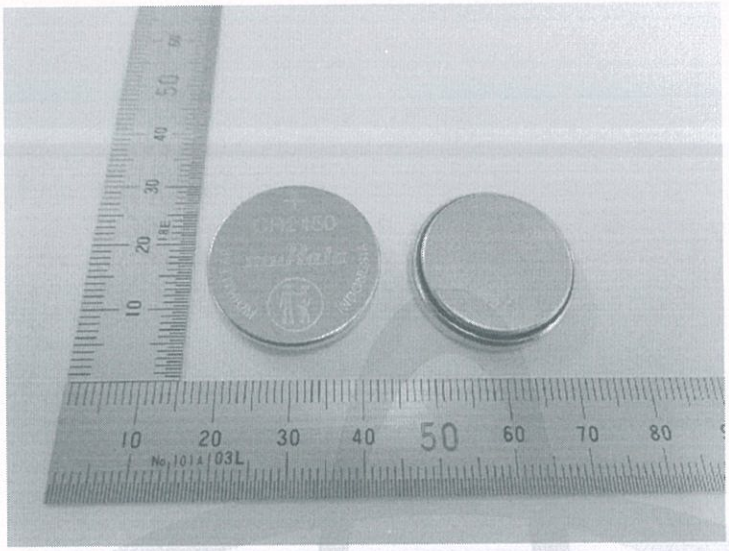
UN38.3 试验概要
UN38.3 Test Summary

812200100471428

单位信息 Company information			
委托单位 Consignor	株式会社東北村田製作所 Tohoku Murata Manufacturing Co., Ltd. 福島県郡山市日和田町高倉下杉下1番地の1 1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima, Japan 13774364766 villa.hu@murata.com https://www.murata.com/en-global/group/tohokumurata		
生产单位 Manufacturer	株式会社東北村田製作所 Tohoku Murata Manufacturing Co., Ltd. 福島県郡山市日和田町高倉下杉下1番地の1 1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima, Japan 13774364766 villa.hu@murata.com https://www.murata.com/en-global/group/tohokumurata		
测试单位 Test lab	株式会社東北村田製作所 Tohoku Murata Manufacturing Co., Ltd. 福島県郡山市日和田町高倉下杉下1番地の1 1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima, Japan 81249557770 weiwei.tang@murata.com https://www.murata.com/en-global/group/tohokumurata		
电池信息 Battery information			
名称 Name	钮扣型二氧化锰锂电池	品牌 Brand	Murata
型号 Type	CR2450	原始测试型号 Original tested type	/
标称电压(V) Nominal voltage	3	容量/能量 Capacity/energy	610mAh
描述 Description	不可充电锂金属电池芯 Primary Li-metal cell	锂含量(g) Li content	0.171
质量(kg) Mass	0.00642	外观 Appearance	银色钮扣状金属外壳 Silvery button metal shell
测试信息 Test information			
原报告编号 Original test report No.	UN38.3-CR2450	测试报告日期 Date of test report	2022-01-24
测试标准 Test standard	联合国《关于危险货物运输的建议书试验和标准手册》第38.3章 UNITEDNATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria 38.3		ST/SG/AC.10/11/Rev.6/Amend.1
T.1 高度模拟 Altitude simulation	合格 Passed	T.2 温度测试 Thermal test	合格 Passed
T.3 振动测试 Vibration	合格 Passed	T.4 冲击测试 Shock	合格 Passed
T.5 外部短路 External short circuit	合格 Passed	T.6 挤压 Crush	合格 Passed
T.7 过度充电 Overcharge	/	T.8 强制放电 Forced discharge	合格 Passed
38.3.3 (f)	/	38.3.3 (g)	/

UN38.3 试验概要
UN38.3 Test Summary

812200100471428

样品图片 Sample Picture
   

结论 Conclusion	测试样品符合联合国《关于危险货物运输的建议书试验和标准手册》ST/SG/AC.10/11/Rev.6/Amend.138.3 标准要求。 The tested samples meet the requirements of test items of the UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1 38.3		
备注 Remark	/		
签名 Signature 职务 Title	王寅 副总工程师 Vice chief engineer	签发日期 Issued date	2022-12-02

-验证码:021913-

报告结束

Tohoku Murata Manufacturing Co., Ltd.
1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima 963-0531 JAPAN
Phone : +81-24-955-7770 / Fax : +81-24-955-7884 / E-mail : tmm-qa-compliance@murata.com

Document No. SDS-CR-001-E

Safety Data Sheet

Note : SDS is not applicable to the products hermetically sealed. Under normal conditions of use, the battery is contained in a hermetic ally-sealed case, therefore the information herein contained is provided for your information only.
The information and recommendations set forth herein are made in good faith and are believed to be accurate as of the date of preparation. However, Tohoku Murata Manufacturing Co., Ltd. MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM RELIANCE ON.

