

# LITHIUM CELLS OR BATTERIES TEST SUMMARY IN ACCORDANCE WITH SUB-SECTION 38.3 OF MANUAL OF TEST AND CRITERIA

## BATTERY TRANSPORTATION INFORMATION

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Name of cell, battery or product manufacturer, as applicable:<br>Item Number : CR2016<br>Item Name : CR2016<br>Item Description : Lithium Metal Battery Cell                                                                                                                                                                                                                                                                                                                                  | Cell, battery or product manufacturer's contact information to include address, phone number, email address and website for more information:<br><br>Tohoku Murata Manufacturing Co., Ltd.<br>1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima, 963-0531 Japan<br>Phone: +81-24-955-7834<br>e-mail: <a href="mailto:tmm-unr-smry@murata.com">tmm-unr-smry@murata.com</a><br>Website: <a href="https://www.murata.com/en-global/group/tohokumurata">https://www.murata.com/en-global/group/tohokumurata</a> |                                              |
| Name of the test laboratory to include address, phone number, email address and website for more information:<br><br>Tohoku Murata Manufacturing Co., Ltd.<br>1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima, 963-0531 Japan<br>Phone: +81-24-955-7834<br>e-mail: <a href="mailto:tmm-unr-smry@murata.com">tmm-unr-smry@murata.com</a><br>Website: <a href="https://www.murata.com/en-global/group/tohokumurata">https://www.murata.com/en-global/group/tohokumurata</a> | A unique test report identification number:<br>UN38.3-CR2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Date of the test report:<br><br>Jan 14, 2022 |
| Description of cell or battery to include at a minimum: Lithium ion or Lithium metal cell or battery; Mass; Watt-hour rating, or lithium content; Physical description of the cell/battery; and Model<br><br>Cell/battery Type : Lithium Metal<br>Cell or Battery : Cell<br>LC or W/h rating : 0.026g<br>Cell or Battery Weight : 1.8 g<br>Physical description : Lithium Metal Battery Cell(Coin shaped)                                                                                     | List of tests conducted and results (i.e., pass/fail):<br><br>Test T.1: Altitude Simulation : Pass<br>Test T.2: Thermal Test : Pass<br>Test T.3: Vibration : Pass<br>Test T.4: Shock : Pass<br>Test T.5: External short circuit : Pass<br>Test T.6: Impact : Pass<br>Test T.7: Overcharge : Not applicable<br>Test T.8: Forced discharge : Pass<br><br>Testing additional comments:                                                                                                                                           |                                              |
| Reference to assembled battery testing requirements, if applicable (i.e., 38.3.3;(f) and 38.3.3;(g):<br><br>Not Applicable                                                                                                                                                                                                                                                                                                                                                                    | Reference to the revised edition of the Manual of Test and Criteria used and to amendments thereto, if any:<br><br>Revision 6 Amendment 1                                                                                                                                                                                                                                                                                                                                                                                     |                                              |
| <b>PRODUCT CLASSIFICATION FOR TRANSPORT (According to UN - DGP)</b>                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                              |
| UN Classification:<br><b>UN3090</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Proper Shipping Name:<br><b>Lithium Metal Battery Cell</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                              |
| Signature with name and title of signatory as an indication of the validity of information provided:<br><br>Hideaki Takahashi<br>Quality Assurance Department<br>                                                                                                                                                                                                                                          | This document remains valid as long as no changes, modification, or additions are made to the model(s) described in this document, after being transported from a Tohoku Murata Manufacturing.<br>The model(s) has (have) been classified according to the applicable transport regulations and the UN Manual of Tests and Criteria as of the date of the certification, The model(s) must be packed, labeled, and documented according to country and other international regulations for transportation.                    |                                              |
| Date document was generated:<br>14-Jan-22                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                              |

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## リチウム電池認証書／Lithium cell or battery Certification

No: UN38.3-CR2016  
Date: Jan 14,2022

1. ■単電池／Cell ( ■シングルセル／Single cell □シングルセルバッテリー／Single cell battery)  
□組電池／Battery(Pack) (セル構成／Composition of cell : )
2. モデル名／Model Name CR2016 Cell Type : CR2016 (muRata) (Made in Indonesia)

Murata Product Name CR2016

3. 顧客名／Customer : Murata Manufacturing Co.,Ltd.

