



仅限货机  
CAO



# 运输危险性鉴定书

## Hazard Classification and Identification Report for Transport of Goods

### 危险品

**样品名称 :** 成品配/备件, 纽扣型锂金属电池, 锂金属电池, 纽扣电池, 原电池, 锂电池  
CR2032 (3.0V 225mAh)

**Sample name:** Lithium coin battery CR2032 (3.0V 225mAh)

**委托单位 :** 松下产业科技股份有限公司  
Panasonic Industrial Devices Sales Taiwan Co., Ltd.

**生产单位 :** Panasonic Gobel Energy Indonesia PT.  
Panasonic Gobel Energy Indonesia PT.



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



# 运输危险性鉴定书

NO. 212500600011883

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## Hazard Classification and Identification Report for Transport of Goods

样品名称 Sample Name	中文 Chinese	成品配/备件, 纽扣型锂金属电池, 锂金属电池, 纽扣电池, 原电池, 锂电池 CR2032 (3.0V 225mAh)				
	英文 English	Lithium coin battery CR2032 (3.0V 225mAh)				
委托单位 Applicant	松下产业科技股份有限公司 Panasonic Industrial Devices Sales Taiwan Co., Ltd.					
生产单位 Manufacturer	Panasonic Gobel Energy Indonesia PT. Panasonic Gobel Energy Indonesia PT.					
检验方法、程序 Inspection method and procedure	国际航空运输协会《危险品规则》66版 IATA Dangerous Goods Regulations (DGR) 66th Edition					
样品外观 Sample appearance	银色纽扣状金属外壳 Silvery Button 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	CR2032	225mAh / ≤0.3g	电池单独运输 Battery only	0.0029	800
鉴定结论 IDENTIFICATION CONCLUSION	<p>1. 危险性识别 (Hazards identification)</p> <p>杂项。 Miscellaneous.</p>					
	<p>2. 空运按照国际航空运输协会《危险品规则》办理的类型 (Suggestion according to IATA DGR)</p> <p>Proper Shipping Name: Lithium metal batteries Class or Division: 9 UN Number: UN3090</p>					
鉴定结论 IDENTIFICATION CONCLUSION	<p>3. 包装要求 (Packaging requirements)</p> <p>按包装说明968第IB部分要求办理。 The article is packaged according to the Packaging Instruction 968 section IB.</p> <p>仅限货机 Cargo Aircraft Only</p>					
	<p>检验日期: 2024-11-29      签发日期: 2024-11-29      生效日期: 2025-01-01 Inspection Date:                      Issue Date:                      Effective Date:</p>					
备注 Comment						

