

# 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
E-mail address	tmm-qa-compliance@murata.com
Date Revised	January 1, 2023
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°C, 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	Heavy metal such as Mercury, Cadmium and Lead are not added in the battery.		

\* 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	<p>Since improper battery handling may cause leakage, overheating or explosion of the battery, the following precautions shall be observed.</p> <ol style="list-style-type: none"> <li>(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.</li> <li>(2) Do not short.</li> <li>(3) Insert batteries with positive (+) and negative (-) terminals correctly oriented.</li> <li>(4) Do not mix different type batteries or mix new and old ones together.</li> <li>(5) Do not directly heat, solder or throw into fire.</li> <li>(6) Do not modify, deform or disassemble the battery.</li> <li>(7) Do not have children replace batteries unsupervised by adults.</li> <li>(8) In case of swallowed battery, seek medical attention immediately.</li> <li>(9) This battery is not designed for recharging. To do so can cause leakage or explosion.</li> </ol>
Storage	<p>Store in a cool, well-ventilated area. Do not store batteries at high-temperatures or high-humidity. Proper storage temperature is +5°C~+35°C. It is preferable not to exceed +35°C. 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.</p>

## 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 7<sup>th</sup> 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 64<sup>th</sup> Edition (Dangerous Goods Regulations, 64<sup>th</sup> 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
			PI968 (Section IB)	Forbidden	Max Net Qty /Package 2.5 kg	A201 A206 A213 A334 A802

※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, 64<sup>th</sup> 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(SPI88) : UN(United Nations): Recommendations on the Transport of Dangerous Goods: Model Regulations 22<sup>nd</sup> 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>>



# 货物运输条件鉴定书

Certification  
for Safe Transport of Chemical Goods

## 锂电池类货物

样品名称： 钮扣型二氧化锰锂电池 CR2450 3V 610mAh

Sample name: /

委托单位： 株式会社東北村田製作所  
Tohoku Murata Manufacturing Co., Ltd.

生产单位： 株式会社東北村田製作所  
Tohoku Murata Manufacturing Co., Ltd.



上海化工院检测有限公司  
SHANGHAI INSTITUTE OF CHEMICAL INDUSTRY TESTING CO.,LTD.



## 声 明 Statement

1. 鉴定书无上海化工院检测有限公司检验检测专用章、二维码无效。  
The certification is invalid if it is not affixed the dedicated inspection and testing seal of Shanghai Institute of Chemical Industry Testing Co., Ltd. and QR Code on it.
2. 鉴定书复印件无效。  
Copies of the certification are invalid.
3. 鉴定书无主检、审核、批准签字无效。  
The certification is invalid without the signatures of appraiser, checker and approver.
4. 鉴定书涂改无效。  
The certification is invalid if it is forged or altered.
5. 本鉴定书不涉及样品的成分鉴别，委托单位必须保证提供给本公司的样品与实际的出运货物相一致且相关成分等资料真实完整，由于样品与委托信息的真实性所带来的法律责任和其他后果均由委托单位自行承担。  
The certification does not involve ingredient analysis of the sample. It is the client's responsibility to guarantee that samples provided for appraisal are consistent with the goods to be transported and that relevant information and documents (eg: information on ingredients) submitted are authentic and complete. Otherwise, the client shall bear any legal liability and other possible consequence arising from the authenticity of samples and information provided.
6. 本鉴定书的鉴定结论仅适用于最终收到的样品。  
The conclusion of this certification only applies to the final sample as received.
7. 本鉴定书当年有效，铁路运输方式除外。特殊情况参见鉴定书备注。  
The certification is valid in the year subscribed on it except when transported by rail. Please refer to the comment of certification on special occasion.
8. 本鉴定书不考虑国家及经营人差异。  
The certification takes no account of the State and Operator Variations.
9. 货物的运输方式应与鉴定结论中的运输方式相一致。不同的运输方式，鉴定结果可能会有差异。  
The transportation mode of the goods shall be consistent with that in the appraisal conclusion. Different transportation modes may lead to different appraisal results.
10. 鉴定书真伪性可登入本公司网站 [www.ghs.cn](http://www.ghs.cn) 或扫描鉴定书中二维码进行查询。  
The authenticity of the certification can be verified by our website([www.ghs.cn](http://www.ghs.cn)) or the QR code in the certification.
11. 送检申请可登入本公司网站 [www.ghs.cn](http://www.ghs.cn) 进行网上委托。  
The application of the certification can be done via our website: [www.ghs.cn](http://www.ghs.cn).