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/<br>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                         | 圧壊 (Crush)                       | OK                     |                                          |
| T7                         | 過充電 (Overcharge)                 | —                      | 一次電池は対象外／Primary battery is not applied. |
| T8                         | 強制放電 (Forced discharge)          | OK                     |                                          |

試験実施日／Tested Date(T1~T6, T8) : 2020/09/28~2020/10/28

梱包試験実施日／Tested Date for Package : 2015/01/14~2015/01/17

5. 定格／Rated

| 項目／Item                             | 規格値／Specification | 備考／Remarks |
|-------------------------------------|-------------------|------------|
| 公称電圧／Nominal voltage                | 3.0V              |            |
| 公称容量／Nominal capacity               | 90mAh             |            |
| 総リチウム含有量／Aggregated lithium content | 0.026g            |            |

上記テスト結果は国連勧告試験 (UN Manual of Tests and Criteria 6th revised edition Amendment 1 , Part III, subsection 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, Tohoku Murata Manufacturing 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, 6th revised  
edition Amendment 1 , Part III, subsection 38.3.



Hideaki Takahashi  
Quality Assurance Department  
Tohoku Murata Manufacturing Co., Ltd.

# 国連勧告試験 結果 1

## Test Result of UN Recommendations Part 1

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|                         |                            |                                                                                                                                                                        |         |             |                   |                                  |                                   |                    |
|-------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|-------------------|----------------------------------|-----------------------------------|--------------------|
| 機種名 / Murata Model Name |                            | CR2016 (Made in Indonesia)                                                                                                                                             |         |             |                   |                                  |                                   |                    |
| 試験場所 / Test Company     |                            | 株式会社 東北村田製作所 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 |                                  | 2020/09/28 - 2020/10/28           |                    |
| 判定基準 / Criterion        |                            | UN Manual of Tests and Criteria 6th revised edition Amendment 1, 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<br>No.               | サンプル状態<br>Conditions       | 試験前 / Before                                                                                                                                                           |         | 試験後 / After |                   | 質量減少率<br>/ Mass Loss<br><0.2%以下> | OCV維持率<br>/ Residual OCV<br>90%以上 | 現象<br>/ Occurrence |
|                         |                            | mass (g)                                                                                                                                                               | OCV (V) | mass (g)    | OCV (V)           |                                  |                                   |                    |
| 1                       | 未放電 /<br>Undischarged      | 1.705                                                                                                                                                                  | 3.287   | 1.705       | 3.284             | 0.00                             | 99.9                              | N                  |
| 2                       |                            | 1.714                                                                                                                                                                  | 3.288   | 1.714       | 3.285             | 0.01                             | 99.9                              | N                  |
| 3                       |                            | 1.722                                                                                                                                                                  | 3.288   | 1.722       | 3.285             | 0.00                             | 99.9                              | N                  |
| 4                       |                            | 1.725                                                                                                                                                                  | 3.288   | 1.725       | 3.285             | 0.02                             | 99.9                              | N                  |
| 5                       |                            | 1.716                                                                                                                                                                  | 3.287   | 1.716       | 3.285             | 0.02                             | 99.9                              | N                  |
| 6                       |                            | 1.717                                                                                                                                                                  | 3.289   | 1.717       | 3.287             | 0.00                             | 99.9                              | N                  |
| 7                       |                            | 1.727                                                                                                                                                                  | 3.291   | 1.727       | 3.288             | 0.01                             | 99.9                              | N                  |
| 8                       |                            | 1.726                                                                                                                                                                  | 3.290   | 1.726       | 3.287             | 0.02                             | 99.9                              | N                  |
| 9                       |                            | 1.720                                                                                                                                                                  | 3.290   | 1.720       | 3.288             | 0.01                             | 99.9                              | N                  |
| 10                      |                            | 1.720                                                                                                                                                                  | 3.291   | 1.719       | 3.290             | 0.01                             | 99.9                              | N                  |
| 11                      | 完全放電 /<br>Fully discharged | 1.713                                                                                                                                                                  |         | 1.713       |                   | 0.01                             |                                   | N                  |
| 12                      |                            | 1.710                                                                                                                                                                  |         | 1.710       |                   | 0.02                             |                                   | N                  |
| 13                      |                            | 1.705                                                                                                                                                                  |         | 1.705       |                   | 0.01                             |                                   | N                  |
| 14                      |                            | 1.724                                                                                                                                                                  |         | 1.724       |                   | 0.01                             |                                   | N                  |
| 15                      |                            | 1.721                                                                                                                                                                  |         | 1.721       |                   | 0.03                             |                                   | N                  |
| 16                      |                            | 1.716                                                                                                                                                                  |         | 1.716       |                   | 0.01                             |                                   | N                  |
| 17                      |                            | 1.702                                                                                                                                                                  |         | 1.702       |                   | 0.01                             |                                   | N                  |
