

UN38.3 檢 測 報 告

UN38.3 Test Report

申請商名稱: 矽谷能源股份有限公司

Applicant's name: SEGL ENERGY CO., LTD.

產品名稱 Product Name:	電動輔助自行車電池 E-bike battery
商標名稱 Brand Name:	N/A
型號 Model Name:	EA304L26-RB1
報告編號 Report No :	AC20020408R01
測試標準 Test Standard:	ST/SG/AC.10/11/Rev.6/Section 38.3

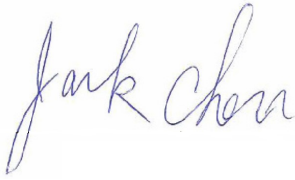
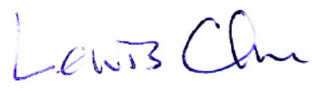
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TEST REPORT
UN38.3, Sixth Edition
Recommendations on transport of dangerous goods, manual of test and criteria,
Section 38.3 – Lithium metal and lithium ion batteries

Report Number	AC20020408R01
Tested by (name + signature)	JACK CHEN 
Reviewed by (name + signature)	
Approved by (name + signature)	Lewis Chu 
Date of issue	04 Feb.2020
Total number of pages	15 Pages
Testing laboratory	AnCert Certification Co., Ltd
Address	3F., No. 155, Xinhu 1st Rd., Neihu Dist., Taipei City 114, Taiwan
Applicant's name	SEGL ENERGY CO., LTD.
Address	No. 76, Wuxun St., Anle Dist., Keelung City 204, Taiwan
Test specification:	
Standard	ST/SG/AC.10/11/Rev.6/Section 38.3
Test procedure	Test report
Non-standard test method	N/A
Test item description	
	E-bike smart battery
Trade Mark	N/A
Manufacturer	SEGL ENERGY CO., LTD
Address	No. 76, Wuxun St., Anle Dist., Keelung City 204, Taiwan
Model/Type reference	Rated Voltage: 46.8Vd.c.
Ratings	Rated Capacity: 10.4Ah 486.7Wh

Summary of testing:

Tests performed (name of test and test clause):

Test items	Sample Number
T.1: Altitude simulation / 高度模擬	A1# - A8 #
T.2: Thermal test / 溫度迴圈	
T.3: Vibration / 振動	
T.4: Shock / 衝擊	
T.5: External short circuit / 外部短路	
T.6: Crush / 擠壓	C9# - C13#
T.7 Overcharge / 過充電	A1# - A8#
T.8: Forced discharge / 強制放電	C14#- C25#

The sample's status is good.

樣品狀況良好。

The conditions of the batteries of samples No.A1# to A4# are at first cycle, in fully charged states.

樣品編號 A1# -A4#為第一次迴圈充放電週期完全充電狀態的電池。

The conditions of the batteries of samples No. A5# - A8# are after fifty cycles ending in fully charged states.

樣品編號 A5# - A8#為五十次迴圈充放電週期後完全充電狀態的電池。

The conditions of the cells of samples No. C9# to C13# are at first cycle at 50% of the design rated capacity.

樣品編號 C9# - C13#為第一次迴圈充放電週期充電至標稱容量的 50%狀態的電芯。

The conditions of the batteries of samples No. A1# - A4# are at first cycle, in fully charged states.

樣品編號 A1# - A4#為第一次迴圈充放電週期後完全充電狀態的電池。

The conditions of the batteries of samples No. A5# - A8# are after fifty cycles ending in fully charged states.

樣品編號 A5# - A8#為五十次迴圈充放電週期後完全充電狀態的電池。

The conditions of the cells of samples No. C14# to C23# are at first cycle, in fully discharged states.

樣品編號 C14# - C23#為第一次迴圈充放電週期完全放電狀態的電芯。

The conditions of the cells of samples No. C24# to C33# are after fifty cycles ending in fully discharged states.

樣品編號 C24# to C33#為五十次迴圈充放電週期後完全放電狀態的電芯。

Test Procedure:

1. Each battery type is subjected to tests T.1 to T.8. Tests T.1 to T.5 are conducted in sequence on the same battery. Tests 6 and 8 are conducted using not otherwise tested batteries. Test T.7 may be conducted using undamaged batteries previously used in Tests T.1 to T.5 for purposes of testing on cycled batteries.

