NO.1109010188

CNAS 检测 CNAS L0748

检 验 报 告

Test Report

产品名称： 成品配件（锂电池）/ 钮扣电池 CR2032 3.0V 220mAh

Name of Goods: LITHIUM BATTERY CR2032 3.0V 220mAh

委托单位: WUHAN LIXING (TORCH) POWER SOUCES CO.,LTD

Company: /

上海化工研究院检测中心

Shanghai Research Institute of Chemical Industry Testing Centre

上海化工研究院检测中心
检 验 报 告

SRICI Testing Centre Test Report

No. 1109010188

样品名称 Name of Sample	中文 Chinese	成品配件（锂电池）/ 钮扣电池 CR2032 3.0V 220mAh
	英文 English	LITHIUM BATTERY CR2032 3.0V 220mAh
样品编号 Sample No	1109010188	
送检单位 Consignor	WUHAN LIXING (TORCH) POWER SOUCES CO.,LTD /	
生产单位 Manufacturer	武汉力兴（火炬）电源有限公司 WUHAN LIXING (TORCH) POWER SOURCES CO., LTD	
检验方法 Test method	联合国《关于危险货物运输的建议书》 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS"	
判定标准 Criterion	联合国《关于危险货物运输的建议书》 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS"	
样品外观 Appearance	长方形瓦楞纸箱(430mm×180mm×55mm)，内装600个锂电池。 Rectangle corrugated carton(430mm×180mm×55mm),containing 600 lithium ion batteries.	
检测起迄日期 Test Date	2009年01月13日 — 2009年01月20日	
检测项目 Test Items	1.2m跌落试验、包装件毛重测试 1.2m Drop test、Gross Weight Measure	
检验结论 Conclusion	该包装件能够承受1.2米跌落试验，其内装的电池没有破损，没有产生导致内装电池的直接接触及内容物泄漏的移动;该包装件总重量为2.2kg(毛重)。 This package is capable of withstanding a 1.2m drop test in any orientation without damage to cells or batteries contained therein,without shifting of the contents so as to allow battery to battery contact and without release of contents.The weight of the package is 2.2kg gross mass. 签发日期(Date)： 2009年01月20日	
备注 Comment	内包装：塑料托盘。 Inner package:plastic tray.	
受检单位地址 Consignor Address	武汉东湖新技术开发区大学园路长城创新科技园 Great Wall Innovative Science Park, University Garden Road, East Lake New Technology Development Zone, Wuhan, Hubei, P.R.C	邮政编码 Post Code 430223

批准 Approver: 张小凯 审核 Checker: 王宏 编制 Compiler: 傅欣

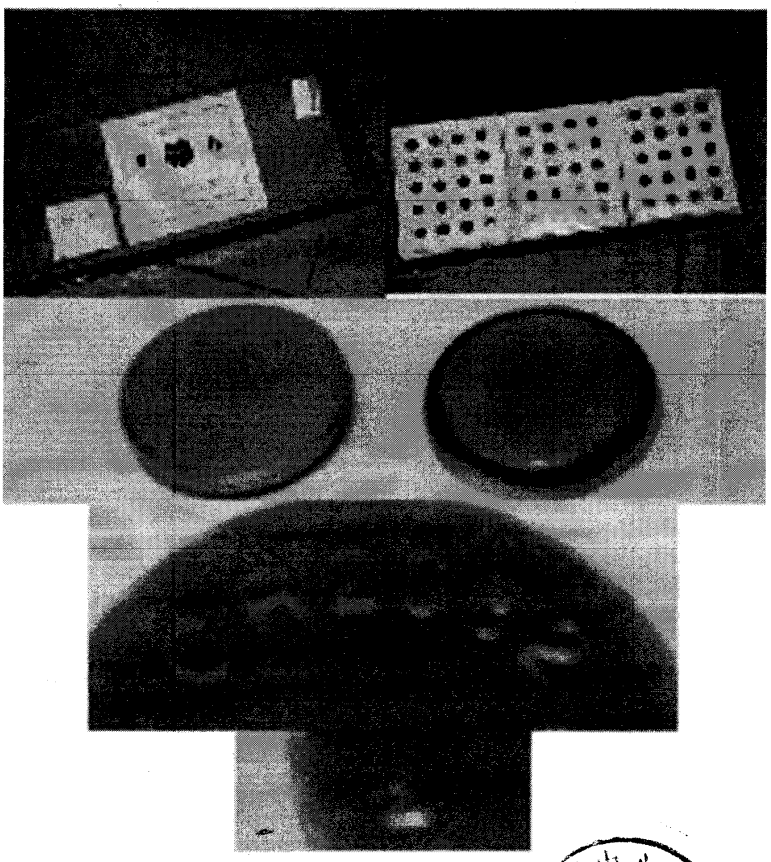
职务 Title: 副总工程师(Vice chief engineer)

