) · Insulation State in a cell (Cell)	−
T7(Pack) : Overcharge (Charge load)	· Overcharge Protection · Thermal Device · Safety Device of cell (Cell)	−
T8(Cell) : Forced Discharge (Over discharge load)	· Finished state of Wound Electrodes (Cell)	−
Judgment result	New Type or not	Not new

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国連勧告試験 結果 1
Test Result of UN Recommendations Part 1

機種名/Sony Model Name	LIP6253LVPC(SY6)		
使用セル/Cell Model Name	US18650 G7	構成/Configuration	2 P 3 S
試験場所/Test Company	索尼电子(无锡)有限公司		
住所/ Address	无锡国家高新技术产业开发区62号地块	電話/Tel	+86-510-85239269
試験室/Test Room	PACK安全性試験室	試験期間/Test Dates	2008/12/08～2008/12/24
判定基準/Criterion	UN Manual of Tests and Criteria Rev4, Part Ⅲ, sub-section 38.3		

試験名称/Test Name	T1：高度ｼﾐｭﾚｰｼｮﾝ試験 Altitude Simulation						
番号 No.	サンプル状態 Conditions	試験前／Before		試験後／After		質量減少率／Mass Loss (%) *	OCV維持率／Residual OCV (%) 90%以上	現象／Occurrence
		質量/Weight(g)	OCV (V)	質量/Weight(g)	OCV (V)			
1	初回ｻｲｸﾙ満充電/First cycle, fully charged	330.7	12.47	330.7	12.42	0.00	99.6	N
2		331.3	12.46	331.3	12.42	0.00	99.7	N
3		331.1	12.42	331.1	12.41	0.00	99.9	N
4		331.4	12.46	331.4	12.41	0.00	99.6	N
5	初回ｻｲｸﾙ完全放電/First cycle, fully discharged	331.4		331.4		0.00		N
6		331.1		331.1		0.00		N
7		331.5		331.5		0.00		N
8		331.4		331.4		0.00		N
9	50回ｻｲｸﾙ満充電/After 50 cycles, fully charged	331.5	12.49	331.5	12.47	0.00	99.8	N
10		331.6	12.40	331.6	12.40	0.00	99.9	N
11		331.6	12.48	331.6	12.46	0.00	99.8	N
12		331.2	12.49	331.2	12.48	0.00	100.0	N
13	50回ｻｲｸﾙ完全放電/After 50 cycles, fully discharged	331.1		331.1		0.00		N
14		331.5		331.5		0.00		N
15		332.0		332.0		0.00		N
16		331.3		331.3		0.00		N

試験名称/Test Name	T2：温度試験 Thermal						
番号 No.	サンプル状態 Conditions	試験前／Before		試験後／After		質量減少率／Mass Loss (%) *	OCV維持率／Residual OCV (%) 90%以上	現象／Occurrence
		質量/Weight(g)	OCV (V)	質量/Weight(g)	OCV (V)			
1	初回ｻｲｸﾙ満充電/First cycle, fully charged	330.7	12.42	330.7	12.35	0.01	99.4	N
2		331.3	12.42	331.3	12.35	0.01	99.4	N
3		331.1	12.41	331.1	12.33	0.01	99.4	N
4		331.4	12.41	331.4	12.34	0.00	99.4	N
5	初回ｻｲｸﾙ完全放電/First cycle, fully discharged	331.4		331.4		0.01		N
6		331.1		331.1		0.01		N
7		331.5		331.5		0.01		N
8		331.4		331.3		0.01		N
9	50回ｻｲｸﾙ満充電/After 50 cycles, fully charged	331.5	12.47	331.5	12.38	0.00	99.3	N
10		331.6	12.40	331.6	12.29	0.00	99.2	N
11		331.6	12.46	331.5	12.38	0.00	99.3	N
12		331.2	12.48	331.2	12.39	0.00	99.2	N
13	50回ｻｲｸﾙ完全放電/After 50 cycles, fully discharged	331.1		331.1		0.00		N
14		331.5		331.4		0.00		N
15		332.0		332.0		0.01		N
16		331.3		331.3		0.00		N

＊質量減少率:Mass Loss(%)	□電池質量≦1g :0.5%以下　□1g<電池質量≦5g: 0.2%以下　■5g<電池質量:0.1%以下
現象/Occurrence	破断:R <Rupture>　発火:F <Fire>　破裂:D <Disassembly>　弁作動:V <Venting> 漏液:L <Leakage>　異常なし:N <No rupture, No fire, No disassembly, No venting, No leakage>