| 18                      |                            | 1.728                                                                                                                                                                  |         | 1.728       |                   | 0.01                             |                                   | N                  |
| 19                      |                            | 1.729                                                                                                                                                                  |         | 1.729       |                   | 0.00                             |                                   | N                  |
| 20                      |                            | 1.707                                                                                                                                                                  |         | 1.707       |                   | 0.02                             |                                   | N                  |
| 試験名称 / Test Name        |                            | T2:温度試験 Thermal                                                                                                                                                        |         |             |                   |                                  |                                   |                    |
| 番号<br>No.               | サンプル状態<br>Conditions       | 試験前 / Before                                                                                                                                                           |         | 試験後 / After |                   | 質量減少率<br>/ Mass Loss<br><0.2%以下> | OCV維持率<br>/ Residual OCV<br>90%以上 | 現象<br>/ Occurrence |
|                         |                            | mass (g)                                                                                                                                                               | OCV (V) | mass (g)    | OCV (V)           |                                  |                                   |                    |
| 1                       | 未放電 /<br>Undischarged      | 1.705                                                                                                                                                                  | 3.285   | 1.704       | 3.269             | 0.03                             | 99.5                              | N                  |
| 2                       |                            | 1.714                                                                                                                                                                  | 3.287   | 1.713       | 3.272             | 0.04                             | 99.6                              | N                  |
| 3                       |                            | 1.722                                                                                                                                                                  | 3.285   | 1.721       | 3.272             | 0.04                             | 99.6                              | N                  |
| 4                       |                            | 1.725                                                                                                                                                                  | 3.285   | 1.724       | 3.273             | 0.02                             | 99.6                              | N                  |
| 5                       |                            | 1.716                                                                                                                                                                  | 3.285   | 1.715       | 3.270             | 0.05                             | 99.5                              | N                  |
| 6                       |                            | 1.717                                                                                                                                                                  | 3.287   | 1.716       | 3.272             | 0.03                             | 99.5                              | N                  |
| 7                       |                            | 1.727                                                                                                                                                                  | 3.289   | 1.726       | 3.274             | 0.03                             | 99.5                              | N                  |
| 8                       |                            | 1.726                                                                                                                                                                  | 3.288   | 1.725       | 3.274             | 0.03                             | 99.6                              | N                  |
| 9                       |                            | 1.720                                                                                                                                                                  | 3.289   | 1.719       | 3.272             | 0.04                             | 99.5                              | N                  |
| 10                      |                            | 1.719                                                                                                                                                                  | 3.290   | 1.719       | 3.275             | 0.04                             | 99.5                              | N                  |
| 11                      | 完全放電 /<br>Fully discharged | 1.713                                                                                                                                                                  |         | 1.713       |                   | 0.03                             |                                   | N                  |
| 12                      |                            | 1.710                                                                                                                                                                  |         | 1.709       |                   | 0.02                             |                                   | N                  |
| 13                      |                            | 1.705                                                                                                                                                                  |         | 1.705       |                   | 0.01                             |                                   | N                  |
| 14                      |                            | 1.724                                                                                                                                                                  |         | 1.724       |                   | 0.03                             |                                   | N                  |
| 15                      |                            | 1.721                                                                                                                                                                  |         | 1.721       |                   | 0.00                             |                                   | N                  |
| 16                      |                            | 1.716                                                                                                                                                                  |         | 1.715       |                   | 0.03                             |                                   | N                  |
| 17                      |                            | 1.702                                                                                                                                                                  |         | 1.701       |                   | 0.04                             |                                   | N                  |
| 18                      |                            | 1.728                                                                                                                                                                  |         | 1.728       |                   | 0.02                             |                                   | N                  |
| 19                      |                            | 1.729                                                                                                                                                                  |         | 1.728       |                   | 0.04                             |                                   | N                  |
| 20                      |                            | 1.707                                                                                                                                                                  |         | 1.707       |                   | 0.00                             |                                   | N                  |
| 質量減少率 / Mass Loss (%)   |                            | ☐ 電池質量 < 1g: 0.5%以下    ■ 1g ≤ 電池質量 ≤ 75g: 0.2%以下    ☐ 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><br>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