上海化工研究院检测中心
检 验 报 告
SRICI Testing Centre Test Report

No. 1109010188

序号 No	检验项目名称 Name of Test Items	标准要求或标准条款号 Standard requirement or The Clause Nember of Standard	检测结果 Test Result		本项结论 Conclusion	备注 Remark
1	1.2米 跌落试验 1.2m Drop Test	联合国《关于危险货物运输的建议书规章范本》(15th)(以下简称：规章范本)(15th) 3.3章 188条款 Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations (15th) (for short: UN Model Regulations) SPECIAL PROVISION 188	面跌落	包装未破裂，内装物完好。The package is not cracked, the contents are not damaged and not shifted.	合格 Passed	/
			棱跌落	包装未破裂，内装物完好。The package is not cracked, the contents are not damaged and not shifted.		
			角跌落	包装未破裂，内装物完好。The package is not cracked, the contents are not damaged and not shifted.		
2	包装件 毛重测试 Gross Weight Measure	联合国《关于危险货物运输的建议书规章范本》(15th)(以下简称：规章范本)(15th) 3.3章 188条款 Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations (15th) (for short: UN Model Regulations) SPECIAL PROVISION 188	2.16 Kg		合格 Passed	/
检验环境条件 Test Environment Condition		环境温度:17℃;环境湿度:/% Ambient temperature:17℃, Ambient humidity:/%				
分包检验情况 Subcontracted Test Condition		检验项目 Test Item	/			
		分包实验室 Subcontracted Laboratory	名称 Name	/	邮编 Post Code	/
			地址 Address	/	电话 Tel	/

上海化工研究院检测中心
检 验 报 告－附表
SRICI Testing Centre Test Report—Appendix No 1109010188



KTS Batteries

材料安全資料表 Material Safety Data Sheet

1 化學品及企業標識(Chemical Product and Company Identification)	
產品名稱 Product Name	鈕扣式鋰電池 CR2032 3.0V 220mAh Lithium manganese dioxide button cell CR2032 3.0V 220mAh
供應商名稱 Supplier Name	仕野股份有限公司 VIC-DAWN ENTERPRISECO., LTD.
地址 Address	231 新北市新店區中正路四維巷 1 弄 2 號 4 樓 4F., No.2, Aly. 1, Siwei Ln., Zhongzheng Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)
製造商名稱 Manufacturers Name	武漢力興（火炬）電源有限公司 WUHAN LIXING (TORCH) POWER SOURCES CO.,LTD.
地址 Address	武漢市東湖高新技術開發區關東工業園 430074 The Guandong industrialized country of East Lake high and new technology development zone , Wuhan 430074
品牌 Brand	KTS
緊急聯絡電話 Emergency Number	886-2-22185115
傳真 Fax	886-2-22189119

2 成分/組成資訊(Composition/Information on Ingredients)			
名稱 Description	含量 Approximate Percent (wt %)	重量 Approximate weight (mg)	化學文摘號 CAS No.
二氧化錳 Manganese dioxide	26.8	804	1313-13-9
碳 Graphite	2.2	66	7782-42-5
Teflon (PTFE)	1.5	45	9002-84-0

PP 塑膠 Plastic	4.7	141	9003-07-0
不銹鋼 SUS430 Stainless Steel	53.6	1608	12597-68-1
鋰 Lithium	2.1	63	7439-93-2
高氯酸鋰 Lithium Perchlorate	0.9	27	7791-03-9
碳酸丙烯酯 Propylene carbonate	6.5	195	108-32-7
乙二醇二甲醚 1,2 Dimethoxyethane	1.7	51	110-71-4
總計 Total	100	3000	-

3 危險性概述(Haxards Summarizing)

鋰 Lithium	與水接觸劇烈反應,易燃燒。只能用蘇打粉,沙子等滅火。 It reacts violently when in contact with water,and it is flammable.Use only soda ash or sand to extinguish flame.
二氧化錳 Manganese dioxide	強氧化劑,具腐蝕性,攝入有毒。可用 CO_2 滅火。 A toxic material also an corrosive and an oxidising agent.Use only CO_2 or halon to extinguish flame.
碳酸丙烯酯 Propylene carbonate	可腐蝕眼睛和皮膚。 可用 CO_2 滅火。 Will irritate the eyes and the skin by absorption,harmful if ingested or inhaled. Use only CO_2 or halon to extinguish flame.
乙二醇二甲醚 1,2 Dimethoxyethane	極易燃。吸入和攝入有害。可用 CO_2 滅火。 Highly flammable. Harmful if ingested or inhaled. Use only CO_2 or halon to extinguish flame.