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国連勧告試験 結果 2
Test Result of UN Recommendations Part 2

試験名称/Test Name		T3：振動試験 Vibration						
番号 No.	サンプル状態 Conditions	試験前／Before		試験後／After		質量減少率／Mass Loss (%) *	OCV維持率／Residual OCV (%) 90%以上	現象／Occurrence
		質量/Weight(g)	OCV (V)	質量/Weight(g)	OCV (V)			
1	初回ｻｲｸﾙ 満充電 /First cycle, fully charged	330.7	12.35	330.7	12.33	0.00	99.8	N
2		331.3	12.35	331.3	12.34	0.00	99.9	N
3		331.1	12.33	331.1	12.31	0.00	99.9	N
4		331.4	12.34	331.4	12.31	0.00	99.7	N
5	初回ｻｲｸﾙ 完全放電 /First cycle, fully discharged	331.4		331.4		0.00		N
6		331.1		331.1		0.00		N
7		331.5		331.5		0.00		N
8		331.3		331.3		0.00		N
9	50回ｻｲｸﾙ 満充電 /After 50 cycles, fully charged	331.5	12.38	331.5	12.35	0.00	99.7	N
10		331.6	12.29	331.6	12.27	0.00	99.9	N
11		331.5	12.38	331.5	12.34	0.00	99.7	N
12		331.2	12.39	331.2	12.34	0.00	99.6	N
13	50回ｻｲｸﾙ 完全放電 /After 50 cycles, fully discharged	331.1		331.1		0.00		N
14		331.4		331.4		0.00		N
15		332.0		332.0		0.00		N
16		331.3		331.3		0.00		N

試験名称/Test Name		T4：衝撃試験 Shock						
番号 No.	サンプル状態 Conditions	試験前／Before		試験後／After		質量減少率／Mass Loss (%) *	OCV維持率／Residual OCV (%) 90%以上	現象／Occurrence
		質量/Weight(g)	OCV (V)	質量/Weight(g)	OCV (V)			
1	初回ｻｲｸﾙ 満充電 /First cycle, fully charged	330.7	12.33	330.7	12.33	0.00	100.0	N
2		331.3	12.34	331.3	12.34	0.00	100.0	N
3		331.1	12.31	331.1	12.31	0.00	100.0	N
4		331.4	12.31	331.4	12.31	0.00	100.0	N
5	初回ｻｲｸﾙ 完全放電 /First cycle, fully discharged	331.4		331.4		0.00		N
6		331.1		331.1		0.00		N
7		331.5		331.5		0.00		N
8		331.3		331.3		0.00		N
9	50回ｻｲｸﾙ 満充電 /After 50 cycles, fully charged	331.5	12.35	331.5	12.35	0.00	100.0	N
10		331.6	12.27	331.6	12.27	0.00	100.0	N
11		331.5	12.34	331.5	12.34	0.00	100.0	N
12		331.2	12.34	331.2	12.34	0.00	100.0	N
13	50回ｻｲｸﾙ 完全放電 /After 50 cycles, fully discharged	331.1		331.1		0.00		N
14		331.4		331.4		0.00		N
15		332.0		332.0		0.00		N
16		331.3		331.3		0.00		N

* 質量減少率:Mass Loss(%)	□電池質量≦1g :0.5%以下　□1g<電池質量≦5g: 0.2%以下　■5g<電池質量:0.1%以下
現象/Occurrence	破断:R <Rupture>　発火:F <Fire>　破裂:D <Disassembly>　弁作動:V <Venting> 漏液:L <Leakage>　異常なし:N <No rupture, No fire, No disassembly, No venting, No leakage>

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国連勧告試験 結果 3
Test Result of UN Recommendations Part 3

試験名称/Test Name		T5：外部短絡試験 External Short Circuit	
番号 No.	サンプル状態 Conditions	最大表面温度/Max. Surface Temperature (℃) 170℃≧	現象／ Occurrence
1	初回ｻｲｸﾙ満充電 /First cycle, fully charged	55.9	N
2		56.1	N
3		55.6	N
4		56.0	N
5	初回ｻｲｸﾙ完全放電 /First cycle, fully discharged	56.2	N
6		55.9	N
7		56.6	N
8		56.3	N
9	50回ｻｲｸﾙ満充電 /After 50 cycles, fully charged	56.3	N
10		55.9	N
11		56.1	N
12		56.1	N
13	50回ｻｲｸﾙ完全放電 /After 50 cycles, fully discharged	56.2	N
14		55.6	N
15		56.3	N
16		56.5	N