每一種類型的電池均應進行 T.1 至 T.8 項試驗。電池必須按順序在相同的一組電池上進行試驗 T.1 至 T.5。試驗 T.6 和 T.8 應使用未另外試驗過的電池。試驗 T.7 可以使用先前在試驗 T.1 至 T.5 中使用過的未損壞電池進行，以便測試進行在迴圈過的電池上。

2. In order to quantify the mass loss, the following procedure is provided:

$$\text{Mass loss(\%)} = (M1 - M2) / M1 \times 100$$

為了量化品質損失，可用以下公式計算：品質損失(%)=(M1-M2)/M1×100

Where M1 is the mass before the test and M2 is the mass after the test. When mass loss does not exceed the values in Table below, it is considered as "no mass loss".

式中：M1 是試驗前的品質，M2 是試驗後的品質。如果品質損失不超過下表所列的數值，應視為“無品質損失”。

Mass M of cell or battery 電芯或電池的品質	Mass loss limit 品質損失限值
M < 1g	0.5%
1g ≤ M ≤ 75g	0.2%
M > 75g	0.1%

3. In test T.1 to T.4, batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test battery after testing is not less than 90% of its voltage immediately prior to this procedure.

在測試 T.1 至 T.4 中，電池須滿足無滲漏、無洩氣、無解體、無破裂和無起火，並且每個試驗電池在試驗後的開路電壓不小於其在進行這一試驗前電壓的 90%。

Comment:

This report also includes:

- Photo documentation: 1 pages

Possible test case verdicts:

- test case does not apply to the test object N (not applicable)

判定不適用於測試對象:

- test object does meet the requirement P (Pass)

測試符合規定:

-est object does not meet the requirement F (Fail)

測試不符合規定:

Testing	
Date of receipt of test item.....	02 Jan. 2020
Date(s) of performance of tests.....	02 Jan. 2020~03 Feb. 2020

General remarks:		
The test results presented in this report relate only to the object tested. 本報告的測試結果僅對送檢樣品負責。 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. 本報告未經本實驗室書面批准不得全部複製。 "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a point is used as the decimal separator.		
General product information: The batteries, model no. EA304L29-SSE046, are E-bike smart battery and used in port-able applications, consist of 13S4P Cylindrical Li-ion Cells, model no. INR18650-M29 Additionally, details information of the cell and battery, as following:		
Product name/產品名稱	Cylindrical Li-ion Cell	E-bike smart battery
Type/model/型號	INR18650-M26	48V 10.4Ah 486.7Wh
Nominal voltage/標稱電壓	3.6V	48V
Rated capacity/額定容量	2600mAh	10.4Ah
Recommended charging Voltage/推薦充電電壓	4.2V	48V
Maximum charging Current/最大充電電流	1.3A	3A
Maximum discharging Current/最大放電電流	10A	15A
Discharge cut-off voltage/放電截止電壓	2.75V	35.75A
Weight/重量	Approx.49.0g	Approx. 3680g
The final evaluation of the battery must be conducted in the end product for which the battery will be used.		

Clause	Requirement + Test	Result - Remark	Verdict
38.3.4.1	Test T.1: Altitude simulation/高度模擬		P
	Test cells and batteries shall be stored at a pressure of 11.6 kPa or less for at least six hours at ambient temperature(20±5°C)/溫度為 20±5°C、大氣壓力不大於 11.6 kPa 的環境中貯存不少於 6 個小時。		
	Cells and batteries meet this requirement if there is no mass loss, no leakage, no venting no disassembly , no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure .the requirement relating to voltage is not applicable to test cells and batteries at fully discharged states./電芯和電池符合要求：無品質損失、無漏液、無冒煙、無分解、無破裂以及無著火現象：電芯或電池測試後的開路電壓不低於測試前開路電壓的 90%。此項關於電壓方面的要求不適用於完全放電後的電芯和電池。	No leakage, no venting, no disassembly, no rupture and no fire./無漏液、無冒煙、無分解、無破裂以及無著火現象。 The data see table 1./測試資料見表 1。	P
38.3.4.2	Test .2 : thermal test/溫度測試		P
	Test cells and batteries are to be stored for at least six hours at a test temperature equal to 72±2°C, followed by storage for at least six hours at a test temperature equal to -40±2°C. The maximum time interval between test temperature extremes is 30 minutes. This procedure is to be repeated 10 times, after which all test cells and batteries are to be stored for 24 hours at ambient temperature(20±5°C). / 首先將樣品放在 72 ±2°C 的環境中放置至少 6 個小時，然後放在-40±2°C 的環境中放置至少 6 個小時，溫度暫緩的最大間隔時間為 30 分鐘。如此迴圈 10 次，最後將樣品放在 20±5°C 的環境中靜置 24 小時。		P
	For large cells and batteries the duration of exposure to the test temperature extremes should be at least 12 hours./對於大電芯，在高溫和低溫中放置的時間最少為 12 小時。		N
	Cells and batteries meet this requirement if there is no mass loss no leakage, no venting, disassembly, no repture and no fire and if the open circuit voltage of each cell or battery after testing is not less than 60% of its voltage immediately prior to this procedure. The requirement I relating to coltage is not applicable to test cells and batteries st fully discharged states./電芯和電池符合要求：無品質損失、無漏液、無冒煙、無分解、無破裂以及無著火現象：電芯和電池測試後的開路電壓不低於測試前開路電壓的 90%。此項關於電壓方面的要求不適用於完全放電後的電芯和電池。	No leakage, no venting, no disassembly, no rupture and no fire./無漏液、無冒煙、無分解、無破裂以及無著火現象。 The data see table 1./測試資料見表 1。	P
38.3.4.3	Test t.3: Vibration/振動		P