批准: 王景

审核: 钱玉婷

主检: 孙倩



# 运输危险性鉴定书

Hazard Classification and Identification Report  
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序号 No.	检验结果及其他事项 Inspection results and other things
1	<p>本鉴定书所述锂电池按照《危险品规则》(66版) 3.9.2.6.1(e)规定的质量管理体系进行制造。 本鉴定书所述锂电池不属于损坏或有缺陷的电池。 本鉴定书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。 Lithium cells and batteries listed in this report were manufactured under the quality management program described in IATA DGR 66th 3.9.2.6.1(e). Lithium cells and batteries listed in this report are not damaged or defective cells or batteries. 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>本鉴定书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。包装件能够承受《危险品规则》所要求的堆码试验。 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. The package has passed the stacking test required in DGR. UN38.3试验概要编号 The UN38.3 Test Summary No. (s) 812200400866404 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, 位于坚固的刚性外包装中。 电池具有适当的防短路措施。 Lithium cells and batteries are packed in inner packagings that completely enclose the cell or battery and placed in a strong rigid outer packaging. 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。 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类锂电池或钠离子电池危险性标签(DGR图7.3.X)外, 每个包装件必须按DGR图7.1.C所示做耐久清晰的电池标记。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。 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。 每个包装件必须贴有“仅限货机”标签(DGR图7.4.B)。 Each package must be durably and legibly marked with the battery mark shown in Figure 7.1.C in IATA DGR in addition to the Class 9-Lithium Battery or Sodium Ion 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. 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. Each package must be labelled with the "Cargo Aircraft Only" label (Figure 7.4.B in IATA DGR).</p>
6	<p>锂电池不得与第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。 Lithium 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>
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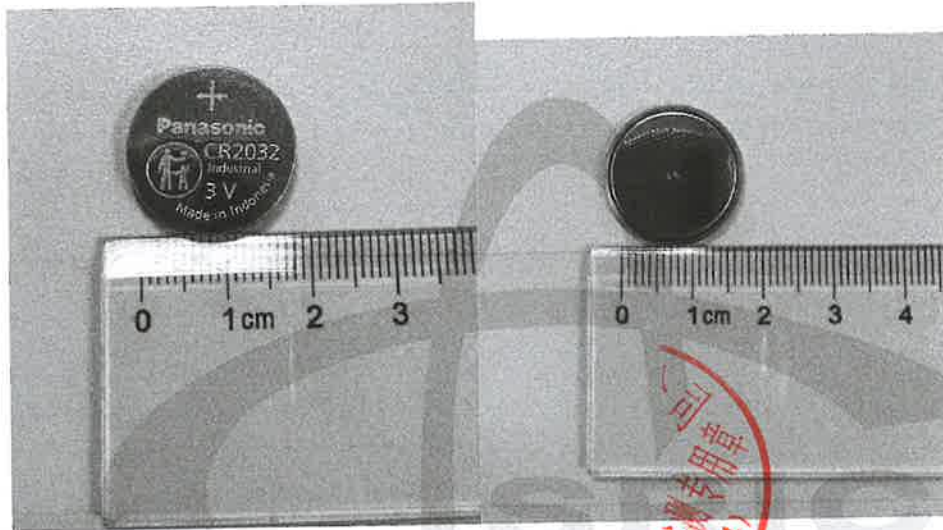
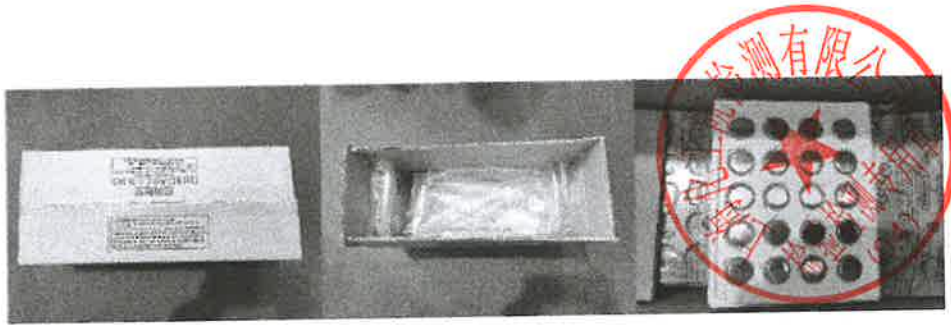
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# 运输危险性鉴定书

## Hazard Classification and Identification Report for Transport of Goods

### 非限制性货物

样品名称 : 成品配/备件, 纽扣型锂金属电池, 锂金属电池, 纽扣电池, 原电池, 锂电池  
CR2032(3.0V 225mAh)

Sample name: Lithium coin battery CR2032(3.0V 225mAh)

委托单位 : 松下产业科技股份有限公司  
Panasonic Industrial Devices Sales Taiwan Co., Ltd.

生产单位 : Panasonic Gobel Energy Indonesia PT.  
Panasonic Gobel Energy Indonesia PT.



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



# 运输危险性鉴定书

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样品名称 Sample Name	中文 Chinese	成品配/备件, 纽扣型锂金属电池, 锂金属电池, 纽扣电池, 原电池, 锂电池 CR2032 (3.0V 225mAh)		
	英文 English	Lithium coin battery CR2032(3.0V 225mAh)		
委托单位 Applicant	松下产业科技股份有限公司 Panasonic Industrial Devices Sales Taiwan Co., Ltd.			
生产单位 Manufacturer	Panasonic Gobel Energy Indonesia PT, Panasonic Gobel Energy Indonesia PT.			
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部分及第1号修改单 JT/T 617-2018 Regulations concerning road transportation of dangerous goods Part 2 and 3, incorporating amendment No. 1			
样品外观 Sample appearance	银色纽扣状金属外壳 Silvery Button 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	CR2032	225mAh / ≤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 subject to JT/T 617-2018 according to special provision 188.			
备注 Comment	3. 包装要求 (Packaging requirements) 无。 None.			
	<p>检验日期: 2024-12-01      签发日期: 2024-12-02      生效日期: 2025-01-01</p> <p>Inspection Date:      Issue Date:      Effective Date:</p>			