其他組分不活潑,或者危害較小。

Other materials are either inert or have low hazard associated with their exposure.

4 急救措施(First-aid Measures)

眼睛:用水沖洗,立即就醫。

Eyes:irrigate thoroughly with water.Obtain medical attention.

皮膚:用水徹底沖洗,脫掉受污染的衣物並清洗。除非少量接觸,否則就醫。

Skin:drench the skin thoroughly with water.Remove contaminated clothing and wash before re-use.Unless contact has been slight,obtain medical attention.

吸入:離開污染場所,休息並保暖。嚴重時就醫。

Inhalation:remove from exposure,rest and keep warm.In severe cases,obtain medical attention.

食入:用水徹底沖洗口部後大量飲水。就醫。

Ingestion:wash out mouth thoroughly with water and give plenty of water to drink.Obtain medical attention.

5 消防措施(Fire-fighting Measures)

大量電池燃燒,可能發生爆炸。適合的滅火介質為 CO_2,乾粉滅火器和沙子。不可用水滅火。消防人員應配戴空氣呼吸器，防護頭盔，眼鏡等。

There would be explosion in the case where significant quantities of lithium-manganese dioxide batteries have been involved in a fire. Applicable extinguishing media: CO_2 fire extinguisher , ABC dry powder extinguisher , sand ,etc.Do not use water as extinguishing agent. Firemen should wear the air breathe machine, helmet, glasses ,etc.

6 洩露應急處理(Accidental Release Measures)

不可呼吸洩漏液蒸汽,或用手接觸液體。若皮膚已接觸電解質,立即用大量水沖洗。可用泥土和沙子吸收洩漏液。將漏液電池和沙子按特殊廢棄物處理。

Do not breath vapours or touch liquid with bare hands.If the skin has come into contact with the electrolyte it should be washed thoroughly with water.Earth or sand should be used to absorb the exudation.Seal leaking battery and earth in a heavy-duty Polythene bag and dispose of as special waste.

7 操作處置與儲存(Handling and Storage)

保證電池包裝完整,避免短路。

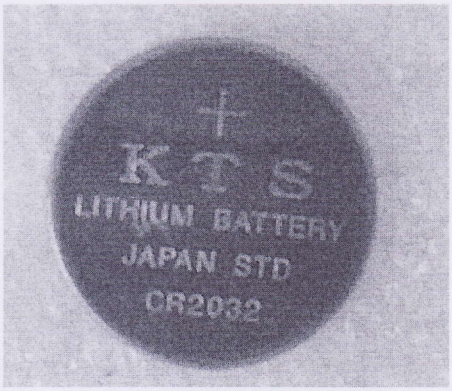
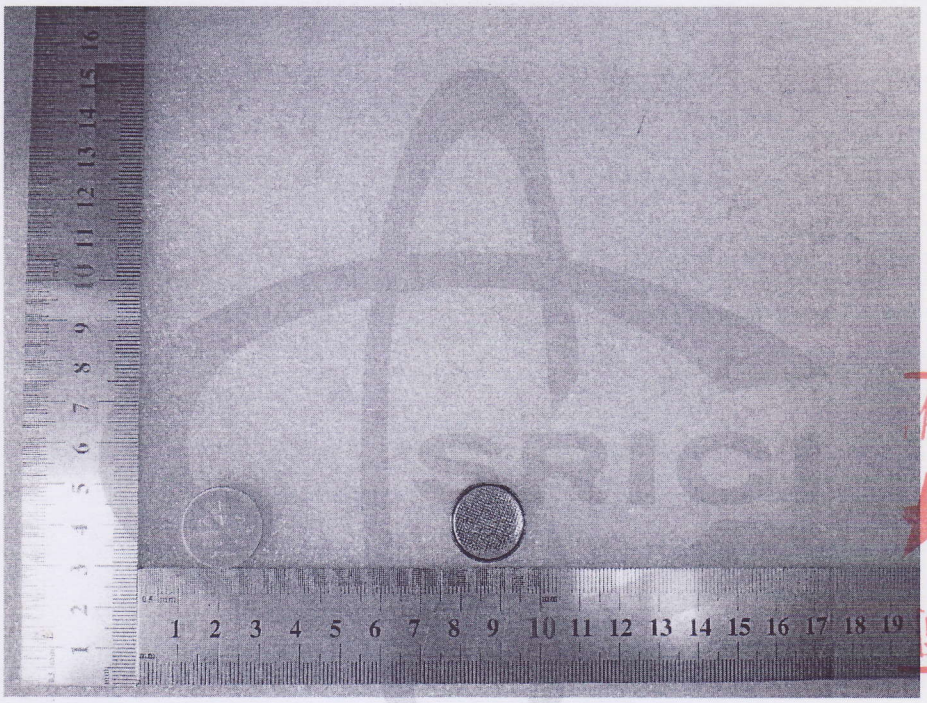
Pack the batteries well,and avoid short circuit.