1. Product and company Identification

Product Name	Coin manganese dioxide lithium batteries
Model Name	CR1216%, CR1220%, CR1616%, CR1620%, CR1632%, CR2016%, CR2025%, CR2032%, CR2430%, CR2450%, CR2477% CR2032W%, CR2050S%, CR2050W%, CR2450S%, CR2450W%, CR2477W% CR2032X%, CR2450X%, CR2477X%, CR3677X% CR2032R%, CR2450R%
Brand	murata
Company Name	Tohoku Murata Manufacturing Co., Ltd.
Company Address	1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima 963-0531 JAPAN
Information Telephone	Japan +81-24-955-7770 FAX +81-24-955-7884
Emergency Telephone	+1(703)527-3887 (CHEMTREC)
E-mail address	tmm-qa-compliance@murata.com
Date Revised	January 1, 2024
Issued Department	Business unit quality assurance department 3 Tohoku Murata Manufacturing Co., Ltd.
Issuing person	Shun Sato

The model name attached % means that valid for all models which the singular/plural digits of alphanumeric or marks (including a space) attached after the model name.

2. Hazard identification

The important hazards and adverse effects of the chemical product	No information available	
Chemical product- specific hazards	No information available	
Outline of an anticipated emergency	Hazard	Coin manganese dioxide lithium batteries contain flammable materials such as organic solvent and metallic lithium. If battery was disposed in fire, or battery temperature exceeded 100℃, explosion or ignition of the battery may be caused. When short-circuit is caused by jumbling the batteries, explosion or ignition may be caused due to heat generation.
	Toxicity	When battery is burned, generated vapor may cause eyes, skin and respiratory irritation.

3. Composition/information on ingredients

Portion	Ingredient	CAS No.	Content ratio wt%
Cathode	Manganese Dioxide	1313-13-9	20~40 wt%
Anode	Metallic Lithium	7439-93-2	1~3 wt% (Li < 0.3g *)
Electrolyte	Dimethoxyethane	110-71-4	1~7 wt%
	Propylene Carbonate	108-32-7	2~9wt%
	Lithium Perchlorate	7791-03-9	0.3~0.9wt%
	Acid Phthalic Anhydride	85-44-9	0~0.1wt%
Others	Stainless Steel	65997-19-5	40~65wt%
	Polypropylene	9003-07-0	2~5wt%

* CR3677X%: Metallic Lithium weight exceeds 0.3g to 1g or less.

4. First aid measures

Swallowing	Ingestion of a battery can be harmful. Contents of an opened battery can cause serious chemical burns of mouth, esophagus and gastrointestinal tract. In either case, do not induce vomiting nor give food or drink. Seek medical attention immediately.
Skin Contact	Contents of an opened battery can cause skin irritation. Wash skin with soap and water. If inflammation was caused on the skin, seek the medical attention.
Eye Contact	Contents of an opened battery can cause eye irritation. Immediately flush eyes thoroughly with water for several minutes. Seek medical attention.
Inhalation	Contents of an opened battery can cause respiratory irritation. Provide fresh air and call a doctor.

5. Fire fighting measures

Extinguishing Media	Powder, Carbon dioxide and Dry sand. Metallic Lithium contained in a battery reacts with water strongly, as a result, generates hydrogen gas. Extinguishing by water may cause explosion.

6. Accidental release measures (In the case that electrolyte is leaked from battery.)

Personal precautions	Temporary inhalation of odor and attaching of electrolyte to skin does not cause serious health hazard. Be sure the ventilation and washing out of electrolyte quickly.
Environmental precautions	Wipe off with dry cloth and keep away from fire.

