

報告使用授權書

授權單位：博特科科技(深圳)有限公司

地址：深圳市公明鎮松白工業園 B 區 B1 棟 4 樓

被授權單位：益邏触控系統(蘇州)有限公司

地址：江蘇省蘇州市高新區鹿山路 337 號

授權單位允許被授權單位在上海化工研究院申請《貨物運輸條件鑒定書》時使用下述試驗報告：

序號	報告名稱	報告編號	電池型號	發行日期
1	U.38.3	1113050034	JHT CR2032	2013/08/13
2	1.2M	1116050178	JHT CR2032	2016/05/17
3	MSDS	JHT2016	JHT CR2032	2020/01/01

本授權書有效期為：2019 年 12 月 18 日—2020 年 6 月 30 日。

如果本授權書所述內容和期限與有關法律、法規相悖，致使本授權書不再適用，則該授權書自動失效。

本授權書以及試驗報告和相關證明文件，只適用於上文所訴的申請，不可用於其它用途。

授權單位（蓋章/簽字）：

發行人：



2020 年 1 月 3 日



UN38.3 试验概要

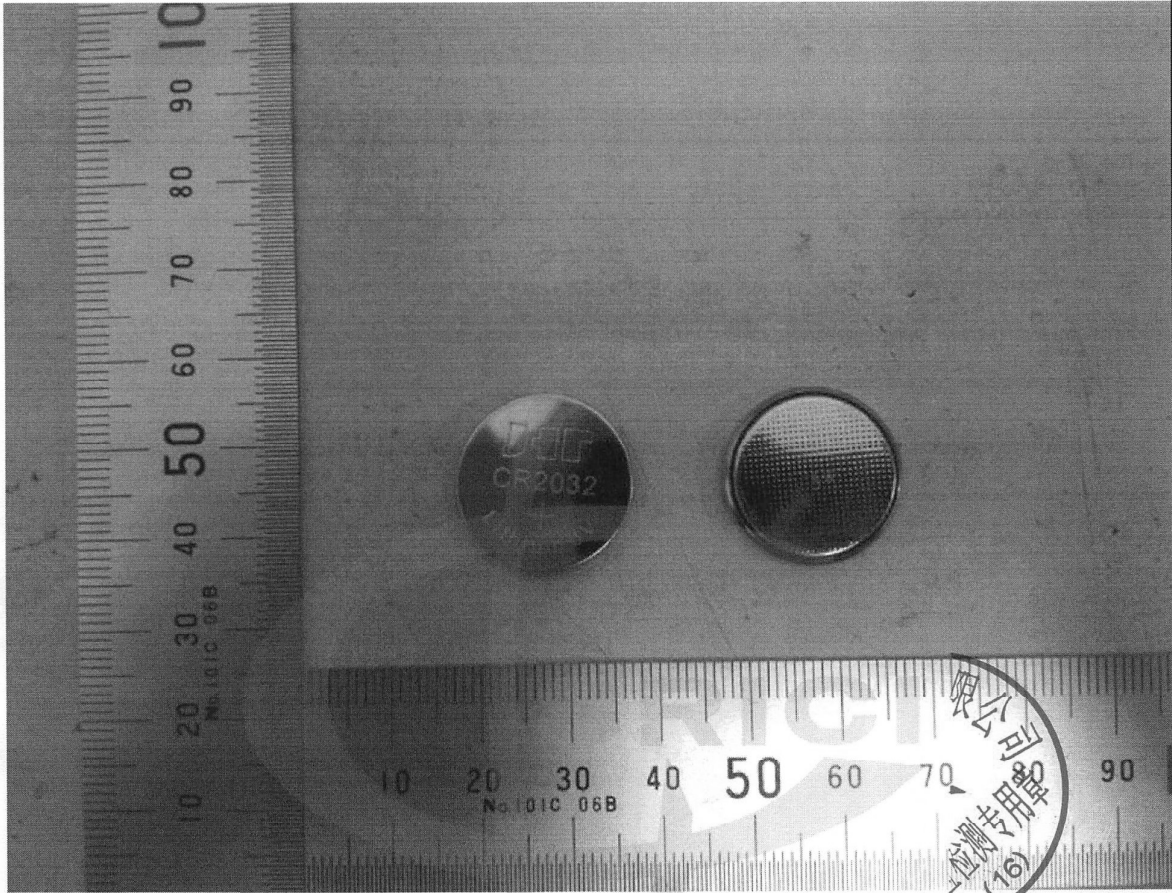
UN38.3 Test Summary



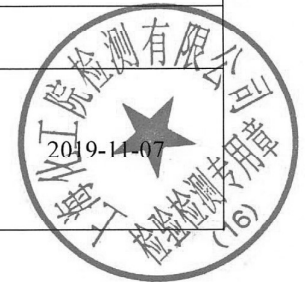
单位信息 Company information			
委托单位 Consignor	博特科科技(深圳)有限公司 Pro-Tek (Shenzhen) Co.,Ltd. 深圳市光明新区公明办事处上村社区明环东路松白工业园 B 区 B1 号厂房 B1 building,Zone B,Songbai Industrial Park.Minghuan East Road,Shangcun Community Gongming office,Gua 0755-27543369 ping_zhao@ptk-energy.com www.jht-energy.com		
生产单位 Manufacturer	博特科科技(深圳)有限公司 Pro-Tek (Shenzhen) Co.,Ltd. 深圳市光明新区公明办事处上村社区明环东路松白工业园 B 区 B1 号厂房 B1 building,Zone B,Songbai Industrial Park.Minghuan East Road,Shangcun Community Gongming office,Gua 0755-27543369 ping_zhao@ptk-energy.com www.jht-energy.com		
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	锂金属电池 Lithium metal battery	品牌 Brand	JHT
型号 Type	CR2032	原始测试型号 Original tested type	/
标称电压(V) Nominal voltage	3.0	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	0.064
质量(kg) Mass	0.0031	外观 Appearance	银色钮扣状 Silvery Button
测试信息 Test information			
原报告编号 Original test report No.	1113050034	测试报告日期 Date of test report	2013-08-13
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.5/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)	/



样品图片 Sample Picture



<p>结论 Conclusion</p>	<p>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.5/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.5/Amend.1 38.3</p>		
<p>备注 Remark</p>	<p>无。None.</p>		