地址：上海市光复西路2779号接待大厅

Address: Reception Hall, Shanghai Institute of Chemical Industry Co., Ltd, No.2779  
West Guangfu Road, Shanghai, China.

邮编(Post code): 200062

电话(Tel): (008621)31765555

邮箱(Email): [center@ghs.cn](mailto:center@ghs.cn)

网址(Website): [www.ghs.cn](http://www.ghs.cn)



# 货物运输条件鉴定书

Certification for Safe Transport of Chemical Goods

NO. 212300860793548

Page 1/3

样品名称 Sample Name		中文 Chinese	钮扣型二氧化锰锂电池 CR2450 3V 610mAh		
		英文 English	/		
委托单位 Consignor		株式会社東北村田製作所 Tohoku Murata Manufacturing Co., Ltd.			
生产单位 Manufacturer		株式会社東北村田製作所 Tohoku Murata Manufacturing Co., Ltd.			
检验方法、程序 Inspection method and procedure		国际海事组织《国际海运危险货物规则》(2020版) IMO International Maritime Dangerous Goods Code (2020 Edition)			
样品外观 Sample appearance		银色金属外壳 Silvery Metal shell			
包装件信息 Package information		重量≤30kg. weight≤30kg.			
序号 NO.	电池种类 Battery type	型号 Model	容量Capacity /锂含量Li content	放置方式 Placement	
1	不可充电锂金属电池芯 Primary Li-metal cell	CR2450	610mAh / ≤0.3g	电池单独运输 Battery only	
鉴定结论 IDENTIFICATION CONCLUSION		1. 危险性识别(Hazards identification) 锂金属电池。 Lithium metal battery.			
		2. 海运按照国际海事组织《国际海运危险货物规则》办理的类项(Suggestion according to IMO IMDG Code) 根据特殊规定188, 该物品不受IMO IMDG Code其他条款限制。 The article is not subject to other provisions of IMO IMDG Code according to special provision 188.			
		3. 包装要求(Packaging requirements) 无。 None.			
		检验日期: 2023-01-11      签发日期: 2023-01-11 Inspection Date:      Issue Date:			
备注 Comment		生效日期: 2023-01-11 Effective Date:			

批准  
Approver: 王泉

审核  
Checker: 董学胜


主检  
Appraiser: 孙清



货物运输条件鉴定书  
Certification for Safe Transport of Chemical Goods

NO. 212300860793548

Page 2/3

序号 No.	检验结果及其他事项 Inspection results and other things
1	<p>本报告所述锂电池按照《国际海运危险货物规则》(2020版) 2.9.4.5规定的质量管理体系进行制造。 Lithium cells and batteries listed in this report were manufactured under the quality management program described in IMDG CODE 2020 EDITION 2.9.4.5.</p>
2	<p>本报告所述锂电池已通过联合国《试验和标准手册》第III部分38.3小节相应测试要求。 包装件能够承受1.2m跌落试验。 Lithium cells and batteries listed in this report are of the types proved to meet the requirements of each applicable test in the UN Manual of Tests and Criteria, Part III, sub-section 38.3. The package has passed the 1.2m drop test. UN38.3试验概要编号 The UN38.3 Test Summary No. (s) 812200100471428 详细信息请扫描右侧二维码。 Please scan the QR code on the right for more information.</p> 
3	<p>锂电池完全封装在内包装内, 位于坚固的外包装中。 Lithium cells and batteries are packed in inner packagings that completely enclose the cell or battery and placed in a strong outer packaging.</p>
4	<p>电池具有适当的防短路措施。 Cells and batteries are properly protected to prevent short circuits.</p>
5	<p>每个包装件必须标示恰当的锂电池标记。 装有锂电池的包装件, 符合国际民航组织《危险物品安全航空运输技术细则》第4部分第11章的包装说明965或968第IB部分规定的, 黏贴5.2.1.10(锂电池标记)和5.2.2.2所示的9A型标签, 应视为符合本特殊规定188的规定。 Each package shall be marked with the appropriate lithium battery mark. Packages containing lithium batteries packed in conformity with the provisions of part 4, chapter 11, packing instructions 965 or 968, section IB of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by air that bear the mark as shown in 5.2.1.10(lithium battery mark) and the label shown 5.2.2.2, Model No. 9A shall be deemed to meet the provisions of this special provision 188.</p>
6	/
7	/

-验证码: 280363-





\*\*\*报告结束\*\*\*





# 货物运输条件鉴定书

Certification  
for Safe Transport of Chemical Goods

## 非限制性货物

样品名称： 钮扣型二氧化锰锂电池 CR2450 3V 610mAh

Sample name: /

委托单位： 株式会社東北村田製作所  
Tohoku Murata Manufacturing Co., Ltd.