7. Precautions for safe handling and use

Handling	Since improper battery handling may cause leakage, overheating or explosion of the battery, the following precautions shall be observed. (1) Keep batteries away from children. Swallowing a battery can cause chemical burn or penetration of the mucous membrane tissue, in the worst case, may result in death. If infant happens to swallow a battery, seek medical attention immediately to take it out. (2) Do not short. (3) Insert batteries with positive (+) and negative (-) terminals correctly oriented. (4) Do not mix different type batteries or mix new and old ones together. (5) Do not directly heat, solder or throw into fire. (6) Do not modify, deform or disassemble the battery. (7) Do not have children replace batteries unsupervised by adults. (8) In case of swallowed battery, seek medical attention immediately. (9) This battery is not designed for recharging. To do so can cause leakage or explosion.
Storage	Store in a cool, well-ventilated area. Do not store batteries at high-temperatures or high-humidity. Proper storage temperature is +5℃~+35℃. It is preferable not to exceed +35℃. Avoid extremely higher or lower humidity (85% or more, 45% or less). Avoid exposure to sunlight to prevent performance deterioration, swelling or leakage. Elevated temperature can result in shortened battery life. Since short circuit can cause burn hazard and leak or explode hazard, do not batteries jumbled in containers. Avoid to contact water, metallic chain or metallic chip which may result in short-circuit.

8. Exposure controls/personal protection

N/A

9. Physical and chemical properties

Condition	Solid
Appearance	Coin Shape
Nominal voltage	3 V

10. Stability and reactivity

Stability : Stable under normal conditions of use.
Condition to avoid : See Section 7.

11. Toxicological information

Under normal conditions of use, there is no risk to life and health, because ingredients of battery is hermetical sealed with metal case.

12. Ecological information

When exhausted battery is buried in the ground, it is confirmed that outflow of metal contained in the battery has been seldom found. But we have no ecological information.

13. Disposal considerations

When battery is disposed, isolate positive (+) and negative (-) terminals of the battery to avoid those terminals from touching each other.
Batteries may be short-circuited when piled up or mixed with the other batteries in disorder.
Dispose in accordance with applicable federal, state and local regulations.

14. Transport information

UN Dangerous Goods List

UN No.	Name and Description	Class or division	Special provision	Packing instruction
3090	LITHIUM METAL BATTERIES	9	188 230 310 376 377 384 387	P903 P908 P909 P910 P911

【Sea transportation】

All lithium metal cells shipping from Tohoku Murata Manufacturing Co., Ltd. and their packing condition conform to the following regulations and meet the requirements, therefore they can be shipped as exemption from Class 9 Dangerous goods.

Outline of IMO-IMDG Code 2022 SP188

- For a lithium metal cell, aggregate lithium content is not more than 1g.
- Each cell is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria 7th revised edition, Part Ⅲ, subsection 38.3.
- Cells shall be packed in inner packagings that completely enclose the cell.
- Each package shall be capable of withstanding a 1.2m drop test in any orientation without damage to cells contained therein, without shifting of the contents so as to allow battery to battery contact and without release of contents.
- Package shall not exceed 30kg gross mass.
- The specified information shall be indicated on each package.
- Each cell shall be manufactured under quality program specified by the United Nations.

【Air transportation】

For air transportation, it is necessary to comply with IATA DGR 65th Edition (Dangerous Goods Regulations, 65th Edition)

Dangerous Goods List on IATA DGR

UN No.	Proper Shipping Name/Description	Class or division	Packing Instruction	Passenger Aircraft	Cargo Aircraft	S.P.
3090	LITHIUM METAL BATTERIES	9	PI968 (Section IA)	Forbidden	Max Net Qty /Package 35kg	A88 A99 A154 A164 A183 A201 A206 A213 A334 A802
			PI968 (Section IB)	Forbidden	Max Net Qty /Package 2.5 kg	

※As all of murata Coin manganese dioxide lithium batteries contain lithium metals less than 1.0g, Packing Instruction 969/970 can be applicable to the products that murata Coin manganese dioxide lithium batteries are assembled into.
The equipment is excluded from dangerous goods regulation.

When our cell or battery is contained in equipment or packed with equipment, it is classified into UN3091.