批准  
Approver: 毛家

审核  
Checker: 钱玉婷

主检  
Appraiser: 宋翠丹



# 运输危险性鉴定书

Hazard Classification and Identification Report  
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序号 No.	检验结果及其他事项 Inspection results and other things
1	<p>本鉴定书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> <ul style="list-style-type: none"><li>—标明包装件内装有“锂金属”或“锂离子”电池芯或电池组。</li><li>—标明包装件必须小心轻放，如果包装件损坏，有着火的危险。</li><li>—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。</li><li>—了解其它情况的联系方式。</li></ul> <p>Each package shall be marked with the following requirements, and each consignment shall be accompanied with a document including that:</p> <ul style="list-style-type: none"><li>—The package contains “lithium metal” or “lithium ion” cells or batteries.</li><li>—The package must be handled with care and that a flammability hazard exists if the package is damaged.</li><li>—Special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary.</li><li>—Contact information for additional information.</li></ul>
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-验证码:789055-

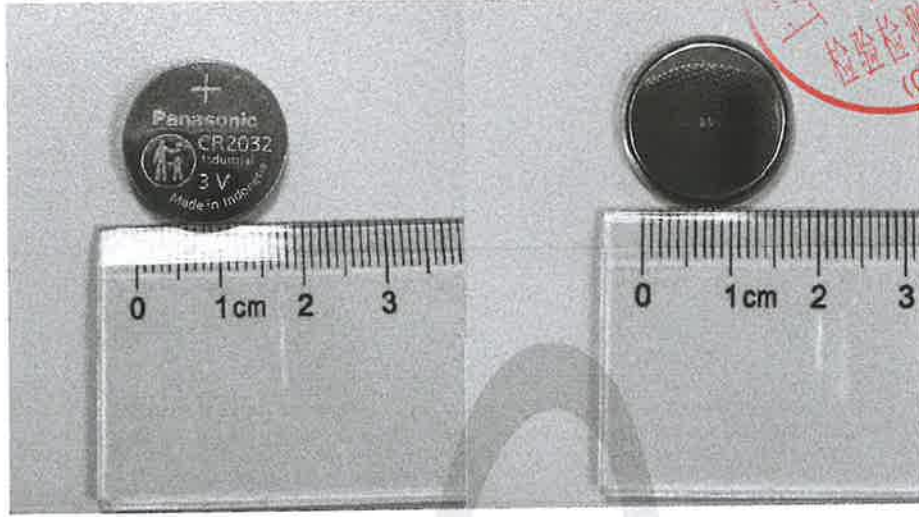


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NO.212500200111271



# 运输危险性鉴定书

## Hazard Classification and Identification Report for Transport of Goods

### 锂电池类物品

样品名称：成品配/备件, 纽扣型锂金属电池, 锂金属电池, 纽扣电池, 原电池, 锂电池  
CR2032 (3.0V 225mAh)

Sample name: Lithium coin battery CR2032 (3.0V 225mAh)

委托单位：松下产业科技股份有限公司  
Panasonic Industrial Devices Sales Taiwan Co., Ltd.

生产单位：Panasonic Gobel Energy Indonesia PT.  
Panasonic Gobel Energy Indonesia PT.



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



# 运输危险性鉴定书

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样品名称 Sample Name	中文 Chinese	成品配/备件, 纽扣型锂金属电池, 锂金属电池, 纽扣电池, 原电池, 锂电池 CR2032 (3.0V 225mAh)		
	英文 English	Lithium coin battery CR2032 (3.0V 225mAh)		
委托单位 Applicant	松下产业科技股份有限公司 Panasonic Industrial Devices Sales Taiwan Co., Ltd.			
生产单位 Manufacturer	Panasonic Gobel Energy Indonesia PT. Panasonic Gobel Energy Indonesia PT.			
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》(2022版) IMO International Maritime Dangerous Goods Code (2022 Edition)			
样品外观 Sample appearance	银色纽扣状金属外壳 Silvery Button 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	CR2032	225mAh / ≤0.3g	电池单独运输 Battery only
鉴定 结论	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》办理的类型 (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: Inspection Date:		2024-11-25	签发日期: Issue Date:	2024-11-27
			生效日期: Effective Date:	2025-01-01
备注 Comment	/			

批准  
Approver: 毛宗

审核  
Checker: 钱玉婷

主检  
Appraiser: 宋翠丹



# 运输危险性鉴定书

Hazard Classification and Identification Report  
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序号 No.	检验结果及其他事项 Inspection results and other things
1	<p>本鉴定书所述锂电池按照《国际海运危险货物规则》(2022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 2022 EDITION 2.9.4.5.</p>
2	<p>本鉴定书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) 812200400866404 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1B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。注:《国际海运危险货物规则》(2020版)5.2.1.10中显示电话号码附加信息的锂电池标记, 可继续使用至2026年12月31日。 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 1B 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. Note: The mark shown in 5.2.1.10(lithium battery mark) of the IMDG CODE 2020 EDITION, showing the telephone number for additional information, may continue to be applied until 31 December 2026.</p>
6	/
7	/