生产单位： 株式会社東北村田製作所  
Tohoku Murata Manufacturing Co., Ltd.



上海化工院检测有限公司  
SHANGHAI INSTITUTE OF CHEMICAL INDUSTRY TESTING CO.,LTD.





## 声 明 Statement

1. 鉴定书无上海化工院检测有限公司检验检测专用章、二维码无效。  
The certification is invalid if it is not affixed the dedicated inspection and testing seal of Shanghai Institute of Chemical Industry Testing Co., Ltd. and QR Code on it.
2. 鉴定书复印件无效。  
Copies of the certification are invalid.
3. 鉴定书无主检、审核、批准签字无效。  
The certification is invalid without the signatures of appraiser, checker and approver.
4. 鉴定书涂改无效。  
The certification is invalid if it is forged or altered.
5. 本鉴定书不涉及样品的成分鉴别，委托单位必须保证提供给本公司的样品与实际的出运货物相一致且相关成分等资料真实完整，由于样品与委托信息的真实性所带来的法律责任和其他后果均由委托单位自行承担。  
The certification does not involve ingredient analysis of the sample. It is the client's responsibility to guarantee that samples provided for appraisal are consistent with the goods to be transported and that relevant information and documents (eg: information on ingredients) submitted are authentic and complete. Otherwise, the client shall bear any legal liability and other possible consequence arising from the authenticity of samples and information provided.
6. 本鉴定书的鉴定结论仅适用于最终收到的样品。  
The conclusion of this certification only applies to the final sample as received.
7. 本鉴定书当年有效，铁路运输方式除外。特殊情况参见鉴定书备注。  
The certification is valid in the year subscribed on it except when transported by rail. Please refer to the comment of certification on special occasion.
8. 本鉴定书不考虑国家及经营人差异。  
The certification takes no account of the State and Operator Variations.
9. 货物的运输方式应与鉴定结论中的运输方式相一致。不同的运输方式，鉴定结果可能会有差异。  
The transportation mode of the goods shall be consistent with that in the appraisal conclusion. Different transportation modes may lead to different appraisal results.
10. 鉴定书真伪性可登入本公司网站 [www.ghs.cn](http://www.ghs.cn) 或扫描鉴定书中二维码进行查询。  
The authenticity of the certification can be verified by our website([www.ghs.cn](http://www.ghs.cn)) or the QR code in the certification.
11. 送检申请可登入本公司网站 [www.ghs.cn](http://www.ghs.cn) 进行网上委托。  
The application of the certification can be done via our website: [www.ghs.cn](http://www.ghs.cn).

地址：上海市光复西路2779号接待大厅

Address: Reception Hall, Shanghai Institute of Chemical Industry Co., Ltd, No.2779  
West Guangfu Road, Shanghai, China.

邮编(Post code): 200062

电话(Tel): (008621)31765555

邮箱(Email): [center@ghs.cn](mailto:center@ghs.cn)

网址(Website): [www.ghs.cn](http://www.ghs.cn)