不要拆卸電池。 Never disassemble batteries.
不要吸入電池蒸汽或用光手接觸電池內部物質。 Do not breathe cell vapors or touch internal material with bare hands.
將電池儲存在陰涼通風的地方,避免陽光直射。 Store batteries in cool well-ventilated area,keep out of direct sunlight.
8 接觸控制/個體防護(Exposure Controls/Personal Protection)
外部含鎳殼蓋的腐蝕可能生成有毒產物。避免吞咽電池。接觸後洗手。 External corrosion of the nickle can could result in theformation of toxic metal salts.Avoid ingestion,Wash hands after contact.
9 理化特性(Physical and Chemical Properties)
本品為固態,無味。其他指標不適用。 This battery is solid state , and inodorous.The other items are not applicable.
10 穩定性和反應性(Stability and Reactivity)
有害物質被密封在殼體內,在正常情況下本產品穩定,無害。 Hazardous materials are housed within a sealed unit,under normal conditions this unit is stable and non-hazardous.
若電池密封被損壞,金屬鋰會與水反應放出可燃性氣體。 Lithium will react with water and produce flammable gas if the seal of battery is damaged.
11 毒理學資料(Toxicological Information)
若電池不損壞,無毒。 No toxicity unless the battery is damaged.
12 生態學資料(Ecological Information)
不適用。 Not Applicable.
13 廢棄處置(Disposal)
不要焚燒電池或將電池加熱超過 80℃。根據當地法規處理電池。

UN38.3 试验概要
UN38.3 Test Summary

811900800802896

单位信息 Company information			
委托单位 Consignor	仕野股份有限公司 VIC-DAWN ENTERPRISE CO., LTD 新北市新店區中正路四維巷1弄2號4樓 4F., No.2, Aly. 1, Siwei Ln., Zhongzheng Rd., Xindian Dist., New Taipei City 231, Taiwan 886222185115 kevin@shihno.com.tw www.shihno.com.tw		
生产单位 Manufacturer	武汉力兴(火炬)电源有限公司 WUHAN LIXING（TORCH）POWER SOURCES CO.,LTD 武汉东湖新技术开发区关东工业园7号地 Guandong Industrial Park ,East Lake High Technology DEV Zone 027-87785520 jingc@lisun.com www.lisun.com		
测试单位 Test lab	上海化工院检测有限公司 Shanghai Research Institute of Chemical Industry Testing Co., Ltd. 中国.上海.普陀区云岭东路345号，200062 No.345 East Yunling Road, Putuo, Shanghai, China 200062 86-21-31765555 battery@ghs.cn www.ghs.cn		
电池信息 Battery information			
名称 Name	锂原电池/锂金属电池/锂-二氧化锰钮扣电池 Lithium manganese dioxide button cell	品牌 Brand	KTS
型号 Type	CR2032	原始测试型号 Original tested type	/
标称电压(V) Nominal voltage	3	容量 Capacity	220mAh
描述 Description	不可充电锂金属电池芯 Primary Li-metal cell	锂含量(g) Li content	0.06
质量(kg) Mass	0.003	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.	1119030278	测试报告日期 Date of test report	2019-04-26
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 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria 38.3		ST/SG/AC.10/11/Rev.6
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)	/

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.638.3 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 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	2019-10-16

-验证码:752466-

报告结束

Do not incinerate or subject cells to temperature in excess of 80℃.Dispose of in accordance with local regulations.