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| 試験名称 / Test Name      |                            | T3:振動試験 Vibration                                                                                                                                                      |         |             |         |                                   |                                   |                    |
|-----------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|---------|-----------------------------------|-----------------------------------|--------------------|
| 番号<br>No.             | サンプル状態<br>Conditions       | 試験前 / Before                                                                                                                                                           |         | 試験後 / After |         | 質量減少率<br>/ Mass Loss<br><0. 2%以下> | OCV維持率<br>/ Residual OCV<br>90%以上 | 現象<br>/ Occurrence |
|                       |                            | mass (g)                                                                                                                                                               | OCV (V) | mass (g)    | OCV (V) |                                   |                                   |                    |
| 1                     | 未放電 /<br>Undischarged      | 1.704                                                                                                                                                                  | 3.269   | 1.703       | 3.264   | 0.08                              | 99.9                              | N                  |
| 2                     |                            | 1.713                                                                                                                                                                  | 3.272   | 1.713       | 3.275   | 0.01                              | 100.1                             | N                  |
| 3                     |                            | 1.721                                                                                                                                                                  | 3.272   | 1.721       | 3.264   | 0.00                              | 99.8                              | N                  |
| 4                     |                            | 1.724                                                                                                                                                                  | 3.273   | 1.724       | 3.276   | 0.01                              | 100.1                             | N                  |
| 5                     |                            | 1.715                                                                                                                                                                  | 3.270   | 1.715       | 3.272   | 0.01                              | 100.1                             | N                  |
| 6                     |                            | 1.716                                                                                                                                                                  | 3.272   | 1.716       | 3.274   | 0.00                              | 100.1                             | N                  |
| 7                     |                            | 1.726                                                                                                                                                                  | 3.274   | 1.726       | 3.277   | 0.02                              | 100.1                             | N                  |
| 8                     |                            | 1.725                                                                                                                                                                  | 3.274   | 1.725       | 3.278   | 0.02                              | 100.1                             | N                  |
| 9                     |                            | 1.719                                                                                                                                                                  | 3.272   | 1.719       | 3.275   | 0.00                              | 100.1                             | N                  |
| 10                    |                            | 1.719                                                                                                                                                                  | 3.275   | 1.719       | 3.279   | -0.01                             | 100.1                             | N                  |
| 11                    | 完全放電 /<br>Fully discharged | 1.713                                                                                                                                                                  |         | 1.712       |         | 0.02                              |                                   | N                  |
| 12                    |                            | 1.709                                                                                                                                                                  |         | 1.709       |         | 0.03                              |                                   | N                  |
| 13                    |                            | 1.705                                                                                                                                                                  |         | 1.705       |         | 0.00                              |                                   | N                  |
| 14                    |                            | 1.724                                                                                                                                                                  |         | 1.723       |         | 0.01                              |                                   | N                  |
| 15                    |                            | 1.721                                                                                                                                                                  |         | 1.720       |         | 0.03                              |                                   | N                  |
| 16                    |                            | 1.715                                                                                                                                                                  |         | 1.715       |         | -0.01                             |                                   | N                  |
| 17                    |                            | 1.701                                                                                                                                                                  |         | 1.701       |         | -0.01                             |                                   | N                  |
| 18                    |                            | 1.728                                                                                                                                                                  |         | 1.728       |         | 0.01                              |                                   | N                  |
| 19                    |                            | 1.728                                                                                                                                                                  |         | 1.728       |         | 0.05                              |                                   | N                  |
| 20                    |                            | 1.707                                                                                                                                                                  |         | 1.707       |         | 0.02                              |                                   | N                  |