# 货物运输条件鉴定书

Certification for Safe Transport of Chemical Goods

NO. 212300460893649

Page 1/3

样品名称 Sample Name	中文 Chinese	钮扣型二氧化锰锂电池 CR2450 3V 610mAh		
	英文 English	/		
委托单位 Consignor		株式会社東北村田製作所 Tohoku Murata Manufacturing Co., Ltd.		
生产单位 Manufacturer		株式会社東北村田製作所 Tohoku Murata Manufacturing Co., Ltd.		
检验方法、程序 Inspection method and procedure		JT/T617-2018《危险货物道路运输规则》第2、3部分 JT/T 617-2018 Regulations concerning road transportation of dangerous goods Part 2 and 3		
样品外观 Sample appearance		银色金属外壳 Silvery Metal shell		
包装件信息 Package information		重量≤30kg. weight≤30kg.		
序号 NO.	电池种类 Battery type	型号 Model	容量Capacity / 锂含量Li content	放置方式 Placement
1	不可充电锂金属电池芯 Primary Li-metal cell	CR2450	610mAh / ≤0.3g	电池单独运输 Battery only
鉴定 结论 IDENTIFICATION CONCLUSION	1. 危险性识别(Hazards identification) 无。 None.			
	2. 公路运输按照JT/T 617-2018办理的类项 (Suggestion according to JT/T 617-2018) 根据特殊规定188, 该物品不受本规则限制。 The article is not restricted to JT/T 617-2018 according to special provision 188.			
	3. 包装要求(Packaging requirements) 无。 None.			
	检验日期: 2023-01-11      签发日期: 2023-01-11      生效日期: 2023-01-11 Inspection Date:      Issue Date:      Effective Date:			
备注 Comment	/			

批准  
Approver: 王宝

审核  
Checker: 董学胜

主检  
Appraiser: 孙清



# 货物运输条件鉴定书

Certification for Safe Transport of Chemical Goods

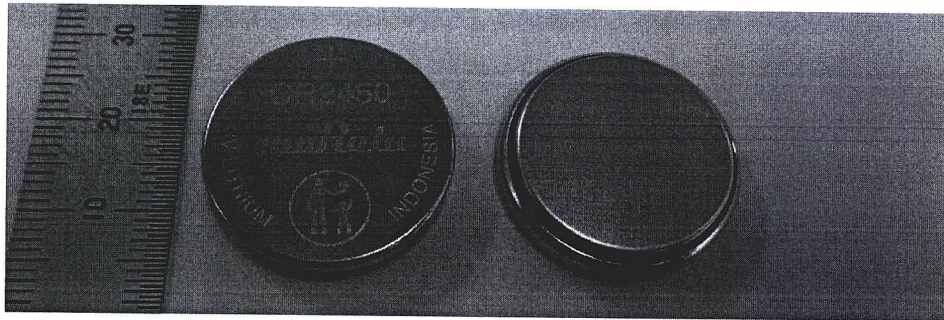
NO. 212300460893649

Page 2/3

序号 No.	检验结果及其他事项 Inspection results and other things
1	<p>本报告所述锂电池已通过联合国《试验和标准手册》第III部分38.3小节相应测试要求。 包装件能够承受1.2m跌落试验。</p> <p>Lithium cells and batteries listed in this report are of the types proved to meet the requirements of each applicable test in the UN Manual of Tests and Criteria, Part III, sub-section 38.3. The package has passed the 1.2m drop test.</p>
2	<p>锂电池完全封装在内包装内, 位于坚固的外包装中。</p> <p>Lithium cells and batteries are packed in inner packagings that completely enclose the cell or battery and placed in a strong outer packaging.</p>
3	<p>电池具有适当的防短路措施。</p> <p>Cells and batteries are properly protected to prevent short circuits.</p>
4	<p>每个包装件应按以下要求进行标记, 每批货物提供含以下要求的随附文件。</p> <p>—标明包装件内装有“锂金属”或“锂离子”电池芯或电池组。 —标明包装件必须小心轻放, 如果包装件损坏, 有着火的危险。 —标明如包装件受到损坏, 必须遵守的特别程序, 包括检查和必要时重新包装。 —了解其它情况的联系方式。</p> <p>Each package shall be marked with the following requirements, and each consignment shall be accompanied with a document including that:</p> <p>—The package contains “lithium metal” or “lithium ion” cells or batteries. —The package must be handled with care and that a flammability hazard exists if the package is damaged. —Special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary. —Contact information for additional information.</p>
5	/
6	/
7	/

-验证码:726586-





\*\*\*报告结束\*\*\*





仅限货机  
CAO



NO.212300860393547



# 货物运输条件鉴定书

Certification  
for Safe Transport of Chemical Goods

## 危险品

样品名称： 钮扣型二氧化锰锂电池 CR2450 3V 610mAh

Sample name: /

委托单位： 株式会社東北村田製作所  
Tohoku Murata Manufacturing Co., Ltd.

生产单位： 株式会社東北村田製作所  
Tohoku Murata Manufacturing Co., Ltd.