14 運輸資訊(Transport Information)

國際運送規定:

鋰電池國際運輸規程

World transports and stipulates :

Lithium battery international transportation rules

Effective April 1, 2016 all KTS lithium batteries are not subject to the requirements of the U.S. Department of Transportation (DOT), Subchapter C, Hazardous Material Regulations if shipped in compliance with 49 CFR 173.185 and Special Provision 188.Currently all KTS lithium batteries can be transported under the International Civil Aviation Organization (ICAO) and the Packing Instructions (PI) 968 Section IB(Batteries), PI 969 SectionⅡ(Batteries, packed with equipment) and PI 970 SectionⅡ (Batteries, contained in equipment).

They are considered to be non-dangerous by the IATA Dangerous Goods regulations as below:

- The goods with lithium metal cells and should complies with IATA DGR IATA Dangerous Goods Regulations 61th edition.
- The substance is not restricted to IMO IMDG code according to special provision 188.
- Section IB of PI968；Section II of PI969、PI970
- A lithium metal cell, the lithium content is not more than 1g.
- For these lithium cells/batteries contained in equipment, the

equipment is equipped and protected with an effective means to prevent short circuits, dangerous reverse current flow and accidental activation.

- This consignment does not contain any recalled and/or defective batteries that have the potential of producing a dangerous evolution of heat, fire or short circuit.
- Each package of batteries must be capable of withstanding a 1. 2m-drop test in any orientation without damage to dells or batteries contained therein, shifting of the contents so as to allow battery to battery(or cell to cell) contact and/or release of contents.
- Each cell or battery is of the type proven to meet the requirements of each test in the UN Manual of Tests an Criteria, Part III, subsection 38.3 as of the Material Safety Data Sheet.

The only requirement for shipping these batteries, in all modes of transportation, are that they must be separated to prevent short-circuits and to prevent movement that could lead to short-circuits. They must also be packed in strong packaging that can withstand the rigors normal to transportation.

運輸時,應避免電池短路。

The batteries being transported must be protected from shorting-circuiting and protected from movement that could lead to short-circuiting.

During the transportation of a large amount of batteries by ship, trailer or railway, do not leave them in the places of high temperatures and do not allow them to be exposed to condensation. During the transportation do not allow packages to be fallen down or damaged.
15 法規資訊(Regulatory Information)
特殊要求依據當地法規。 Special requirement be according to the local regulations.
16 其他資訊(Other Information)

生效時間 Effective Date:	2020.01.01
填表部門 Dept. of Issue	仕野股份有限公司 VIC-DAWN ENTERPRISE CO., LTD.
文件號 Document Number	LX-QR-824-38
備註 Remarks	以上資料只基於對產品目前狀態的瞭解。 The above information is given based on the present state of our knowledge of this product.

maxell

SAFETY DATA SHEET

The batteries are exempt articles and are not subject to the OSHA Hazard Communication Standard Requirement. This sheet is provided as technical information only. The information and recommendations set forth are made in good faith and are believed to be accurate as of the date of preparation. However, **Maxell makes no warranty expressed or implied.**

Section 1 - Product and Company Identification

Product Name	Sizes:	Date of preparation:
Coin Type Lithium Manganese Dioxide Battery (CR)	All	Jan. 1, 2019
Company:		Telephone Numbers:
Maxell, Ltd., Energy Division		81-(0)794-63-8054
Address (Number, Street, City, State, and ZIP Code):		Fax Numbers:
5, Takumidai, Ono-shi, Hyogo 675-1322, Japan		81-(0)794-63-8445

Section 2 - Hazards Identification

This contains lithium, organic solvent, and other combustible materials. For this reason, improper handling of the battery could lead to distortion, leakage*, overheating, explosion, or fire and cause human injury or equipment trouble. Please strictly observe safety instructions.

(* Leakage is defined as an unintended escape of liquid from a battery.)

Section 3 - Composition/Information on Ingredients

Ingredient	CAS#	Content (wt %)
Manganese Dioxide (MnO_2)	1313-13-9	15 to 40
Propylene Carbonate ($C_4H_6O_3$)	108-32-7	2 to 6
1,2-Dimethoxyethane ($C_4H_{10}O_2$)	110-71-4	1 to 5
Lithium Perchlorate ($LiClO_4$)	7791-03-9	0.1 to 1.5
Lithium or Lithium Alloy (Li)	7439-93-2	1 to 5
Carbon (C)	7782-42-5	1 to 4

Lithium content for each cell

Model	Li content (g)	Model	Li content (g)
CR1216	0.008	CR2016	0.03
CR1220	0.011	CR2025	0.05
CR1616	0.02	CR2032	0.07
CR1620	0.025	CR2032H	0.07
CR1632	0.04		

NA=Not Applicable

Section 4 - First Aid Measures

None unless internal materials exposure. If contents are leaked out, observe following instructions.