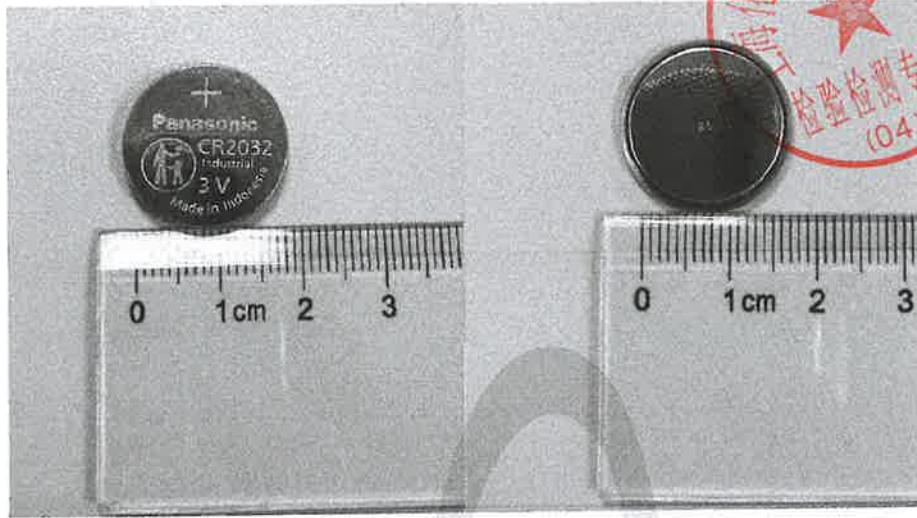
-验证码:443287-

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\*\*\*报告结束\*\*\*

## 授权书兼联络书

致：上海化工院检测有限公司

首先感谢贵院一直以来对我公司的大力支持！

当前我公司应以下授权书所列客户的要求，给予发行授权书；

日后，该客户到贵院申请『UN38.3 试验概要』『货物运输条件鉴定书』及相关证书，授权该公司使用我司签发的资料（电池 UN38.3 检测报告，1.2 米跌落测试报告，货物运输条件鉴定书）时请求给予受理此申请业务，再次拜托。

パナソニック エナジー株式会社  
Panasonic Energy Co., Ltd.  
エナジーデバイス事業部  
Energy Device Business Division  
技術部門  
Engineering Department

岡田忠也

2024-8-3

## 授权书

致：上海化工院检测有限公司

兹有我公司提供的如下表所示型号的电池 UN38.3 检验报告，1.2 米跌落测试报告，现授权 冠捷电子科技（福建）有限公司 使用。  
特此证明。

型号	文书名称	文书编号
CR-2032L/BN	UN38.3 检验报告	CP0008-12
CR-2032L/BN	1.2 米落下试验报告	CPC160028-1

补充说明：我司于 2022 年 4 月 1 开始，公司名变更为松下新能源株式会社（Panasonic Energy Co., Ltd.）。2022 年 3 月 31 日之前，旧公司松下电器株式会社（Panasonic Corporation）名义发行的实验结果与法律责任由新公司松下新能源株式会社全部继承。望理解。

松下电器产业株式会社  
检验报告パナソニック株式会社  
エナジーデバイス事業部

Panasonic Corporation - Test Report

No. CP0008-12

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样品名称 Name of Sample	中文 Chinese	锂电池 CR2032 (3.0V 225mAh)		
	英文 English	Lithium Battery CR2032 (3.0V 225mAh)		
送检单位 Consignor	松下电器产业株式会社/ Panasonic Corporation			
生产单位 Manufacturer	松下电器产业株式会社/ PT. Panasonic Gobel Energy Indonesia			
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	硬币形 Coin type			
检测起迄日期 Test Date	2019/6/21 - 2020/6/29	样品编号 Sample No	/	
检测项目 Test Items	高度模拟试检; 热测试; 振动试检; 冲击试检; 外短路试检; 压坏试检; 强制放电试检 Altitude simulation, Thermal test, Vibration test, Shock, External short circuit, Crush, Forced discharge			
检验结论 Conclusion	受检样品通过 UN38.3检测, 检测合格。 The sample has passed the test items of UN38.3. 日期(date):2020年(y) 6月(m) 29日(d)			
备注 Remark	/			
受检单位地址 Consignor Address	日本:大阪府守口市松下町1番1号 1-1 Matsushita-cho, Moriguchi City Osaka, Japan		邮政编码 Post Code	570-8511