上海化工院检测有限公司  
SHANGHAI INSTITUTE OF CHEMICAL INDUSTRY TESTING CO.,LTD.





## 声 明 Statement

1. 鉴定书无上海化工院检测有限公司检验检测专用章、二维码无效。  
The certification is invalid if it is not affixed the dedicated inspection and testing seal of Shanghai Institute of Chemical Industry Testing Co., Ltd. and QR Code on it.
2. 鉴定书复印件无效。  
Copies of the certification are invalid.
3. 鉴定书无主检、审核、批准签字无效。  
The certification is invalid without the signatures of appraiser, checker and approver.
4. 鉴定书涂改无效。  
The certification is invalid if it is forged or altered.
5. 本鉴定书不涉及样品的成分鉴别，委托单位必须保证提供给本公司的样品与实际的出运货物相一致且相关成分等资料真实完整，由于样品与委托信息的真实性所带来的法律责任和其他后果均由委托单位自行承担。  
The certification does not involve ingredient analysis of the sample. It is the client's responsibility to guarantee that samples provided for appraisal are consistent with the goods to be transported and that relevant information and documents (eg: information on ingredients) submitted are authentic and complete. Otherwise, the client shall bear any legal liability and other possible consequence arising from the authenticity of samples and information provided.
6. 本鉴定书的鉴定结论仅适用于最终收到的样品。  
The conclusion of this certification only applies to the final sample as received.
7. 本鉴定书当年有效，铁路运输方式除外。特殊情况参见鉴定书备注。  
The certification is valid in the year subscribed on it except when transported by rail. Please refer to the comment of certification on special occasion.
8. 本鉴定书不考虑国家及经营人差异。  
The certification takes no account of the State and Operator Variations.
9. 货物的运输方式应与鉴定结论中的运输方式相一致。不同的运输方式，鉴定结果可能会有差异。  
The transportation mode of the goods shall be consistent with that in the appraisal conclusion. Different transportation modes may lead to different appraisal results.
10. 鉴定书真伪性可登入本公司网站 [www.ghs.cn](http://www.ghs.cn) 或扫描鉴定书中二维码进行查询。  
The authenticity of the certification can be verified by our website([www.ghs.cn](http://www.ghs.cn)) or the QR code in the certification.
11. 送检申请可登入本公司网站 [www.ghs.cn](http://www.ghs.cn) 进行网上委托。  
The application of the certification can be done via our website: [www.ghs.cn](http://www.ghs.cn).

地址：上海市光复西路2779号接待大厅

Address: Reception Hall, Shanghai Institute of Chemical Industry Co., Ltd, No.2779  
West Guangfu Road, Shanghai, China.

邮编(Post code): 200062

电话(Tel): (008621) 31765555

邮箱(Email): [center@ghs.cn](mailto:center@ghs.cn)

网址(Website): [www.ghs.cn](http://www.ghs.cn)

# 货物运输条件鉴定书

NO. 212300860393547

Page 1/3

Certification for Safe Transport of Chemical Goods

样品名称 Sample Name	中文 Chinese	钮扣型二氧化锰锂电池 CR2450 3V 610mAh				
	英文 English	/				
委托单位 Consignor		株式会社東北村田製作所 Tohoku Murata Manufacturing Co., Ltd.				
生产单位 Manufacturer		株式会社東北村田製作所 Tohoku Murata Manufacturing Co., Ltd.				
检验方法、程序 Inspection method and procedure		国际航空运输协会《危险品规则》64版 IATA Dangerous Goods Regulations (DGR) 64th Edition				
样品外观 Sample appearance		银色金属外壳 Silvery Metal shell				
包装件信息 Package information		锂电池总净重≤2.5kg。 Lithium batteries total net weight≤2.5kg.				
序号 NO.	电池种类 Battery type	型号 Model	容量Capacity / 锂含量Li content	放置方式 Placement	单颗重量kg Unit weight	数量 Quantity
1	不可充电锂金属电池芯 Primary Li-metal cell	CR2450	610mAh / ≤0.3g	电池单独运输 Battery only	0.0065	300
鉴定结论 IDENTIFICATION CONCLUSION	1. 危险性识别 (Hazards identification) 杂项。 Miscellaneous.					
	2. 空运按照国际航空运输协会《危险品规则》办理的类项 (Suggestion according to IATA DGR) Shipping name: Lithium metal batteries Class or division: 9 UN Number: UN3090					
	3. 包装要求 (Packaging requirements) 按包装说明968第IB部分要求办理。 The goods are packaged according to the Packaging Instruction 968 section IB. 仅限货机 Cargo Aircraft Only					
	<div> <div>检验日期: 2023-01-11</div> <div>签发日期: 2023-01-11</div> <div>生效日期: 2023-01-11</div> </div> <div> <div>Inspection Date:</div> <div>Issue Date:</div> <div>Effective Date:</div> </div>					
备注 Comment	/					