*Related regulation, Issued documents

- International Air Transport Association (IATA):Dangerous Goods Regulations, 65th Edition
- International Civil Aviation Organization (ICAO): Technical Instructions for the Safe Transport of Dangerous Goods by Air, 2023-2024 Edition
- International Maritime Organization (IMO): International Maritime Dangerous Goods (IMDG) Code, 2022 Edition
- U.S. Department of Transportation (DOT) 49 CFR
- UN(SP188) :UN(United Nations):Recommendations on the Transport of Dangerous Goods: Model Regulations 22nd revised edition

15. Regulatory information

- EU Directive 2006/66/EC and 2013/56/EU
- CA Lithium Perchlorate Regulation

16. Other information

If you need further information, please contact your local sales representative.

For product quotations and sales inquiries, please contact the dedicated form on the Murata Manufacturing website.
Contact to : <https://www.murata.com/en-global/contactform>

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:
Item Number : CR2450
Item Name : CR2450
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:

Tohoku Murata Manufacturing Co., Ltd.
1-1 Shimosugishita, Takakura, Hiwada-machi,
Koriyama-shi, Fukushima, 963-0531 Japan
Phone: +81-24-955-7834
e-mail: tmm-unr-smry@murata.com
Website: https://www.murata.com/en-global/group/tohokumurata

Name of the test laboratory to include address, phone number, email address and website for more information:

Tohoku Murata Manufacturing Co., Ltd.
1-1 Shimosugishita, Takakura, Hiwada-machi,
Koriyama-shi, Fukushima, 963-0531 Japan
Phone: +81-24-955-7834
e-mail: tmm-unr-smry@murata.com
Website: https://www.murata.com/en-global/group/tohokumurata

A unique test report identification number:
UN38.3-CR2450

Date of the test report:
24-Jan-22

List of tests conducted and results (i.e., pass/fail):

Test T.1: Altitude Simulation	: Pass
Test T.2: Thermal Test	: Pass
Test T.3: Vibration	: Pass
Test T.4: Shock	: Pass
Test T.5: External short circuit	: Pass
Test T.6: Impact	: Pass
Test T.7: Overcharge	: Not applicable
Test T.8: Forced discharge	: Pass

Testing additional comments:

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

Cell/battery Type	Lithium Metal
Cell or Battery	: Cell
LC or W/h rating	: 0.171g
Cell or Battery Weight	: 6.50 g

Physical description
:Lithium Metal Battery Cell(Coin shaped)

Reference to assembled battery testing requirements, if applicable (i.e., 38.3.3;(f) and 38.3.3;(g):

Not Applicable

Reference to the revised edition of the Manual of Test and Criteria used and to amendments thereto, if any:

Revision 6 Amendment 1

PRODUCT CLASSIFICATION FOR TRANSPORT (According to UN - DGP)

UN Classification:
UN3090

Proper Shipping Name:
Lithium Metal Battery Cell

Signature with name and title of signatory as an indication of the validity of information provided:

Hideaki Takahashi
Quality Assurance Department

Date document was generated:
24-Jan-22

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.
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.

Tohoku Murata Manufacturing Co., Ltd.
1-1 Shimosugishita, Takakura, Hiwada-machi,
Koriyama-shi, Fukushima 963-0531 JAPAN
Phone: +81 24 955 7834 / Fax: +81 24 958 5827

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

No: UN38.3-CR2450
Date: Jan 24,2022

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．機種名／Model Name：CR2450 Cell Type： CR2450 (muRata) (Made in Indonesia)

Murata Model Name：CR2450

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/ 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~T5, T6,T8)：2020/09/28 - 2020/10/21
梱包試験実施日／Tested Date for Package： 2014/03/19～2014/03/26

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	610mAh	
総リチウム含有量／Aggregated lithium content	0.171g	

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

機種名 / Murata Model Name	CR2450 (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 - 2020/10/21
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 No.	サンプル状態 Conditions	試験前 / Before		試験後 / After		質量減少率 / Mass Loss <0.2%以下>	OCV維持率 / Residual OCV 90%以上	現象 / Occurrence
		mass (g)	OCV (V)	mass (g)	OCV (V)			
1	未放電 / Undischarged	6.404	3.225	6.404	3.226	0.00	100.0	N
2		6.401	3.225	6.401	3.226	0.00	100.0	N
3		6.385	3.222	6.385	3.222	0.00	100.0	N
4		6.417	3.218	6.417	3.219	0.00	100.0	N
5		6.408	3.226	6.407	3.226	0.00	100.0	N
6		6.395	3.226	6.395	3.227	0.01	100.0	N
7		6.405	3.219	6.405	3.220	0.00	100.0	N
8		6.416	3.219	6.416	3.220	0.00	100.0	N
9		6.400	3.221	6.399	3.221	0.00	100.0	N
10		6.390	3.224	6.390	3.225	0.00	100.0	N
11	完全放電 / Fully discharged	6.373		6.373		0.00		N
12		6.386		6.386		0.00		N
13		6.401		6.401		0.00		N
14		6.412		6.412		0.00		N
15		6.391		6.391		0.00		N
16		6.397		6.396		0.00		N
17		6.382		6.382		0.00		N
18		6.417		6.417		0.00		N
19		6.377		6.377		0.00		N
20		6.407		6.407		0.00		N