Clause	Requirement + Test	Result - Remark	Verdict
	<p>Cells and batteries are firmly secured to the platform of the vibration machine without distorting the cells in such a manner so as to faithfully transmit the vibration. The vibration shall be a sinusoidal waveform with a logarithmic sweep between 7 Hz and 200 Hz and back to 7 Hz traversed in 15 minutes. This cycle shall be repeated 12 times for a total of 3 hours for each of three mutually perpendicular mounting positions of the cell. One of the terminal faces. / 樣品必須牢固地安裝在振動臺面上。振動以正弦波形式，以 7Hz 增加至 200Hz，然後減少回到 7Hz 為一個迴圈，一個迴圈持續 15 分鐘。對樣品從三個互相垂直的方向上迴圈 12 次，共 3 個小時。其中一個振動方向必須是垂直樣品的極性平面。</p>		P
	<p>The logarithmic frequency sweep shall differ for cells and batteries with a gross mass of not more than 12 kg (cells and small batteries), and for batteries with a gross mass of more than 12 kg (large batteries). / 對於品質不大於 12kg 的樣品（電芯和電池）和品質超過 12kg 的電池（大電池），對數掃頻不同。</p>		P
	<p>For cells and small batteries: from 7 Hz a peak acceleration of 1 gn is maintained until 18 Hz is reached. The amplitude is then maintained at 0.8 mm (1.6 mm total excursion) and the frequency increased until a peak acceleration of 8 gn occurs (approximately 50 Hz). A peak acceleration of 8 gn is then maintained until the frequency is increased to 200 Hz. / 對於電芯和小電池，對數掃頻為：從 7Hz 開始保持 1gn 的最大加速度直到頻率為 18Hz，然後將振幅保持在 0.8mm（總偏移 1.6mm）並增加頻率直到最大加速度達到 8gn（頻率約為 50Hz），將最大加速度保持在 8gn 直到頻率增加到 200Hz。</p>		P
	<p>For large batteries: from 7 Hz to a peak acceleration of 1 gn is maintained until 18 Hz is reached. The amplitude is then maintained at 0.8 mm (1.6 mm total excursion) and the frequency increased until a peak acceleration of 2 gn occurs (approximately 25 Hz). A peak acceleration of 2 gn is then maintained until the frequency is increased to 200 Hz. / 對於大電池，對數掃頻為：從 7Hz 開始保持 1gn 的最大加速度直到頻率為 18Hz，然後將振幅保持在 0.8mm（總偏移 1.6mm）並增加頻率直到最大加速度達到 2gn（頻率約 25Hz），將最大加速度保持在 2gn 直到頻率增加到 200Hz。</p>		N

