

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 ⇒ -)

Cell Model : US14500VR2B

Check item	The element which is given influence	Presence of change
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%?	-
Mass of cell	Is mass difference of the cell less than 20%?	-
Judgment result	New Type or not	Not new

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.

Cell Model : US14500VR2B

Test Item (Function)	The element which is given influence	Presence of change
T1 : Altitude Simulation (Decompression load)	<ul style="list-style-type: none"> • 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.)	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> • Over-voltage Protection • Current Control Device • Safety Device of cell (Cell) • Lead Tab 	-
T6(Cell) : Impact/Crush (Crash load)	<ul style="list-style-type: none"> • Separator (Cell) • Insulation State in a cell (Cell) 	-
T7(Pack) : Overcharge (Charge load)	<ul style="list-style-type: none"> • Overcharge Protection • Thermal Device • Safety Device of cell (Cell) 	-
T8(Cell) : Forced Discharge (Over discharge load)	<ul style="list-style-type: none"> • Finished state of Wound Electrodes (Cell) 	-
Mass of battery pack	Is mass difference of the battery pack less than 20%?	-
Judgment result	New Type or not	Not new

国連勧告試験 結果 1

Test Result of UN Recommendations Part 1

機種名 / Sony Model Name	US14500VR2		
試験場所 / Test Company	ソニーエナジー・デバイス 株式会社 郡山事業所		
住所 / Address	〒963-0531 福島県郡山市日和田町高倉下杉下1-1	電話 / Tel.	+81-24-958-3811
試験室 / Test Room	安全性試験室 / 野外試験室	試験期間 / Test Dates	T1~T5, T8: 2011/07/19~2011/08/04 T6:2013/09/17
判定基準 / Criterion	UN Manual of Tests and Criteria 5th revised edition Amendment 2, Part III, subsection 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 <%以下>	OCV維持率 /Residual OCV <90%以上>	現象確認 / Occurrence
		mass (g)	OCV (V)	mass (g)	OCV (V)			
1	初回サイクル 満充電 / First cycle, Fully charged	18.91	4.206	18.91	4.195	0.00	99.7	N
2		18.89	4.204	18.89	4.194	0.00	99.8	N
3		18.93	4.204	18.93	4.193	0.00	99.7	N
4		18.92	4.207	18.92	4.196	0.00	99.7	N
5		18.89	4.202	18.89	4.191	0.00	99.7	N
6		18.93	4.206	18.93	4.195	0.00	99.7	N
7		18.91	4.207	18.91	4.196	0.00	99.7	N
8		18.90	4.203	18.90	4.193	0.00	99.8	N
9		18.94	4.209	18.94	4.199	0.00	99.8	N
10		18.93	4.206	18.93	4.195	0.00	99.7	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 <%以下>	OCV維持率 /Residual OCV <90%以上>	現象確認 / Occurrence
		mass (g)	OCV (V)	mass (g)	OCV (V)			
1	初回サイクル 満充電 / First cycle, Fully charged	18.91	4.195	18.90	4.144	0.05	98.8	N
2		18.89	4.194	18.89	4.143	0.00	98.8	N
3		18.93	4.193	18.93	4.143	0.00	98.8	N
4		18.92	4.196	18.92	4.144	0.00	98.8	N
5		18.89	4.191	18.89	4.141	0.00	98.8	N
6		18.93	4.195	18.92	4.143	0.05	98.8	N
7		18.91	4.196	18.91	4.143	0.00	98.7	N
8		18.90	4.193	18.90	4.142	0.00	98.8	N
9		18.94	4.199	18.93	4.148	0.05	98.8	N
10		18.93	4.195	18.92	4.145	0.05	98.8	N