試験名称 / Test Name	T2:温度試験 Thermal						
番号 No.	サンプル状態 Conditions	試験前 / Before		試験後 / After		質量減少率 / Mass Loss <0.2%以下>	OCV維持率 / Residual OCV 90%以上	現象 / Occurrence
		mass (g)	OCV (V)	mass (g)	OCV (V)			
1	未放電 / Undischarged	6.404	3.226	6.403	3.251	0.01	100.8	N
2		6.401	3.226	6.399	3.251	0.04	100.8	N
3		6.385	3.222	6.384	3.249	0.02	100.8	N
4		6.417	3.219	6.416	3.247	0.01	100.9	N
5		6.407	3.226	6.406	3.250	0.03	100.7	N
6		6.395	3.227	6.393	3.252	0.03	100.8	N
7		6.405	3.220	6.404	3.248	0.02	100.9	N
8		6.416	3.220	6.415	3.248	0.02	100.9	N
9		6.399	3.221	6.397	3.248	0.03	100.8	N
10		6.390	3.225	6.388	3.251	0.03	100.8	N
11	完全放電 / Fully discharged	6.373		6.373		0.00		N
12		6.386		6.386		0.00		N
13		6.401		6.401		0.00		N
14		6.412		6.412		0.00		N
15		6.391		6.391		0.00		N
16		6.396		6.396		0.00		N
17		6.382		6.382		0.00		N
18		6.417		6.417		0.00		N
19		6.377		6.377		0.00		N
20		6.407		6.407		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> 漏液: L <Leakage> 異常なし: N <No rupture, No fire, No disassembly, No venting, No leakage>

国連勧告試験 結果 2

Test Result of UN Recommendations Part 2

試験名称 / Test Name		T3:振動試験 Vibration						
番号 No.	サンプル状態 Conditions	試験前 / Before		試験後 / After		質量減少率 / Mass Loss <0.2%以下>	OCV維持率 / Residual OCV 90%以上	現象 / Occurrence
		mass (g)	OCV (V)	mass (g)	OCV (V)			
1	未放電 / Undischarged	6.403	3.251	6.403	3.252	0.00	100.0	N
2		6.399	3.251	6.398	3.252	0.00	100.0	N
3		6.384	3.249	6.384	3.250	0.00	100.0	N
4		6.416	3.247	6.416	3.248	0.00	100.0	N
5		6.406	3.250	6.406	3.252	0.00	100.1	N
6		6.393	3.252	6.392	3.253	0.00	100.0	N
7		6.404	3.248	6.404	3.248	0.00	100.0	N
8		6.415	3.248	6.414	3.243	0.01	99.8	N
9		6.397	3.248	6.397	3.249	0.01	100.0	N
10		6.388	3.251	6.388	3.253	0.00	100.0	N
11	完全放電 / Fully discharged	6.373		6.373		0.00		N
12		6.386		6.386		0.00		N
13		6.401		6.401		0.00		N
14		6.412		6.412		0.00		N
15		6.391		6.391		0.00		N
16		6.396		6.396		0.00		N
17		6.382		6.382		0.00		N
18		6.417		6.417		0.00		N
19		6.377		6.377		0.00		N
20		6.407		6.407		0.00		N
試験名称 / Test Name		T4:衝撃試験 Shock						
番号 No.	サンプル状態 Conditions	試験前 / Before		試験後 / After		質量減少率 / Mass Loss <0.2%以下>	OCV維持率 / Residual OCV 90%以上	現象 / Occurrence
		mass (g)	OCV (V)	mass (g)	OCV (V)			
1	未放電 / Undischarged	6.403	3.252	6.403	3.252	0.00	100.0	N
2		6.398	3.252	6.398	3.235	0.00	99.5	N
3		6.384	3.250	6.384	3.250	0.00	100.0	N
4		6.416	3.248	6.416	3.248	0.00	100.0	N
5		6.406	3.252	6.406	3.246	0.00	99.8	N
6		6.392	3.253	6.392	3.254	0.00	100.0	N
7		6.404	3.248	6.403	3.232	0.00	99.5	N
8		6.414	3.243	6.414	3.244	0.00	100.0	N
9		6.397	3.249	6.396	3.249	0.01	100.0	N
10		6.388	3.253	6.388	3.252	0.00	100.0	N
11	完全放電 / Fully discharged	6.373		6.373		0.00		N
12		6.386		6.386		0.00		N
13		6.401		6.401		0.00		N
14		6.412		6.412		0.00		N
15		6.391		6.391		0.00		N
16		6.396		6.396		0.01		N
17		6.382		6.382		0.00		N
18		6.417		6.417		0.00		N
19		6.377		6.376		0.00		N
20		6.407		6.406		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> 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 3