Clause	Requirement + Test	Result - Remark	Verdict
	<p>Cells and batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire during the test and after the test and if the open circuit voltage of each test cell or battery directly after testing in its third perpendicular mounting position is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states./電芯和電池符合要求：無品質損失、無漏液、無冒煙、無分解、無破裂以及無著火現象；電芯或電池測試後的開路電壓不低於測試前開路電壓的 90%。此項關於電壓方面的要求不適用於完全放電後的電芯和電池。</p>	<p>No leakage, no venting, no disassembly, no rupture and no fire./無漏液、無冒煙、無分解、無破裂以及無著火現象。 The data see table 1./測試資料見表 1。</p>	P
38.3.4.4	Test T.4: Shock/衝擊		P
	<p>Test cells and batteries shall be secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each test battery. Each cell or battery shall be subjected to a half-sine shock of peak acceleration of 150 gn and pulse duration of 6 milliseconds. Each cell or battery shall be subjected to three shocks in the positive direction followed by three shocks in the negative direction of three mutually perpendicular mounting positions of the cell or battery for a total of 18 shocks. /以穩固的托架固定住每個樣品。對每個樣品以峰值為 150gn 的半正弦的加速度撞擊，脈衝持續 6ms。每個樣品必須在三個互相垂直的電池安裝方位的正方向經受三次擊，接著在反方向經受三次衝擊，總共經受 18 次衝擊。</p>		P
	<p>However, large cells and large batteries shall be subjected to a half-sine shock of peak acceleration of 50 gn and pulse duration of 11 milliseconds. Each cell or battery is subjected to three shocks in the positive direction followed by three shocks in the negative direction of each of three mutually perpendicular mounting positions of the cell for a total of 18 shocks. /大電芯和大電池須經受最大加速度50gn和脈衝持續時間11ms的半正弦波衝擊。每個樣品必須在三個互相垂直的電池安裝方位的正方向經受三次衝擊，接著在反方向經受三次衝擊，總共經受18次衝擊。</p>		N

Clause	Requirement + Test	Result - Remark	Verdict
	<p>Cells and batteries meet this requirement if there is no mass loss, no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states. / 電芯和電池符合要求：無品質損失、無漏液、無冒煙、無分解、無破裂以及無著火現象；電芯或電池測試後的開路電壓不低於測試前開路電壓的 90%。此項關於電壓方面的要求不適用於完全放電後的電芯和電池。</p>	<p>No leakage, no venting, no disassembly, no rupture and no fire./無漏液、無冒煙、無分解、無破裂以及無著火現象。 The data see table 1./測試資料見表 1。</p>	P
38.3.4.5	Test T.5: External short circuit/外部短路		P
	<p>The cell or battery to be tested shall be temperature stabilized so that its external case temperature reaches 57±4°C and then the cell or battery shall be subjected to a short circuit condition with a total external resistance of less than 0.1 ohm at 57±4°C. This short circuit condition is continued for at least one hour after the cell or battery external case temperature has returned to 57±4°C. /保持測試環境溫度穩定在 57±4°C，以便樣品外表溫度達到 57±4°C 然後將樣品正負極用小於 0.1 歐姆的總電阻回路進行短路，樣品的外表溫度恢復到 57±4°C 之後保持短路狀態 1 小時以上。</p>		P
	<p>Cells and batteries meet this requirement if their external temperature does not exceed 170 °C and there is no disassembly, no rupture and no fire during the test and within six hours after the test./電芯和電池符合要求：在測試過程中以及之後 6 個小時內，外表溫度不超過 170°C，並且無分解、無破裂和無著火現象發生。</p>	<p>No disassembly, no rupture and no fire during the test and within six hours after the test./在測試過程中以及之後 6 個小時內，外表溫度不超過 170°C，並且無分解、無破裂和無著火現象發生。The data see table 1. / 測試資料見表 1。</p>	P
38.3.4.6	Test T.6: Impact / Crush/撞擊/擠壓		P
	<p>Test procedure – Impact (applicable to cylindrical cells greater than or equal to 18 mm in diameter) / 撞擊(適合於直徑大於或等於 18mm 的圓柱形電芯)。</p>		P