批准  
Approver: 王东

审核  
Checker: 董学胜

主检  
Appraiser: 孙清





货物运输条件鉴定书  
Certification for Safe Transport of Chemical Goods

NO. 212300860393547

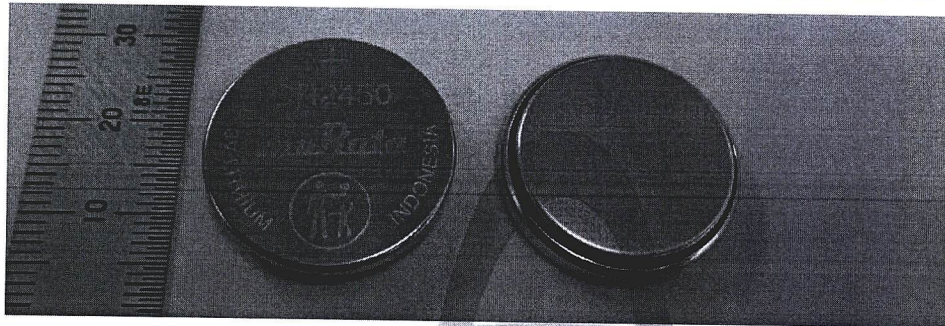
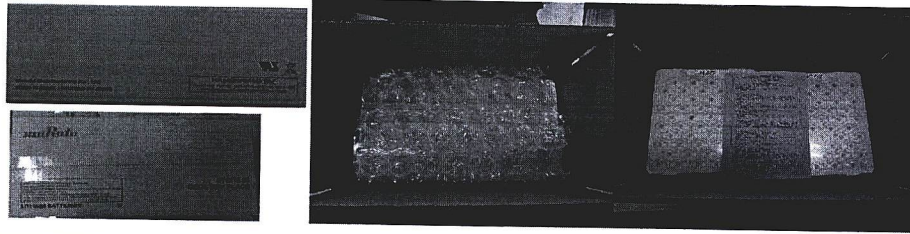
Page 2/3