| 試験名称 / Test Name      |                            | T4:衝撃試験 Shock                                                                                                                                                          |         |             |         |                                   |                                   |                    |
| 番号<br>No.             | サンプル状態<br>Conditions       | 試験前 / Before                                                                                                                                                           |         | 試験後 / After |         | 質量減少率<br>/ Mass Loss<br><0. 2%以下> | OCV維持率<br>/ Residual OCV<br>90%以上 | 現象<br>/ Occurrence |
|                       |                            | mass (g)                                                                                                                                                               | OCV (V) | mass (g)    | OCV (V) |                                   |                                   |                    |
| 1                     | 未放電 /<br>Undischarged      | 1.703                                                                                                                                                                  | 3.266   | 1.703       | 3.281   | 0.00                              | 100.5                             | N                  |
| 2                     |                            | 1.713                                                                                                                                                                  | 3.275   | 1.713       | 3.284   | 0.00                              | 100.3                             | N                  |
| 3                     |                            | 1.721                                                                                                                                                                  | 3.275   | 1.721       | 3.287   | 0.00                              | 100.4                             | N                  |
| 4                     |                            | 1.724                                                                                                                                                                  | 3.278   | 1.724       | 3.290   | -0.01                             | 100.4                             | N                  |
| 5                     |                            | 1.715                                                                                                                                                                  | 3.273   | 1.715       | 3.286   | -0.02                             | 100.4                             | N                  |
| 6                     |                            | 1.716                                                                                                                                                                  | 3.274   | 1.716       | 3.248   | 0.00                              | 99.2                              | N                  |
| 7                     |                            | 1.726                                                                                                                                                                  | 3.277   | 1.726       | 3.288   | -0.02                             | 100.4                             | N                  |
| 8                     |                            | 1.725                                                                                                                                                                  | 3.278   | 1.725       | 3.292   | -0.01                             | 100.4                             | N                  |
| 9                     |                            | 1.719                                                                                                                                                                  | 3.277   | 1.719       | 3.267   | 0.00                              | 99.7                              | N                  |
| 10                    |                            | 1.719                                                                                                                                                                  | 3.280   | 1.719       | 3.294   | 0.02                              | 100.4                             | N                  |
| 11                    | 完全放電 /<br>Fully discharged | 1.712                                                                                                                                                                  |         | 1.712       |         | -0.01                             |                                   | N                  |
| 12                    |                            | 1.709                                                                                                                                                                  |         | 1.709       |         | 0.00                              |                                   | N                  |
| 13                    |                            | 1.705                                                                                                                                                                  |         | 1.705       |         | 0.00                              |                                   | N                  |
| 14                    |                            | 1.723                                                                                                                                                                  |         | 1.723       |         | -0.01                             |                                   | N                  |
| 15                    |                            | 1.720                                                                                                                                                                  |         | 1.720       |         | 0.00                              |                                   | N                  |
| 16                    |                            | 1.715                                                                                                                                                                  |         | 1.715       |         | 0.00                              |                                   | N                  |
| 17                    |                            | 1.701                                                                                                                                                                  |         | 1.701       |         | 0.00                              |                                   | N                  |
| 18                    |                            | 1.728                                                                                                                                                                  |         | 1.728       |         | -0.01                             |                                   | N                  |
| 19                    |                            | 1.728                                                                                                                                                                  |         | 1.727       |         | 0.01                              |                                   | N                  |
| 20                    |                            | 1.707                                                                                                                                                                  |         | 1.707       |         | -0.02                             |                                   | N                  |
| 質量減少率 / Mass Loss (%) |                            | □ 電池質量 < 1g: 0.5%以下    ■ 1g ≤ 電池質量 ≤ 75g: 0.2%以下    □ 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><br>漏液: L <Leakage>    異常なし: N <No rupture, No fire, No disassembly, No venting, No leakage> |         |             |         |                                   |                                   |                    |