Inhalation	Fumes can cause respiratory irritation. Remove to fresh air and consult a physician.
Skin	Immediately flush skin with plenty of water. If itch or irritation by chemical burn persists, consult a physician.
Eyes	Immediately flush eye with plenty of water for at least 15 minutes. Consult a physician immediately.
Ingestion	If swallowing a battery, consult a physician immediately. If contents come into mouth, immediately rinse by plenty of water and consult a physician.

Section 5 - Fire Fighting Measures

Extinguishing Media	Extinguisher of alkaline metal fire is effective. Plenty of cold water is also effective to cool the surrounding area and control the spread fire. But hydrogen gas may be evolved by the reaction of water and lithium and it can form an explosive mixture. Therefore in the case that lots of lithium metal batteries are burning in a confined space, use a smothering agent (e.g. carbon dioxide or dry sand).
Fire fighting procedure	Use self-contained breathing apparatus and full protective gear not to inhale harmful gas.

Section 6 - Accidental Release Measures

If the battery releases liquid, wipe it with a dry cloth.

Keep the battery away from fire or heat.

Section 7 - Handling and Storage

1) Handling

- **Never swallow.**

  If a battery is accidentally swallowed, see Section 4 - First Aid Measures.

- **Never charge.**

  The battery is not designed to be charged by any electrical source. Charging can generate gas and internal short-circuiting, leading to distortion, leakage, overheating, explosion or fire.

● **Never heat.**

Heating the battery to more than 100 deg. C can increase the internal pressure, causing distortion, leakage, overheating, explosion or fire.

● **Never expose to naked flames.**

Exposing to naked flames can cause the lithium metal to melt, causing the battery to catch fire and explode.

● **Never disassemble or deform.**

Disassembly or deforming the battery can cause leakage, overheating, explosion or fire due to internal short-circuits.

● **Never reverse the positive and negative terminals when inserting in electrical equipment.**

Inserting the battery incorrectly can lead to short-circuiting, charging or forced-discharging. This can cause distortion, leakage, overheating, explosion or fire.

● **Never short-circuit the battery.**

Do not allow the positive and negative terminals to short-circuit. Never carry or store the battery with metal objects such as necklaces or hairpins. Do not take multiple batteries out of the package and stack or mix them when storing. Otherwise, this can lead to distortion, leakage, overheating, explosion or fire.

● **Never weld the terminals or weld wire to the body of the battery.**

The heat of welding or soldering can cause the lithium to melt or cause damage to the insulating material in the battery. This can cause distortion, leakage, overheating, explosion or fire.

● **Never use different batteries together.**

Using different batteries together, i.e. different types or old/used and new or those of different manufacturers, can cause distortion, leakage, overheating, explosion or fire because of the differences in battery properties. Please consult Maxell before designing devices that use two or more batteries connected in a series or parallel, even with the same battery type.

● **Never touch liquid leaking from a battery.**

If the liquid enters the eyes or mouth, see Section 4 - First Aid Measures.

● **Never allow battery liquid to come into contact with a naked flame.**

If leakage or a strong odor is detected, keep the battery away from all naked flames. The leaked liquid is inflammable.

● **Never attach a battery to the skin.**

Attaching a battery to the skin using tape, etc. should be avoided. Moisture from the skin can cause battery discharge, which can produce certain chemical substances that burn the skin.

2) Storage

Never let the battery contact with water. Never store the battery in hot and high humid place.

Section 8 - Exposure Controls, Personal Protection

Respiratory Protection	NA
Ventilation	NA
Eye Protection	NA
Protective Gloves	NA
Other protective clothing	NA

Section 9 - Physical/Chemical Characteristics

Coin shape with primary cell of 3V nominal voltage

Section 10 - Stability and Reactivity

Stability: Stable (Performance deterioration depends on circumstance.)

Incompatibility: Water

Hazardous polymerization: Will not occur.

Condition to avoid: See section 7.

Hazardous Decomposition or Byproducts: Hydrogen (By moisture)

Section 11 - Toxicological Information

As the contents are sealed in the battery case, there is no toxicity.

Section 12 - Ecological Information

If the battery is disposed of on land or in water, the battery case may corrode and liquid leak from the battery. Ecological information has not been reported.