<p>签名 Signature 职务 Title</p>	<p>王寅 副总工程师 Vice chief engineer</p>	<p>签发日期 Issued date</p>	<p>2019-11-07</p>



-验证码:931376-

报告结束



NO.1113050025

检验报告

Test Report

样品名称： 锂离子电池 JHT CR2032 3.0V 220mAh

Name of Sample: JHT LITHIUM BATTERY CR2032 3.0V 220mAh

委托单位： 博特科科技（深圳）有限公司

Consignor: PRO-TEK (shenzhen) Co., Ltd.



国家化学品及制品安全质量监督检验中心
上海化工研究院检测中心
(上海天科化工检测有限公司)
National Supervision & Inspection Centre for Safety Quality
of Chemicals and Chemical Articles
Shanghai Research Institute of Chemical Industry Testing Centre
(Shanghai TECH. Chemical Industry Testing Co.,Ltd)

上海化工研究院检测中心
检验报告

SRICI Testing Centre Test Report

NO. 1113050025

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样品名称 Name of Sample	中文 Chinese	锂金属电池 JHT CR2032 3.0V 220mAh	
	英文 English	JHT LITHIUM BATTERY CR2032 3.0V 220mAh	
样品编号 Sample No.	1113050025		
委托单位 Consignor	博特科科技(深圳)有限公司 PRO-TEK(shenzhen) Co., Ltd.		
生产单位 Manufacturer	PRO-TEK(shenzhen) Co., Ltd. 博特科科技(深圳)有限公司		
检验方法 Test method	联合国《关于危险货物运输的建议书 规章范本》(17th)特殊规定188条款。 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Model Regulations(17th) special provisions 188		
判定标准 Criterion	联合国《关于危险货物运输的建议书 规章范本》(17th)特殊规定188条款。 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Model Regulations(17th) special provisions 188		
样品外观 Appearance	长方形瓦楞纸箱(180mm×140mm×130mm), 内装640个锂电池。 Rectangle corrugated carton(180mm×140mm×130mm), containing 640 lithium batteries.		
样品接受日期 Accepted Date	2013-05-03	检测起始日期 Test Date	2013-05-07 ~ 2013-05-07
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	被测试包装件能够承受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直接接触的移动及没有内容物泄漏; 包装件总重量为2.4kg(毛重)。 The tested 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 or cell to cell contact and without release of contents. The weight of the package is 2.4kg gross mass. 生效日期(Date): 2013-05-07		
备注 Comment	内包装: 塑料托盘。Inner package plastic tray。 该电池上未标注电容量。		
委托单位地址 Consignor Address			(15) 邮政编码 Post Code