QMJ-19-01-06-F011-2, 改定2019/04/05

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

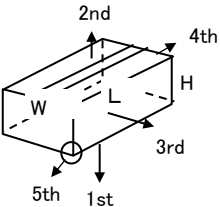
| 試験名称 / Test Name |                            | T5:外部短絡試験 External Short Circuit                                                              |                  |
|------------------|----------------------------|-----------------------------------------------------------------------------------------------|------------------|
| 番号<br>No.        | サンプル状態<br>Conditions       | 最大表面温度<br>/ Max. Surface Temperature 170℃≧                                                    | 現象確認/ Occurrence |
| 1                | 未放電 /<br>Undischarged      | 62℃                                                                                           | N                |
| 2                |                            | 62℃                                                                                           | N                |
| 3                |                            | 61℃                                                                                           | N                |
| 4                |                            | 60℃                                                                                           | N                |
| 5                |                            | 61℃                                                                                           | N                |
| 6                |                            | 62℃                                                                                           | N                |
| 7                |                            | 61℃                                                                                           | N                |
| 8                |                            | 63℃                                                                                           | N                |
| 9                |                            | 62℃                                                                                           | N                |
| 10               |                            | 59℃                                                                                           | N                |
| 11               | 完全放電 /<br>Fully discharged | 58℃                                                                                           | N                |
| 12               |                            | 57℃                                                                                           | N                |
| 13               |                            | 57℃                                                                                           | N                |
| 14               |                            | 57℃                                                                                           | N                |
| 15               |                            | 57℃                                                                                           | N                |
| 16               |                            | 57℃                                                                                           | N                |
| 17               |                            | 57℃                                                                                           | N                |
| 18               |                            | 57℃                                                                                           | N                |
| 19               |                            | 57℃                                                                                           | N                |
| 20               |                            | 57℃                                                                                           | N                |
| 現象 / Occurrence  |                            | 破断:R <Rupture> 発火:F <Fire> 破裂:D <Disassembly><br>異常なし:N <No rupture, No fire, No disassembly> |                  |

| 試験名称 / Test Name |                            | T6: 圧壊試験 Crash                             |                  |
|------------------|----------------------------|--------------------------------------------|------------------|
| 番号<br>No.        | サンプル状態<br>Conditions       | 最大表面温度<br>/ Max. Surface Temperature 170℃≥ | 現象確認/ Occurrence |
| 1                | 未放電 /<br>Undischarged      | 170℃以下                                     | N                |
| 2                |                            | 170℃以下                                     | N                |
| 3                |                            | 170℃以下                                     | N                |
| 4                |                            | 170℃以下                                     | N                |
| 5                |                            | 170℃以下                                     | N                |
| 6                | 完全放電 /<br>Fully discharged | 170℃以下                                     | N                |
| 7                |                            | 170℃以下                                     | N                |
| 8                |                            | 170℃以下                                     | N                |
| 9                |                            | 170℃以下                                     | N                |
| 10               |                            | 170℃以下                                     | N                |

| 試験名称                 | T7: 過充電 Overcharge |
|----------------------|--------------------|
| 対象外 / Not Applicable |                    |

| 試験名称 / Test Name  |                            | T8: 強制放電 Forced Discharge                                                |  |
|-------------------|----------------------------|--------------------------------------------------------------------------|--|
| 番号<br>No.         | サンプル状態<br>Conditions       | 現象確認/ Occurrence                                                         |  |
| 1                 | 完全放電 /<br>Fully discharged | N                                                                        |  |
| 2                 |                            | N                                                                        |  |
| 3                 |                            | N                                                                        |  |
| 4                 |                            | N                                                                        |  |
| 5                 |                            | N                                                                        |  |
| 6                 |                            | N                                                                        |  |
| 7                 |                            | N                                                                        |  |
| 8                 |                            | N                                                                        |  |
| 9                 |                            | N                                                                        |  |
| 10                |                            | N                                                                        |  |
| 【現象 / Occurrence】 |                            | 発火: F <Fire>    破裂: D <Disassembly>    異常なし: N <No fire, No disassembly> |  |

|                                        |                                                                                                          |                      |                       |                            |
|----------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------|-----------------------|----------------------------|
| 試験場所/<br>Test Company                  | 株式会社 東北村田製作所 / Tohoku Murata Manufacturing Co., Ltd.                                                     |                      |                       |                            |
| 住所/<br>Address                         | 〒963-0531 福島県郡山市日和田町高倉下杉下1-1<br>1-1, Shimosugishita, Takakura, Hiwada-machi, Koriyama Fukushima 963-0531 | 電話/<br>Tel           | +81-24-958-3811       |                            |
| 試験室/<br>Test Room                      | オクト産業(株)評価室/<br>Industrial Design OCTO                                                                   | 試験期間/<br>Test Dates  | 2015/12/17～2015/12/25 | 試験番号<br>/Test No           |
| モデル名/<br>Model Name                    | CR2016                                                                                                   |                      | 梱包入り数<br>/Quantity    | 1200 pcs                   |
| セルタイプ/<br>Cell Type                    | CR2016                                                                                                   | 構成/<br>Configuration | 単セル/<br>Single Cell   | 梱包製造地/<br>Package Location |
| 包装等級 /<br>Packing Group                | 等級Ⅱ /Packing Group Number Ⅱ                                                                              |                      |                       |                            |
| 寸法・質量 /<br>Dimensions and Gross Weight | 長辺/Length ( L )                                                                                          | 短辺 /Wide (W)         | 高さ/Height (H)         | 質量 /Gross Weight (kg)      |
|                                        | 342 mm                                                                                                   | 183 mm               | 151 mm                | 3.2 kg                     |