批准人职务(the title of approver):

- 质量保证部长(Director of Quality Assurance)  
 质量保证科长(Manager of Quality Assurance)  
 质量保证主任工程师(Chief Engineer of QA)

批准 Approver: W. Amano审核 Checker: J. Yano主检 Appraiser: S. Shimakawa

松下电器产业株式会社  
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Panasonic Corporation - Test Report

No. CP0008-12

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序号 No	检测项目 Name of Test Items	标准要求或标准款号 Standard Requirement or the Clause Number of Standard	检验结果 Test Result	本项结论 Test Conclusion	备注 Remark
1	高度模拟试检 Altitude simulation	试检和标准手册 38.3(6 <sup>th</sup> Amd1) 38.3 Test T-1 UN Manual of Tests and Criteria Section (6 <sup>th</sup> Amd1) 38.3 Test T-1	见附表1 See Appendix 1	合格 Passed	/
2	热测试检 Thermal test	试检和标准手册 38.3(6 <sup>th</sup> Amd1) 38.3 Test T-2 UN Manual of Tests and Criteria Section (6 <sup>th</sup> Amd1) 38.3 Test T-2	见附表2 See Appendix 2	合格 Passed	/
3	振动试检 Vibration test	试检和标准手册 38.3(6 <sup>th</sup> Amd1) 38.3 Test T-3 UN Manual of Tests and Criteria Section (6 <sup>th</sup> Amd1) 38.3 Test T-3	见附表3 See Appendix 3	合格 Passed	/
4	冲击试检 Shock	试检和标准手册 38.3(6 <sup>th</sup> Amd1) 38.3 Test T-4 UN Manual of Tests and Criteria Section (6 <sup>th</sup> Amd1) 38.3 Test T-4	见附表4 See Appendix 4	合格 Passed	/
5	外短路试检 External short circuit	试检和标准手册 38.3(6 <sup>th</sup> Amd1) 38.3 Test T-5 UN Manual of Tests and Criteria Section (6 <sup>th</sup> Amd1) 38.3 Test T-5	见附表5 See Appendix 5	合格 Passed	/
6	压坏试检 Crush	试检和标准手册 38.3(6 <sup>th</sup> Amd1) 38.3 Test T-6 UN Manual of Tests and Criteria Section (6 <sup>th</sup> Amd1) 38.3 Test T-6	见附表6 See Appendix 6	合格 Passed	/
7	强制放电试检 Forced discharge	试检和标准手册 38.3(6 <sup>th</sup> Amd1) 38.3 Test T-8 UN Manual of Tests and Criteria Section (6 <sup>th</sup> Amd1) 38.3 Test T-8	见附表7 See Appendix 7	合格 Passed	/
检验环境条件 / Test Environment Condition			环境温度: 15-25°C / Ambient Temperature: 15-25°C		
分包检验状况 Subcontracted Test Condition	检测项目 Test Items	/			
	分包实验室 Subcontracted Laboratory	名称 Name	/	邮编 Post Code	/
		地址 Address	/	电话 Tel	/

松下电器产业株式会社  
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-----附表1

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Appendix 1

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序号 No.	T-1	检测项目名称 Name of Test Items		高度模拟试检 Altitude simulation				
		试检前 Before		试检后 After		质量 Mass Loss (%)	剩余电压 Residual OCV (%)	其他 现象 Other Event
样品 号码 Sample No.	样品状态 Sample State	质量 Mass (g)	开路电压 OCV (V)	质量 Mass (g)	开路电压 OCV (V)			
1	未放电 Undischarged	2.818	3.192	2.820	3.211	0.00	100.6	0
2	未放电 Undischarged	2.823	3.190	2.823	3.210	0.00	100.6	0
3	未放电 Undischarged	2.829	3.188	2.829	3.209	0.00	100.7	0
4	未放电 Undischarged	2.811	3.187	2.810	3.207	0.04	100.6	0
5	未放电 Undischarged	2.833	3.191	2.832	3.211	0.04	100.6	0
6	未放电 Undischarged	2.807	3.190	2.806	3.209	0.04	100.6	0
7	未放电 Undischarged	2.834	3.199	2.835	3.217	0.00	100.6	0
8	未放电 Undischarged	2.826	3.189	2.826	3.208	0.00	100.6	0
9	未放电 Undischarged	2.821	3.190	2.820	3.210	0.04	100.6	0
10	未放电 Undischarged	2.813	3.189	2.812	3.208	0.04	100.6	0
11	完全放电 Fully Discharged	2.837	-	2.837	-	0.00	-	0
12	完全放电 Fully Discharged	2.832	-	2.831	-	0.04	-	0
13	完全放电 Fully Discharged	2.821	-	2.821	-	0.00	-	0
14	完全放电 Fully Discharged	2.830	-	2.829	-	0.04	-	0
15	完全放电 Fully Discharged	2.816	-	2.816	-	0.00	-	0
16	完全放电 Fully Discharged	2.824	-	2.825	-	0.00	-	0
17	完全放电 Fully Discharged	2.813	-	2.814	-	0.00	-	0
18	完全放电 Fully Discharged	2.828	-	2.829	-	0.00	-	0
19	完全放电 Fully Discharged	2.821	-	2.822	-	0.00	-	0
20	完全放电 Fully Discharged	2.820	-	2.820	-	0.00	-	0