批准
Approver:
职务
Title:

张一明

副总工程师(Vice chief engineer)

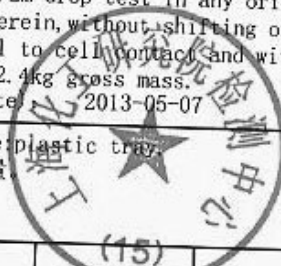
审核
Checker:

陆建峰

编制
Compiler:

周敏

上海化工研究院



上海化工研究院检测中心
检验报告

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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 Number 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》(17th)特殊规定188条 款 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Model Regulations(17th) special provisions 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》(17th)特殊规定188条 款 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Model Regulations(17th) special provisions 188	2.4Kg		合格 Passed	/
检验环境条件 Test Environment Condition		环境温度:21℃;环境湿度:/% Ambient temperature:21℃, 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-附图

SRICI Testing Centre Test Report—Appendix

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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 believed to be accurate as of the date of preparation. However, JHIH HONG makes no warranty expressed or Implied.

Reference No. JHT 2016

Section 1-Product and Company Identification

Product Name: Lithium Manganese Dioxide Batteries		CHEMICAL SYSTEM: Lithium Manganese Dioxide	
Size: ALL	Trade Mark: JHT	Volts: 3 V	
Designed for Recharge: NO		Date of preparation: Jan 01 2020	
Company: JHIH HONG TECHNOLOGY CO.,LTD.		Telephone Numbers: +886-2-22989236	
Address (Number, Street, City, State, and ZIP Code): 6F, No.15, Wu Chuan Road, Wu-Ku Industrial Park, New Taipei 248		Fax Numbers: +886-2-22901657	

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 of fire and cause human injury or equipment trouble. Please strictly observe safety instruction.

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

Section 3- Composition/Information on Ingredients

Ingredient	CAS NO.	Content (wt%)
Lithium	7439-93-2	1.15 to 2.71
Propylene Carbonate	108-32-7	4.1 to 7.0
Manganese dioxide	1313-13-9	16.0 to 37.0
1,2-Dimethoxyethane	110-71-4	2.6 to 5.0
Lithium perchlorate	7791-03-9	0.6 to 1.8
Graphite	7782-42-5、1333-86-4	1.8 to 5.0
Polypropylene	9003-07-0	1.5 to 4.4
Stainless steel	7439-89-6	42.79 to 70.3

Lithium content for each cell

Model	Li content (g)	Model	Li content (g)
CR1216	0.008	CR2032	0.064
CR1220	0.012	CR2320	0.048
CR1225	0.014	CR2354C	0.152
CR1616	0.014	CR2430	0.086
CR1620	0.024	CR2450	0.15
CR1632	0.036	CR2477	0.285
CR2016	0.023	CR3032	0.142
CR2025	0.045		

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 plenty of water. If itch or irritation by chemical bum 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 batteries are burning in a confined space ,use a smothering agent.

Fire fighting procedure Use self-contained breathing apparatus and full protective gear not to inhale harmful gas .

Section 6-Accidental Release Measures

Accidental Releases: Do not breathe vapors or touch liquid with bare hands (see section 4).