試験名称/Test Name		T6：内部短絡試験 Impact	
番号 No.	サンプル状態 Conditions	最大表面温度/ Max. Surface Temperature (℃) 170℃≧	現象確認：試験後6時間以内に破裂・発火なし／ Occurrence: No disassembly and no fire within 6 hrs
1	初回サイクル 50%充電/ First cycle, 50% charged	160℃以下*	N
2		160℃以下*	N
3		160℃以下*	N
4		160℃以下*	N
5		160℃以下*	N
6	50回サイクル 完全放電/ After 50cycles, fully discharged	160℃以下*	N
7		160℃以下*	N
8		160℃以下*	N
9		160℃以下*	N
10		160℃以下*	N

試験名称/Test Name		T7：過充電 Overcharge
番号 No.	サンプル状態 Conditions	現象確認 試験後7日間に破裂・発火無/ Occurrence: Nodisassembly and no fire within 7 days
1	初回ｻｲｸﾙ満充電 /First cycle, fully charged	N
2		N
3		N
4		N
5	50回ｻｲｸﾙ満充電 /After 50 cycles, fully charged	N
6		N
7		N
8		N

試験名称/Test Name	T8：強制放電 Forced Discharge
対象外/Not Applicable	

現象/Occurrence	破断：R <Rupture> 発火：F <Fire> 破裂：D <Disassembly> 弁作動：V <Venting> 漏液：L <Leakage> 異常なし：N <No rupture, No fire, No disassembly, No venting, No leakage>

＊ Temperature Measurement by Thermolabel

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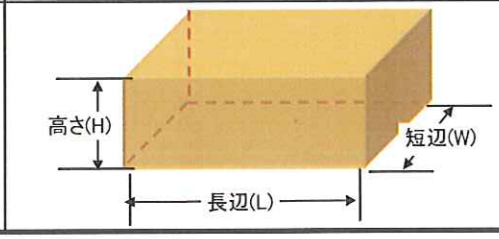
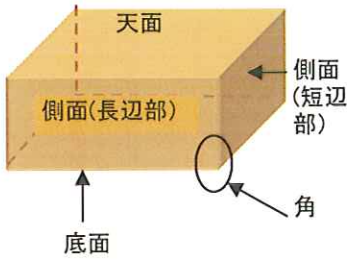
国連勧告試験 梱包結果
Test Result of UN Recommendations for Package

機種名/Sony Model Name	LIP6253LVPC (SY6)			
使用セル/Cell Model Name	US18650G7	構成/Configuration	2P 3S	
試験場所/Test Company	索尼电子(无锡)有限公司			
住所/ Address	无锡国家高新技术产业开发区62号地块		電話/Tel	+86-510-85239269
試験室/Test Room	PACK安全性试验室	試験期間/Test Dates	2008/12/09～2008/12/10	

包装等級 / Packing Group	等級Ⅱ/Packing Group Number Ⅱ (リチウムイオン電池の包装等級は通常等級Ⅱに分類される)				
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)
		347mm	292mm	240mm	10.0kg

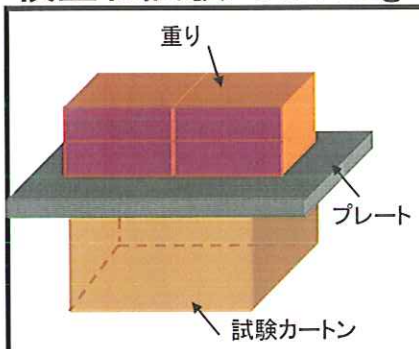
落下試験/Drop Test



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 damege liable to affect safety during transportation
	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 damege liable to affect safety during transportation
	3回目の落下試験	長辺部を水平に /flat on the long side	著しい破損なし/No Leakage, No damege liable to affect safety during transportation
	4回目の落下試験	短辺部を水平に /flat on the short side	著しい破損なし/No Leakage, No damege liable to affect safety during transportation
	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 damege liable to affect safety during transportation
	※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

積重ね試験/Stacking Test



3mの想定段数 /Equivalent package number stacked up 3m	3000mm÷梱包高さ=		13段
試験荷重算出 /Weight Load	(想定段数-試験カートン 1)×梱包質量=		120.0kg
	試験荷重値		125kg
試験結果 /Occurrence	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