Section 13 - Disposal condition

The battery may be regulated by national or local regulation. Please follow the instructions of proper regulation. As electric capacity is left in a discarded battery and it comes into contact with other metals, it could lead to distortion, leakage, overheating, or explosion, so make sure to cover the (+) and (-) terminals with friction tape or some other insulator before disposal.

Section 14 - Transportation Information

1) Shipping Name (UN Number): Lithium metal batteries (UN3090)
   Lithium metal batteries packed with equipment (UN3091)
   Lithium metal batteries contained in equipment (UN3091)
2) Hazard Classification: Class 9 (Miscellaneous)
3) Method of transportation: As the cells are manufactured under a quality management program in an ISO9001 certified factory and the cells meet all the requirements of a UN

manual of tests and criteria, Part III, sub-section 38.3, the applicable packing instructions (PI) or special provisions (SP) are as per the following table.
The cells or batteries classified in Section II of any Packing Instruction or SP 188 may be exempted from Class 9 Dangerous Goods if complying with all requirements of applicable Section II or SP 188. But lithium metal cells and batteries transported as cargo are restricted to Cargo Aircraft Only.

Note. This does not apply to lithium metal batteries packed with equipment (PI 969) or contained in equipment (PI 970).

Li content per cell	Product name	Air *See Section 15 4)			Sea *See Section 15 5)
		Cell only	Cell packed with equipment	Cell contained in equipment	
not more than 0.3 g	CR1216, CR1220, CR1616, CR1620, CR1632, CR2016, CR2025, CR2032, CR2032H	PI968 Section II	PI969 Section II	PI970 Section II	SP188
more than 0.3 g but not more than 1 g	(No)	PI968 Section IB (8 or less cells: Section II)	PI969 Section II	PI970 Section II	SP188
more than 1 g	(No)	PI968 Section IA	PI969 Section I	PI970 Section I	SP230

As specific districts, countries and airlines may establish their own special requirements, the shipper must confirm requirements with the forwarder in advance.

Please confirm the aggregate lithium content when transport the battery.

Section 15 - Regulatory Information

Major applicable regulations for the transportation of lithium metal cells and batteries are as follows:

1) UN(United Nations) Recommendations on the Transport of Dangerous Goods: Model Regulations 20th revised edition
2) UN(United Nations) Recommendations on the Transport of Dangerous Goods: Manual of Test and Criteria
3) International Civil Aviation Organization (ICAO): Technical Instructions for Safety Transport of Dangerous Goods by Air, 2019-2020 Edition
4) International Air Transport Association (IATA): Dangerous Goods Regulations, 60th Edition
5) International Maritime Organization (IMO): International Maritime Dangerous Goods (IMDG) Code, 2018 Edition

Major environmental regulations are as follows:

1) EU Battery Directive 2006/66/EC(2013/56/EU)
2) California Code of regulations, Title 22, Division 4.5, Chapter 33: Best Management Practices for Perchlorate Materials

Section 16 - Other Information

If you want further information, please contact Maxell sales representative.

Ono Works: 5, Takumidai, Ono-shi, Hyogo 675-1322, Japan
Phone: (+81) 794-63-8054 Facsimile: (+81) 794-63-8445 http://www.maxell.co.jp

Packaging test certification

product name : CR2032 XP X	
■ lithium cell or battery	□ lithium-ion cell or battery
■ cell	□ battery(pack)

Designation	Results	Remarks
Drop test (Packing Group Ⅱ : 1.2m)	Accepted	
Package weight shall not exceed 30kg.	Accepted	

Name/title of Signatory

Takashi Kimura / Senior Manager, MD Design Dept.