Test Result of UN Recommendations Part 3

試験名称 / Test Name		T5:外部短絡試験 External Short Circuit	
番号 No.	サンプル状態 Conditions	最大表面温度 / Max. Surface Temperature 170℃≧	現象確認/ Occurrence
1	未放電 / Undischarged	62℃	N
2		61℃	N
3		61℃	N
4		61℃	N
5		61℃	N
6		64℃	N
7		63℃	N
8		62℃	N
9		63℃	N
10		60℃	N
11	完全放電 / Fully discharged	58℃	N
12		58℃	N
13		58℃	N
14		58℃	N
15		58℃	N
16		57℃	N
17		57℃	N
18		58℃	N
19		57℃	N
20		57℃	N
現象 / Occurrence		破断:R 〈Rupture〉 発火:F 〈Fire〉 破裂:D 〈Disassembly〉 異常なし:N 〈No rupture, No fire, No disassembly〉	

試験名称 / Test Name		T6: 圧壊試験 Crash	
番号 No.	サンプル状態 Conditions	最大表面温度 / Max. Surface Temperature 170℃≧	現象確認/ Occurrence
1	未放電 / 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 / 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 No.	サンプル状態 Conditions	現象確認/ Occurrence	
1	完全放電 / 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〉	

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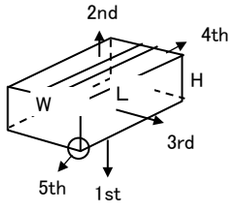
国連勧告試験　梱包結果

Test Result of UN Recommendations for Package

試験場所/ Test Company	株式会社 東北村田製作所/Tohoku Murata Manufacturing Co., Ltd.				
住所/ Address	〒963-0531 福島県郡山市日和田町高倉下杉下1-1 1-1, Shimosugishita, Takakura, Hiwada-machi, Koriyama Fukushima 963-0531 Japan			電話/ Tel	+81-24-958-3811
試験室/ Test Room	オクト産業㈱評価室/ Industrial Design OCTO	試験期間/ Test Dates	2015/12/17～2015/12/25	試験番号 /Test No	AB－1512－001
機種名/ Model Name	CR2450		梱包入り数 /Quantity		300 pcs
使用セル/ Cell Type	CR2450	構成/ Configuration	単セル/ Single Cell	梱包製造地/ Package Location	Indonesia
包装等級 / Packing Group	等級Ⅱ/Packing Group Number II				
寸法・質量 / Dimensions and Gross Weight	長辺/Length（L）	短辺 /Wide （W）	高さ/Height (H)	質量 /Gross Weight (kg)	
	342 mm	183 mm	151 mm	2.6 kg	

落下試験/Drop Test

試験設備/ Test equipment	DT-100B		
試験条件/ Test condition	落下高さ /Drop height	１．２m	試験結果 /Occurrence
落下姿勢(方向）/ Five (one for each drop)	1回目の落下試験 The first drop test	底面を水平に/ Flat on the bottom	著しい破損なし/No Leakage, No damage liable to affect safety during transportation
	2回目の落下試験 The second drop test	天面を水平に / Flat on the top	著しい破損なし/No Leakage, No damage liable to affect safety during transportation
	3回目の落下試験 The third drop test	長側面を水平に/ Flat on the long side	著しい破損なし/No Leakage, No damage liable to affect safety during transportation
	4回目の落下試験 The fourth drop test	短側面を水平に/ Flat on the short side	著しい破損なし/No Leakage, No damage liable to affect safety during transportation
	5回目の落下試験 The fifth drop test	コーナー（角）※/ 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/ 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/ Judgment	**合格/OK**