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, 0-无漏液, 无漏气, 无解体, 无破裂, 无起火  
 Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, 0-No leakage, no venting, no disassembly, no rupture & no fire.



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-----附表2

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Appendix 2

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序号 No.	T-2	检测项目名称 Name of Test Items		热测试检 Thermal test				
		试检前 Before		试检后 After		质量 Mass Loss (%)	剩余电压 Residual OCV (%)	其他 现象 Other Event
样品 号码 Sample No.	样品状态 Sample State	质量 Mass (g)	开路电压 OCV (V)	质量 Mass (g)	开路电压 OCV (V)			
1	未放电 Undischarged	2.820	3.211	2.819	3.228	0.04	100.5	0
2	未放电 Undischarged	2.823	3.210	2.823	3.230	0.00	100.6	0
3	未放电 Undischarged	2.829	3.209	2.829	3.227	0.00	100.6	0
4	未放电 Undischarged	2.810	3.207	2.808	3.228	0.07	100.7	0
5	未放电 Undischarged	2.832	3.211	2.833	3.229	0.00	100.6	0
6	未放电 Undischarged	2.806	3.209	2.806	3.228	0.00	100.6	0
7	未放电 Undischarged	2.835	3.217	2.834	3.232	0.04	100.5	0
8	未放电 Undischarged	2.826	3.208	2.826	3.227	0.00	100.6	0
9	未放电 Undischarged	2.820	3.210	2.821	3.230	0.00	100.6	0
10	未放电 Undischarged	2.812	3.208	2.813	3.227	0.00	100.6	0
11	完全放电 Fully Discharged	2.837	-	2.837	-	0.00	-	0
12	完全放电 Fully Discharged	2.831	-	2.830	-	0.04	-	0
13	完全放电 Fully Discharged	2.821	-	2.821	-	0.00	-	0
14	完全放电 Fully Discharged	2.829	-	2.830	-	0.00	-	0
15	完全放电 Fully Discharged	2.816	-	2.815	-	0.04	-	0
16	完全放电 Fully Discharged	2.825	-	2.824	-	0.04	-	0
17	完全放电 Fully Discharged	2.814	-	2.813	-	0.04	-	0
18	完全放电 Fully Discharged	2.829	-	2.829	-	0.00	-	0
19	完全放电 Fully Discharged	2.822	-	2.821	-	0.04	-	0
20	完全放电 Fully Discharged	2.820	-	2.820	-	0.00	-	0

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, 0-无漏液, 无漏气, 无解体, 无破裂, 无起火  
Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, 0-No leakage, no venting, no disassembly, no rupture & no fire.