Waste Disposal Methods: Evacuate area. If possible, a trained person should attempt to stop or contain the leak by neutralizing spill with soda lime or baking soda. A NIOSH Approved Acid Gas Filter Mask or Self-Contained Breathing Apparatus should be worn. Seal leaking battery and soda lime or baking soda in a plastic bag and dispose of as hazardous waste.

Other: Follow North American Emergency Response Guide (NAERG)#138 for cells involved in an accident, cells that have vented, or have exploded.

Section 7-Handling and Storage

1) Handling

Never swallow. Never reverse the positive and negative terminals when mounting . Never short-circuit the battery. Never heat. Never expose to open flame. Never disassemble. Never weld the terminal or wire to the body of the battery directly. Never touch the liquid leaked out of battery . Never bring fire close to battery liquid. Never keep in touch with battery.

2) Storage

Never let the battery contact with water. Never store the battery in hot and high humid place. Don't push the battery excessively and destroy the battery packaging, often wet and ventilating the dry place to keep in the normal atmospheric temperature, find the unusual battery is dealt with in time

Section 8 – Exposure Controls, Personal Protection

Respiratory Protection		NA
Ventilation	Local Exhaust	NA
	Mechanical	NA
	Special	NA
	Other	NA
Eye Protection		NA
Protective Gloves		NA
Other protective clothing		NA

Section 9 – Physical/Chemical Characteristics

State of matter: Solid state

Form : Button type

Color: True quality of stainless steel

Smell : Tasteless (At the time of the fullness)

Resolve temperature: NA

Spontaneous combustion temperature: NA

Explosion demarcation line : Higher than 170 degrees Centigrade of batteries will be burnt

To the density (Water =1): NA

Dissolving: NA

Boiling Point:	1,2-Dimethoxyethane : 83 °C
Vapor Pressure:	1,2-Dimethoxyethane :6.40(20 °C)
Vapor Density:	1,2-Dimethoxyethane : 3.11
Solubility in Water:	1,2-Dimethoxyethane : :diffluence contact with water
Specific Gravity:	1,2-Dimethoxyethane :1.63
Melting Point:	1,2-Dimethoxyethane :-67 °C
Evaporation Rate:	N/A
Water Reactive:	1,2-Dimethoxyethane : :diffluence contact with water
Appearance & Odor:	1,2-Dimethoxyethane : achromatism liquid; slight aether odor.

Section 10 – Stability and Reactivity

Stability	Stable
Incompatibility	Water
Hazardous polymerization	Will not occur.
Condition to avoid	See section 7.
Hazardous Decomposition or Byproducts	Hydrogen

Section 11 – Toxicological Information

Acute Toxicity:

1,2-Dimethoxyethane:

LC₅₀ (Inhalation): N/A

LD₅₀: N/A

Eye Effects: Corrosive

Skin Effects: Corrosive

Section 12 – Ecological Information

Aquatic Toxicity: Do not let internal components enter marine environments. Avoid releases into waterways, wastewater or groundwater.

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

Lithium Manganese Dioxide Batteries is considered as “Dangerous Goods ” cargo because they complied with IATA Dangerous Goods Regulations 61th Edition of 2020 & Section IB of Packing Instruction PI 968.

Shipping Name(UN Number) Lithium metal batteries(UN3090)
 Lithium metal batteries packed with equipment(UN3091)
 Lithium metal batteries contained in equipment(UN3091)

Hazard Classification Class 9 (Miscellaneous)

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 Sea*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, CR1225, CR1616, CR1620, CR1632, CR2016, CR2025, CR2032, CR2320, CR2354C, CR2430, CR2450, CR2477, CR3032,	PI968 Section II	PI969 Section II	PI970 Section II	SP188
more than 0.3 g but not more than 1 g	(No)	PI 968 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

EC Labeling : None

Risk Phrases :None

Safety Phrases : None

Labeling is not required because batteries are classified as “articles” under the Dangerous Preparations Directive and as such are exempt from the requirements of the Directive.

Section 16-Other Information

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

Note:

- 1) The symbol in above-mentioned materials " ——"representative consult at present it materials not relevant, but symbol "NA" represent field the getting more suitable for material.
- 2) If you want further information, please contact JHIH HONG sales representative.

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