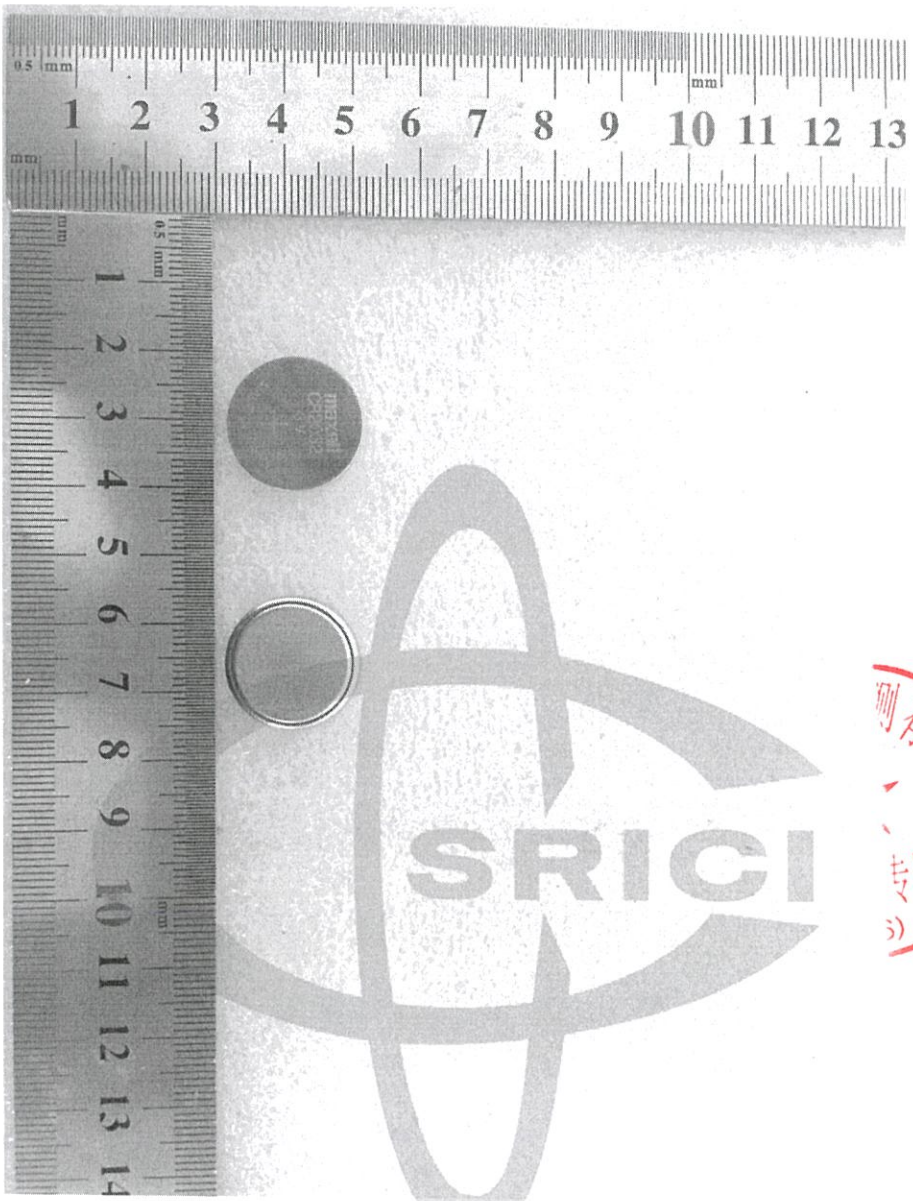
Signature

Jan. 11, 2019

UN38.3 试验概要
UN38.3 Test Summary

811900200635165

单位信息 Company information			
委托单位 Consignor	麦克赛尔亚洲有限公司 Maxell Asia,Ltd. 香港九龙长沙湾道 909 号 13 楼 03B-06 室 Unit Nos. 03B-06, 13F, No. 909 Cheung Sha Wan Road, Cheung Sha Wan, Kowloon, Hong Kong 00852-27309243 desta-ding@maxell.com.hk www.maxell.com.hk		
生产单位 Manufacturer	麦克赛尔株式会社 Maxell.Ltd. 京都府乙訓郡大山崎町大山崎小泉 1 番地 1 Koizumi, Oyamazaki, Oyamazaki-cho, Otokuni-gun, Kyoto 81759564140 fred@whm.com.cn www.maxell.co.jp		
测试单位 Test lab	上海化工研究院检测中心 Shanghai Research Institute of Chemical Industry Testing Center 中国.上海.普陀区云岭东路 345 号,200062 No.345 East Yunling Road, Putuo, Shanghai, China 200062 86-21-31765555 battery@ghs.cn www.ghs.cn		
电池信息 Battery information			
名称 Name	锂电池	品牌 Brand	Maxell
型号 Type	CR2032	原始测试型号 Original tested type	/
标称电压(V) Nominal voltage	3	容量/能量 Capacity/energy	220mAh
描述 Description	不可充电锂金属电池芯 Primary Li-metal cell	锂含量(g) Li content	0.07
质量(kg) Mass	0.00299	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.	1117110153	测试报告日期 Date of test report	2017-12-20
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 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria 38.3		ST/SG/AC.10/11/Rev.6
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)	/

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.638.3 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 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	2019-12-08

-验证码:811786-

报告结束