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-----附表3

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Appendix 3

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序号 No.	T-3	检测项目名称 Name of Test Items		振动试检 Vibration Test				
		试检前 Before		试检后 After		质量 Mass Loss (%)	剩余电压 Residual OCV (%)	其他 现象 Other Event
样品 号码 Sample No.	样品状态 Sample State	质量 Mass (g)	开路电压 OCV (V)	质量 Mass (g)	开路电压 OCV (V)			
1	未放电 Undischarged	2.819	3.228	2.819	3.229	0.00	100.0	0
2	未放电 Undischarged	2.823	3.230	2.822	3.231	0.04	100.0	0
3	未放电 Undischarged	2.829	3.227	2.828	3.228	0.04	100.0	0
4	未放电 Undischarged	2.808	3.228	2.809	3.229	0.00	100.0	0
5	未放电 Undischarged	2.833	3.229	2.833	3.230	0.00	100.0	0
6	未放电 Undischarged	2.806	3.228	2.806	3.229	0.00	100.0	0
7	未放电 Undischarged	2.834	3.232	2.834	3.233	0.00	100.0	0
8	未放电 Undischarged	2.826	3.227	2.826	3.228	0.00	100.0	0
9	未放电 Undischarged	2.821	3.230	2.821	3.231	0.00	100.0	0
10	未放电 Undischarged	2.813	3.227	2.813	3.228	0.00	100.0	0
11	完全放电 Fully Discharged	2.837	-	2.837	-	0.00	-	0
12	完全放电 Fully Discharged	2.830	-	2.831	-	0.00	-	0
13	完全放电 Fully Discharged	2.821	-	2.821	-	0.00	-	0
14	完全放电 Fully Discharged	2.830	-	2.830	-	0.00	-	0
15	完全放电 Fully Discharged	2.815	-	2.816	-	0.00	-	0
16	完全放电 Fully Discharged	2.824	-	2.824	-	0.00	-	0
17	完全放电 Fully Discharged	2.813	-	2.813	-	0.00	-	0
18	完全放电 Fully Discharged	2.829	-	2.828	-	0.04	-	0
19	完全放电 Fully Discharged	2.821	-	2.821	-	0.00	-	0
20	完全放电 Fully Discharged	2.820	-	2.820	-	0.00	-	0

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, 0-无漏液, 无漏气, 无解体, 无破裂, 无起火  
 Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, 0-No leakage, no venting, no disassembly, no rupture & no fire.

松下电器产业株式会社  
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-----附表4

Panasonic Corporation - Test Report

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Appendix 4

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序号 No.	T-4	检测项目名称 Name of Test Items		冲击试检 Shock Test				
		试检前 Before		试检后 After		质量 Mass Loss (%)	剩余电压 Residual OCV (%)	其他 现象 Other Event
样品 号码 Sample No.	样品状态 Sample State	质量 Mass (g)	开路电压 OCV (V)	质量 Mass (g)	开路电压 OCV (V)			
1	未放电 Undischarged	2.819	3.229	2.819	3.234	0.00	100.2	0
2	未放电 Undischarged	2.822	3.231	2.822	3.234	0.00	100.1	0
3	未放电 Undischarged	2.828	3.228	2.829	3.231	0.00	100.1	0
4	未放电 Undischarged	2.809	3.229	2.810	3.232	0.00	100.1	0
5	未放电 Undischarged	2.833	3.230	2.833	3.233	0.00	100.1	0
6	未放电 Undischarged	2.806	3.229	2.806	3.232	0.00	100.1	0
7	未放电 Undischarged	2.834	3.233	2.834	3.236	0.00	100.1	0
8	未放电 Undischarged	2.826	3.228	2.825	3.231	0.04	100.1	0
9	未放电 Undischarged	2.821	3.231	2.821	3.234	0.00	100.1	0
10	未放电 Undischarged	2.813	3.228	2.812	3.231	0.04	100.1	0
11	完全放电 Fully Discharged	2.837	-	2.837	-	0.00	-	0
12	完全放电 Fully Discharged	2.831	-	2.831	-	0.00	-	0
13	完全放电 Fully Discharged	2.821	-	2.821	-	0.00	-	0
14	完全放电 Fully Discharged	2.830	-	2.830	-	0.00	-	0
15	完全放电 Fully Discharged	2.816	-	2.816	-	0.00	-	0
16	完全放电 Fully Discharged	2.824	-	2.824	-	0.00	-	0
17	完全放电 Fully Discharged	2.813	-	2.814	-	0.00	-	0
18	完全放电 Fully Discharged	2.828	-	2.828	-	0.00	-	0
19	完全放电 Fully Discharged	2.821	-	2.821	-	0.00	-	0
20	完全放电 Fully Discharged	2.820	-	2.820	-	0.00	-	0

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, 0-无漏液, 无漏气, 无解体, 无破裂, 无起火  
 Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, 0-No leakage, no venting, no disassembly, no rupture & no fire.