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 <%以下>	OCV維持率 /Residual OCV <90%以上>	現象確認 / Occurrence
		mass (g)	OCV (V)	mass (g)	OCV (V)			
1	初回サイクル 満充電 / First cycle, Fully charged	18.90	4.144	18.90	4.144	0.00	100.0	N
2		18.89	4.143	18.89	4.143	0.00	100.0	N
3		18.93	4.143	18.93	4.143	0.00	100.0	N
4		18.92	4.144	18.92	4.144	0.00	100.0	N
5		18.89	4.141	18.89	4.140	0.00	100.0	N
6		18.92	4.143	18.92	4.143	0.00	100.0	N
7		18.91	4.143	18.91	4.143	0.00	100.0	N
8		18.90	4.142	18.90	4.142	0.00	100.0	N
9		18.93	4.148	18.93	4.148	0.00	100.0	N
10		18.92	4.145	18.92	4.145	0.00	100.0	N

質量減少率 / Mass Loss (%)	<input type="checkbox"/> 電池質量 ≤ 1g: 0.5%以下 <input checked="" type="checkbox"/> 1g < 電池質量 ≤ 75g: 0.2%以下 <input type="checkbox"/> 75g < 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>

国連勧告試験 結果 2

Test Result of UN Recommendations Part 2

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 <%以下>	OCV維持率/ Residual OCV <90%以上>	現象確認/ Occurrence
		Mass (g)	OCV (V)	Mass (g)	OCV (V)			
1	初回サイクル 満充電 / First cycle, Fully charged	18.90	4.144	18.90	4.142	0.00	100.0	N
2		18.89	4.143	18.89	4.142	0.00	100.0	N
3		18.93	4.143	18.93	4.142	0.00	100.0	N
4		18.92	4.144	18.92	4.143	0.00	100.0	N
5		18.89	4.140	18.89	4.140	0.00	100.0	N
6		18.92	4.143	18.92	4.143	0.00	100.0	N
7		18.91	4.143	18.91	4.143	0.00	100.0	N
8		18.90	4.142	18.90	4.141	0.00	100.0	N
9		18.93	4.148	18.93	4.147	0.00	100.0	N
10		18.92	4.145	18.92	4.144	0.00	100.0	N
質量減少率 / Mass Loss (%)		<input type="checkbox"/> 電池質量 ≤ 1g: 0.5%以下 <input checked="" type="checkbox"/> 1g < 電池質量 ≤ 75g: 0.2%以下 <input type="checkbox"/> 75g < 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>						

試験名称/Test Name				T5:外部短絡試験 External Short Circuit		試験名称/Test Name		T6:衝突 (Impact) / 圧壊 (Crush)	
番号 No.	サンプル状態 Conditions	最大表面温度 /Max. Surface Temperature 170°C		現象確認 /Occurrence	番号 No.	サンプル状態 Conditions	最大表面温度 /Max. Surface Temperature 170°C		現象確認 /Occurrence
1	初回サイクル 満充電 / First cycle, Fully charged	65.5		N	1	初回サイクル 50%充電 / First cycle, 50% charged	25		N
2		64.8		N	2		24		N
3		66.0		N	3		24		N
4		67.6		N	4		24		N
5		66.4		N	5		24		N
6		78.3		N	/				
7		77.8		N					
8		73.8		N					
9		79.8		N					
10		71.4		N					
現象 / Occurrence		破断: R <Rupture> 発火: F <Fire> 破裂: D <Disassembly> 異常なし: N <No rupture, No fire, No disassembly>			現象 / Occurrence		発火: F <Fire> 破裂: D <Disassembly> 異常なし: N <No fire, No disassembly>		

試験名称 /Test Name	T7: 過充電 Overcharge	試験名称/Test Name	T8: 強制放電 Forced Discharge				
対象外 / Not Applicable		番号 No.	サンプル状態 Conditions	現象確認 /Occurrence	番号 No.	サンプル状態 Conditions	現象確認 /Occurrence
		1	初回サイクル 完全放電 / First cycle, fully discharged	N	11	50回サイクル 完全放電 / 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		
現象 / Occurrence		発火: F <Fire> 破裂: D <Disassembly> 異常なし: N <No fire, No disassembly>					