序号 No.	检验结果及其他事项 Inspection results and other things
1	<p>本报告所述锂电池按照《危险品规则》(64版) 3.9.2.6.1(e)规定的质量管理体系进行制造。</p> <p>本报告所述锂电池不属于因安全原因召回的锂电池。</p> <p>本报告所述锂电池不进行以回收或处置为目的的航空运输, 不属于废弃锂电池。</p> <p>Lithium cells and batteries listed in this report were manufactured under the quality management program described in IATA DGR 64th 3.9.2.6.1(e).</p> <p>Lithium cells and batteries listed in this report are not the defective cells or batteries returned to the manufacturer for safety reasons.</p> <p>Lithium cells and batteries listed in this report are not waste lithium cells or batteries, and they will not be shipped for recycling or disposal.</p>
2	<p>本报告所述锂电池已通过联合国《试验和标准手册》第III部分38.3小节相应测试要求。</p> <p>包装件能够承受1.2m跌落试验。包装件能够承受《危险品规则》包装说明968 IB中所要求的堆码试验。</p> <p>Lithium cells and batteries listed in this report are of the types proved to meet the requirements of each applicable test in the UN Manual of Tests and Criteria, Part III, sub-section 38.3.</p> <p>The package has passed the 1.2m drop test. The package has passed the stacking test required in PI 968 IB of DGR.</p> <p>UN38.3试验概要编号</p> <p>The UN38.3 Test Summary No. (s)</p> <p>812200100471428</p> <p>详细信息请扫描右侧二维码。</p> <p>Please scan the QR code on the right for more information.</p> 
3	<p>锂电池完全封装在内包装内, 位于坚固的刚性外包装中。</p> <p>电池具有适当的防短路措施。</p> <p>Lithium cells and batteries are packed in inner packagings that completely enclose the cell or battery and placed in a strong rigid outer packaging.</p> <p>Cells and batteries are properly protected to prevent short circuits.</p>
4	<p>按DGR IB部分托运的电池必须根据第8部分规定在托运人申报单中描述; 并且当使用航空货运单时, 货运单必须包含8.2.1和8.2.2中相关适用要求。</p> <p>Cells or batteries shipped under the provisions of Section IB in IATA DGR must be described on a Shipper's Declaration as set out in Section 8, and the air waybill, when used, must contain the applicable information required by 8.2.1 and 8.2.2.</p>
5	<p>除使用9类锂电池危险性标签(DGR图7.3.X)外, 每个包装件必须按DGR图7.1.C所示做耐久清晰的标记。注: 63版DGR图7.1.C所示锂电池标记可继续使用至2026年12月31日。</p> <p>每个包装件必须按DGR7.1.4.1(a)和(b)要求标记, 此外当7.1.4.1(c)有要求时还必须标明包装件净重。</p> <p>每个包装件必须贴有“仅限货机”标签(DGR图7.4.B)。</p> <p>Each package must be durably and legibly marked with the mark shown in Figure 7.1.C in IATA DGR in addition to the Class 9-Lithium Battery hazard label (Figure 7.3.X in IATA DGR). Note: The mark illustrated in Figure 7.1.C of the 63rd edition of DGR may continue to be used until 31 December 2026.</p> <p>Each package must be marked in accordance with the requirements of 7.1.4.1(a) and (b) in IATA DGR and in addition the net weight when required by 7.1.4.1(c) must be marked on the package.</p> <p>Each package must be labelled with the "Cargo Aircraft Only" label (Figure 7.4.B in IATA DGR).</p>
6	<p>电池不得与第1类爆炸品(1.4S项除外), 2.1项易燃气体, 第3类易燃液体, 4.1项易燃固体或5.1项氧化性物质等危险品包装在同一外包装或集合包装内。</p> <p>Cells and batteries must not be packed in the same outer packaging or overpack with dangerous goods classified in Class 1 (explosives) other than Division 1.4S, Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids) or Division 5.1 (oxidizers).</p>
7	/
-验证码: 165740-	



货物运输条件鉴定书  
Certification for Safe Transport of Chemical Goods

NO. 212300860393547  
Page 3/3




\*\*\*报告结束\*\*\*





# 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: <a href="mailto:tmm-unr-smry@murata.com">tmm-unr-smry@murata.com</a> 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:  Tohoku Murata Manufacturing Co., Ltd. 1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima, 963-0531 Japan Phone: +81-24-955-7834 e-mail: <a href="mailto:tmm-unr-smry@murata.com">tmm-unr-smry@murata.com</a> 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: 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	
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)	Testing additional comments:	
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	
<b>PRODUCT CLASSIFICATION FOR TRANSPORT (According to UN - DGP)</b>		
UN Classification: <b>UN3090</b>	Proper Shipping Name: <b>Lithium Metal Battery Cell</b>	
Signature with name and title of signatory as an indication of the validity of information provided:  Hideaki Takahashi Quality Assurance Department 	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.	
Date document was generated: 24-Jan-22		

**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

1 of 6 Page

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

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

- 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 : )
- 機種名 / Model Name : CR2450 Cell Type : CR2450 (muRata) (Made in Indonesia)  
Murata Model Name : CR2450
- 顧客名 / Customer : Murata Manufacturing Co., Ltd.
- 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>

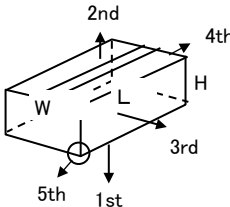


国連勧告試験 梱包結果

Test Result of UN Recommendations for Package

No. : UN38.3-CR2450  
DATE : Jan 24,2022  
PAGE : 5 of 6 Page

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(株)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)	
	342 mm		183 mm		151 mm	
						質量 /Gross Weight (kg)
						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. 2 m	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

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、又は輸送物の積み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

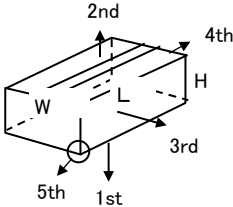
総合判定
合格/OK

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  
PAGE : 6 of 6 Page

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(株)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. 2 m	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

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、又は輸送物の積み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