Clause	Requirement + Test	Result - Remark	Verdict
	<p>The sample cell or component cell is to be placed on a flat smooth surface. A 15.8 mm±0.1mm diameter, at least 6 cm long, or the longest dimension of the cell, whichever is greater, Type 316 stainless steel bar is to be placed across the centre of the sample. A 9.1 kg±0.1 kg mass is to be dropped from a height of 61±2.5 cm at the intersection of the bar and sample in a controlled manner using a near frictionless, vertical sliding track or channel with minimal drag on the falling mass. The vertical track or channel used to guide the falling mass shall be oriented 90 degrees from the horizontal supporting surface. /將樣品放在一個平坦的光滑平面上。將一直徑為15.8 mm± 0.1mm，長度不小於6cm的316不銹鋼棒橫過樣品中部放置 後，將一品質為9.1 kg±0.1kg的重物從61±2.5 cm的高度落向樣品。</p>		P
	<p>The test sample is to be impacted with its longitudinal axis parallel to the flat surface and perpendicular to the longitudinal axis of the 15.8 mm±0.1mm diameter curved surface lying across the centre of the test sample. Each sample is to be subjected to only a single impact. /接受撞擊的樣品，縱軸應與平坦的表面平行並與橫放在樣品中心的直徑15.8 mm±0.1mm彎曲表面的縱軸垂直。每一個樣品只接受一次撞擊。</p>		P
	<p>Test Procedure – Crush (applicable to prismatic, pouch, coin/button cells and cylindrical cells not more than 18 mm in diameter). /擠壓 (適用於棱柱形、袋狀、硬幣/鈕扣電芯和直徑不超過18mm的圓柱形電芯)。</p>		N
	<p>A cell or component cell is to be crushed between two flat surfaces. The crushing is to be gradual with a speed of approximately 1.5 cm/s at the first point of contact. The crushing is to be continued until the first of the three options below is reached. /將樣品放在兩個平面之間擠壓，擠壓力度逐漸加大，在第一個接觸點上的速度大約為1.5cm/s。擠壓持續進行，直到出現以下三種情況之一。</p>		N
	<p>(a) The applied force reaches 13 kN±0.78 kN. /施加力達到 13 kN±0.78 kN</p>		N
	<p>(b) The voltage of the cell drops by at least 100mV. /樣品的電壓下降至少100mV</p>		N
	<p>(c) The cell is deformed by 50% or more of its original thickness. /電池變形達原始厚度的50%以上。</p>		N

Clause	Requirement + Test	Result - Remark	Verdict
	A prismatic or pouch cell shall be crushed by applying the force to the widest side. A button/coin cell shall be crushed by applying the force on its flat surfaces. For cylindrical cells, the crush force shall be applied perpendicular to the longitudinal axis. /棱柱形或袋狀電芯應從最寬的一面施壓。鈕扣 / 硬幣形電芯應從其平坦表面施壓。圓柱形應從與縱軸垂直的方向施壓。		N
	Each test cell or component cell is to be subjected to one crush only. The test sample shall be observed for a further 6 h. The test shall be conducted using test cells or component cells that have not previously been subjected to other tests. / 每個樣品都是全新樣品，並且只經受一次施壓。施壓結束後樣品應靜置觀察6小時。		N
	Cells and component cells meet this requirement if their external temperature does not exceed 170°C and there is no disassembly and no fire during the test and within six hours after this test. / 電芯滿足求：在測試過程中以及之後6個小時內，外表溫度不超過170°C，並且無分解和無著火現象發生。	No disassembly and no fire. /無分解，無著火現象發生。 The data see table 2. / 測試資料見表 2。	P
38.3.4.7	Test T.7: Overcharge/過充電		P
	The charge current shall be twice the manufacturer's recommended maximum continuous charge current. Tests are to be conducted at ambient temperature. The duration of the test shall be 24 hours. The minimum voltage of the test shall be as follows: /在室溫下，以2倍的製造商宣稱的最大持續充電電流對樣品充電，測試時間為24小時。測試的最小電壓如下：		P
	(a) When the manufacturer's recommended charge voltage is not more than 18V, the minimum voltage of the test shall be the lesser of two times the maximum charge voltage of the battery or 22V. /如果製造商宣稱的充電電壓不超過18V，本測試的最小充電電壓應是製造商宣稱的最大充電電壓的兩倍或者是22V之中的較小者。		N
	(b) When the manufacturer's recommended charge voltage is more than 18V, the minimum voltage of the test shall be 1.2 times the maximum charge voltage. / 如果製造商宣稱的充電電壓超過18V，本測試的最小充電電壓應該是製造商宣稱的最大充電電壓的1.2倍。	The voltage of the test is 65.52V, and the current is 4A. / 測試電壓為 65.52V, 電流為4A	P
	There is no disassembly and no fire during the test and within seven days after the test. /在測試中和測試完成後 7 天內，樣品無分解和無著火現象。	No disassembly and no fire. /無分解，無著火現象發生。 The data see table 3. / 測試資料見表 3。	P
38.3.4.8	Test T.8: Forced discharge/強制放電		P