| 落下試験/Drop Test                                                                                                                    |                                                                                       |                                                                                                                                                                                             |                                                                             |                 |
|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------|
| 試験設備/<br>Test equipment                                                                                                           | DT-100B                                                                               |                                                                                                                                                                                             |                                                                             |                 |
| 試験条件/<br>Test condition                                                                                                           | 落下高さ<br>/Drop height                                                                  | 1. 2 m                                                                                                                                                                                      | 試験結果 /Occurrence                                                            |                 |
| 落下姿勢(方向) /<br>Five (one for each drop)<br><br> | 1回目の落下試験<br>The first drop test                                                       | 底面を水平に/<br>flat on the bottom                                                                                                                                                               | 著しい破損なし/No Leakage, No damage liable to affect safety during transportation |                 |
|                                                                                                                                   | 2回目の落下試験<br>The second drop test                                                      | 天面を水平に /<br>Flat on the top                                                                                                                                                                 | 著しい破損なし/No Leakage, No damage liable to affect safety during transportation |                 |
|                                                                                                                                   | 3回目の落下試験<br>The third drop test                                                       | 長側面を水平に/<br>Flat on the long side                                                                                                                                                           | 著しい破損なし/No Leakage, No damage liable to affect safety during transportation |                 |
|                                                                                                                                   | 4回目の落下試験<br>The fourth drop test                                                      | 短側面を水平に/<br>Flat on the short side                                                                                                                                                          | 著しい破損なし/No Leakage, No damage liable to affect safety during transportation |                 |
|                                                                                                                                   | 5回目の落下試験<br>The fifth drop test                                                       | コーナー (角) ※/<br>On a corner                                                                                                                                                                  | 著しい破損なし/No Leakage, No damage liable to affect safety during transportation |                 |
|                                                                                                                                   | ※容器が最も破損を受ける方向を選択/Use the direction of carton which may have the most serious damage. |                                                                                                                                                                                             |                                                                             |                 |
|                                                                                                                                   | 判定基準/<br>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。/On the outmost layer of the exterior container or bag, there shall be no damage which shall badly affect safety during transportation. |                                                                             | 判定/<br>Judgment |

|                                                       |                                                                                                                                                                                                             |                  |                                                            |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------|
| 積み重ね試験/Stacking Test                                  |                                                                                                                                                                                                             |                  |                                                            |
| 試験条件/<br>Test condition                               | No                                                                                                                                                                                                          | 試験結果 /Occurrence |                                                            |
| 3mの想定段数算出/<br>Equivalent package number stacked up 3m | 20段                                                                                                                                                                                                         | 1                | 漏洩・破損・歪みなし/<br>No leakage, No distortion, No deterioration |
| 試験荷重値算出/<br>Examination load calculation value        | 76kg                                                                                                                                                                                                        | 2                | 漏洩・破損・歪みなし/<br>No leakage, No distortion, No deterioration |
| 試験荷重値/Weight Load                                     | 155 kg                                                                                                                                                                                                      | 3                | 漏洩・破損・歪みなし/<br>No leakage, No distortion, No deterioration |
| 判定基準/<br>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。No leakage, no deterioration which may affect badly safety transportation, no distortion which may cause unstable stacking. |                  | 判定/<br>Judgment                                            |
|                                                       |                                                                                                                                                                                                             |                  | 合格/OK                                                      |