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/ Equivalent package number stacked up 3m	20段	1	漏洩・破損・歪みなし/ No leakage, No distortion, No deterioration
試験荷重値算出/ Examination load calculation value	57kg	2	漏洩・破損・歪みなし/ No leakage, No distortion, No deterioration
試験荷重値/Weight Load	155 kg	3	漏洩・破損・歪みなし/ No leakage, No distortion, No deterioration
判定基準/ Criterion	試供品は漏洩があってはならない。試供品は、輸送の安全性を損なうような劣化、又はその強度を減じたり、又は輸送物の積重ねを不安定にするような歪みが生じてはならない。No leakage, no deterioration which may affect badly safety transportation, no distortion which may cause unstable stacking.	判定/ Judgment	**合格/OK**

総合判定
合格/OK

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国連勧告試験　梱包結果

Test Result of UN Recommendations for Package

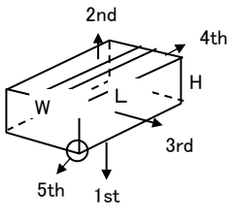
No. : UN38.3-CR2450
DATE : Jan 24,2022

試験場所/ Test Company	株式会社 東北村田製作所/Tohoku Murata Manufacturing Co., Ltd.				
住所/ Address	〒963-0531 福島県郡山市日和田町高倉下杉下1-1 1-1, Shimosugishita, Takakura, Hiwada-machi, Koriyama Fukushima 963-0531 Japan			電話/ Tel	+81-24-958-3811
試験室/ Test Room	オクト産業㈱評価室/ Industrial Design OCTO	試験期間/ Test Dates	2015/12/17～2015/12/25	試験番号 /Test No	AB－1512－001
機種名/ Model Name	CR2450		梱包入り数 /Quantity		900 pcs
使用セル/ Cell Type	CR2450	構成/ Configuration	単セル/ Single Cell	梱包製造地/ Package Location	Indonesia
包装等級 / Packing Group	等級Ⅱ/Packing Group Number II				

寸法・質量 / Dimensions and Gross Weight	長辺/Length（L）	短辺 /Wide （W）	高さ/Height (H)	質量 /Gross Weight (kg)
	342 mm	183 mm	151 mm	6.9 kg

落下試験/Drop Test

試験設備/ Test equipment	DT-100B		
試験条件/ Test condition	落下高さ /Drop height	１．２m	試験結果 /Occurrence
落下姿勢(方向）/ Five (one for each drop)	1回目の落下試験 The first drop test	底面を水平に/ Flat on the bottom	著しい破損なし/No Leakage, No damage liable to affect safety during transportation
	2回目の落下試験 The second drop test	天面を水平に / Flat on the top	著しい破損なし/No Leakage, No damage liable to affect safety during transportation
	3回目の落下試験 The third drop test	長側面を水平に/ Flat on the long side	著しい破損なし/No Leakage, No damage liable to affect safety during transportation
	4回目の落下試験 The fourth drop test	短側面を水平に/ Flat on the short side	著しい破損なし/No Leakage, No damage liable to affect safety during transportation
	5回目の落下試験 The fifth drop test	コーナー（角）※/ 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/ 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/ Judgment	**合格/OK**

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/ Equivalent package number stacked up 3m	20段	1	漏洩・破損・歪みなし/ No leakage, No distortion, No deterioration
試験荷重値算出/ Examination load calculation value	133kg	2	漏洩・破損・歪みなし/ No leakage, No distortion, No deterioration
試験荷重値/Weight Load	155 kg	3	漏洩・破損・歪みなし/ No leakage, No distortion, No deterioration

判定基準/ Criterion	試供品は漏洩があってはならない。試供品は、輸送の安全性を損なうような劣化、又はその強度を減じたり、又は輸送物の積重ねを不安定にするような歪みが生じてはならない。No leakage, no deterioration which may affect badly safety transportation, no distortion which may cause unstable stacking.	判定/ Judgment	**合格/OK**

総合判定
合格/OK