Clause	Requirement + Test	Result - Remark	Verdict
	<p>Each cell shall be forced discharged at ambient temperature by connecting it in series with a 12V D.C. power supply at an initial current equal to the maximum discharge current specified by the manufacturer. /在室溫下，將單個電芯連接在12V的直流電源上進行強制放電，此直流電源供給每個電芯初始電流為製造商宣稱的最大放電電流。</p> <p>The specified discharge current is to be obtained by connecting a resistive load of the appropriate size and rating in series with the test cell. Each cell shall be forced discharged for a time interval (in hours) equal to its rated capacity divided by the initial test current (in ampere). /指定的放電電流通過串聯在測試電芯上的合適大小和功率的負載來獲得，每個電芯的強制放電時間(小時)為額定容量除以初始電流(安培)。</p>		P
	<p>There is no disassembly and no fire during the test and within seven days after the test. /在測試中和測試完成後 7 天內，樣品無分解和無著火現象發生。</p>	<p>No disassembly and no fire. /無分解和無著火現象發生。 The data see table 4. / 測試資料見表 4</p>	P

Table 1: T.1~T.5 / 表 1. 測試 T.1~測試 T.5

Sample No. 樣品編號	Mass prior to Test (g) 試驗前品質	OCV prior to test (V) 試驗前電壓	Test 1: Altitude Simulation 試驗1：高度模擬		Test 2: Thermal test 試驗 2：溫度試驗		Test 3: Vibration 試驗 3：振動		Test 4 : Shock 試驗 4：衝擊		Test 5 : External Short Circuit 試驗5：外部短路
			Mass loss(%) 品質損失(%) 高度模擬	Change ratio 電壓比(%)	Mass loss(%) 品質損失(%)	Change ratio 電壓比(%)	Mass loss(%) 品質損失(%)	Change ratio 電壓比(%)	Mass loss(%) 品質損失(%)	Change ratio 電壓比(%)	Temp.(°C) 溫度(°C)
A1#	3681	54.38	0.00	100.00	0.00	99.42	0.00	100.00	0.00	100.00	57.8
A2#	3688	54.41	0.00	99.98	0.00	99.36	0.00	100.00	0.00	100.00	58.4
A3#	3688	54.41	0.00	100.00	0.00	99.42	0.00	100.00	0.00	100.00	57.7
A4#	3689	54.39	0.00	100.00	0.00	99.32	0.00	100.00	0.00	100.00	57.8
A5#	3689	54.41	0.00	100.00	0.00	99.41	0.00	100.00	0.00	100.00	58.4
A6#	3682	54.42	0.00	100.00	0.00	99.33	0.00	99.98	0.00	100.00	57.5
A7#	3681	54.37	0.00	100.00	0.00	99.35	0.00	100.00	0.00	100.00	57.8
A8#	3688	54.38	0.00	100.00	0.00	99.41	0.00	99.98	0.00	100.00	58.1

Table 2: Crush or impact/ 表 2：擠壓或撞擊

	Sample No. 樣品編號	C9#	C10#	C11#	C12#	C13#
Test 6: Crush or impact 試驗 6 擠壓或撞擊	OCV prior to test (V) 試驗前電壓	3.846	3.852	3.852	3.849	3.842
	Temp. (°C) 溫度	98.7	99.6	95.3	91.7	101.2

Table 3 : Overcharge / 表 3：過充電

	Sample No. 樣品編號	A1#	A2#	A3#	A4#	A5#	A6#	A7#	A8#
Test7: Overcharge 試驗 7 過充電	OCV prior to test (V) 試驗前電壓	37.99	38.05	37.99	38.01	38.03	37.99	38.04	38.03

Table 4 : Force discharge / 表 4 : 強制放電

	Sample No. 樣品編號	C14#	C15#	C16#	C17#	C18#	C19#	C20#	C21#	C22#	C23#
Test8: Forced discharge 試驗 8 強制放電	OCV prior to test (V) 試驗前電壓	3.352	3.215	3.295	3.214	3.295	3.320	3.259	3.374	3.314	3.302
	Sample No. 樣品編號	C24#	C25#	C26#	C27#	C28#	C29#	C30#	C31#	C32#	C33#
	OCV prior to test (V) 試驗前電壓	3.369	3.274	3.290	3.226	3.223	3.332	3.341	3.259	3.347	3.275



===END OF TEST REPORT===