|       |
|-------|
| 総合判定  |
| 合格/OK |

|                                        |                                                                                                          |                      |                       |                            |
|----------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------|-----------------------|----------------------------|
| 試験場所/<br>Test Company                  | 株式会社 東北村田製作所 / Tohoku Murata Manufacturing Co., Ltd.                                                     |                      |                       |                            |
| 住所/<br>Address                         | 〒963-0531 福島県郡山市日和田町高倉下杉下1-1<br>1-1, Shimosugishita, Takakura, Hiwada-machi, Koriyama Fukushima 963-0531 | 電話/<br>Tel           | +81-24-958-3811       |                            |
| 試験室/<br>Test Room                      | オクト産業(株)評価室/<br>Industrial Design OCTO                                                                   | 試験期間/<br>Test Dates  | 2015/01/14～2015/01/17 | 試験番号<br>/Test No           |
| モデル名/<br>Model Name                    | CR2016                                                                                                   |                      | 梱包入り数<br>/Quantity    | 4000 pcs                   |
| セルタイプ/<br>Cell Type                    | CR2016                                                                                                   | 構成/<br>Configuration | 単セル/<br>Single Cell   | 梱包製造地/<br>Package Location |
| 包装等級 /<br>Packing Group                | 等級Ⅱ /Packing Group Number Ⅱ                                                                              |                      |                       |                            |
| 寸法・質量 /<br>Dimensions and Gross Weight | 長辺/Length ( L )                                                                                          | 短辺 /Wide (W)         | 高さ/Height (H)         | 質量 /Gross Weight (kg)      |
|                                        | 356 mm                                                                                                   | 353 mm               | 168 mm                | 10.00 kg                   |

| 落下試験/Drop Test                                                 |                                                                                       |                                                                                                                                                                                             |                                                                             |                 |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------|
| 試験設備/<br>Test equipment                                        | DT-100B                                                                               |                                                                                                                                                                                             |                                                                             |                 |
| 試験条件/<br>Test condition                                        | 落下高さ<br>/Drop height                                                                  | 1. 2 m                                                                                                                                                                                      | 試験結果 /Occurrence                                                            |                 |
| <div>落下姿勢(方向) /<br/>Five (one for each drop)</div> <div></div> | 1回目の落下試験<br>The first drop test                                                       | 底面を水平に/<br>flat on the bottom                                                                                                                                                               | 著しい破損なし/No Leakage, No damage liable to affect safety during transportation |                 |
|                                                                | 2回目の落下試験<br>The second drop test                                                      | 天面を水平に /<br>flat on the top                                                                                                                                                                 | 著しい破損なし/No Leakage, No damage liable to affect safety during transportation |                 |
|                                                                | 3回目の落下試験<br>The third drop test                                                       | 長側面を水平に/<br>flat on the long side                                                                                                                                                           | 著しい破損なし/No Leakage, No damage liable to affect safety during transportation |                 |
|                                                                | 4回目の落下試験<br>The fourth drop test                                                      | 短側面を水平に/<br>flat on the short side                                                                                                                                                          | 著しい破損なし/No Leakage, No damage liable to affect safety during transportation |                 |
|                                                                | 5回目の落下試験<br>The fifth drop test                                                       | コーナー（角）※/<br>on a corner                                                                                                                                                                    | 著しい破損なし/No Leakage, No damage liable to affect safety during transportation |                 |
|                                                                | ※容器が最も破損を受ける方向を選択/Use the direction of carton which may have the most serious damage. |                                                                                                                                                                                             |                                                                             |                 |
|                                                                | 判定基準/<br>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。/On the outmost layer of the exterior container or bag, there shall be no damage which shall badly affect safety during transportation. |                                                                             | 判定/<br>Judgment |

| 積み重ね試験/Stacking Test                                  |                                                                                                                                                                                                             |                  |                                                            |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------|
| 試験条件/Test condition                                   | No                                                                                                                                                                                                          | 試験結果 /Occurrence |                                                            |
| 3mの想定段数算出/<br>Equivalent package number stacked up 3m | #REF! 段                                                                                                                                                                                                     | 1                | 漏洩・破損・歪みなし/<br>No leakage, No distortion, No deterioration |
| 試験荷重値算出/<br>Examination load calculation value        | #REF! kg                                                                                                                                                                                                    | 2                | 漏洩・破損・歪みなし/<br>No leakage, No distortion, No deterioration |
| 試験荷重値/Weight Load                                     | 240 kg                                                                                                                                                                                                      | 3                | 漏洩・破損・歪みなし/<br>No leakage, No distortion, No deterioration |
| 判定基準/<br>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。No leakage, no deterioration which may affect badly safety transportation, no distortion which may cause unstable stacking. |                  | 判定/<br>Judgment                                            |
|                                                       |                                                                                                                                                                                                             |                  | 合格/OK                                                      |

|       |
|-------|
| 総合判定  |
| 合格/OK |