松下电器产业株式会社  
检验报告

-----附表5

Panasonic Corporation - Test Report  
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序号 No.	T-5	检测项目名称 Name of Test Items	外短路试检 External short circuit
样品号码 Sample No.	样品状态 Sample State	样品表面最高温度 Max. External Temperature(°C)	其他现象 Other Event
1	未放电 Undischarged	65.5	0
2	未放电 Undischarged	65.6	0
3	未放电 Undischarged	64.8	0
4	未放电 Undischarged	64.6	0
5	未放电 Undischarged	65.5	0
6	未放电 Undischarged	65.6	0
7	未放电 Undischarged	65.4	0
8	未放电 Undischarged	64.6	0
9	未放电 Undischarged	64.0	0
10	未放电 Undischarged	63.9	0
11	完全放电 Fully Discharged	58.1	0
12	完全放电 Fully Discharged	58.1	0
13	完全放电 Fully Discharged	58.0	0
14	完全放电 Fully Discharged	58.3	0
15	完全放电 Fully Discharged	58.1	0
16	完全放电 Fully Discharged	58.1	0
17	完全放电 Fully Discharged	58.0	0
18	完全放电 Fully Discharged	58.0	0
19	完全放电 Fully Discharged	58.3	0
20	完全放电 Fully Discharged	58.1	0
备注: D-解体, R-破裂, F-起火, 0-无解体, 无破裂, 无起火 Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, 0-No leakage, no venting, no disassembly, no rupture & no fire.			





## 松下电器产业株式会社 检验报告

パナソニック株式会社  
オートモーティブ&インダストリアルシステムズ社  
エナジーデバイス事業部

Panasonic Corporation - Test Report

No .CPC160028-1

共2页第1页

样品名称 Name of Sample	中文 Chinese	锂电池 CR-2032L/BN	
	英文 English	Lithium Battery CR-2032L/BN	
送检单位 Consignor	松下电器产业株式会社/ Panasonic Corporation		
生产单位 Manufacturer	松下电器产业株式会社/ PT. Panasonic Gobel Energy Indonesia		
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"		
样品外觀 Appearance	淡茶颜色直方形纸箱 Cardboard Box of Rectangular Solid of Light Brown		
检测起迄日期 Test Date	2014/11/27	样品编号 Sample No	/
检测项目 Test Items	1.2米跌落试验、包装件毛重测试 1.2m Drop Test、Gross Weight Measure		
检验结论 Conclusion	受检样品通过所有项目检测，检测结果合格。 The sample has passed all of the testing items.  签发日期(date):2014年(y)11月(m) 28日(d)		
备注 Remark	/		
受检单位地址 Consignor Address	日本:大阪府守口市松下町1番1号 1-1 Matsushita-cho, Moriguchi City Osaka, Japan	邮政编码 Post Code	570-8511

批准人职务(the title of approver):

- 质量保证部长(Director of Quality Assurance)
- 质量保证科长(Manager of Quality Assurance)
- 质量保证主任工程师(Chief Engineer of QA)

批准 Approver: J. Okamoto

审核 Checker: [Signature]

主检 Appraiser: S. Arita

28. Nov. 2014 No.1

Panasonic Confidential

## 松下电器产业株式会社 检验报告

Panasonic Corporation - Test Report

No .CPC160028-1

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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 test 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, and 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, and 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, and the contents are not damaged and not shifted.		
2	包装件 毛重测试 Gross Weight Measure	规章范本 (15th) 3.3章188条款  UN Model Regulations(15th) SPECIAL PROVISION 188	Weight of 1box : 1.5kg(Gross)		合格 Passed	/
检验环境条件 test environment condition		环境温度: 25deg-C Ambient temperature: 25deg-C				
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	/





**4 First aid measures** (in case of electrolyte leakage from the battery)

- Eye contact : Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing. Get immediate medical treatment. If appropriate procedures are not taken, this may cause eye injury.
- Skin contact : Wash the affected area under tepid running water using a mild soap. If appropriate procedures are not taken, this may cause sores on the skin. Get medical attention if irritation develops or persists.
- Inhalation : Remove to fresh air immediately. Get medical treatment immediately.

**5 Firefighting measures**

- Fire extinguishing agent : Alcohol-resistant foam and dry sand are effective.
- Extinguishing method : Be sure on the windward to extinguish the fire, since vapor may make eyes, nose and throat irritate, Wear the respiratory protection equipment in some cases.

**6 Accidental release measures** (in case of electrolyte leakage from the battery)

- Take up with absorbent cloth, treat cloth as inflammable.  
Move the battery away from the fire.

**7 Handling and storage**

- Handling :
- When packing the batteries, do not allow battery terminals to contact each other, or contact with other metals. Be sure to pack batteries by providing partitions in the packaging box, or in a separate plastic bag so that the single batteries are not mixed together.
  - Use strong material for packaging boxes so that they will not be damaged by vibration, impact, dropping and stacking during their transportation.
  - Do not short-circuit, recharge, deform, throw into fire or disassemble.
  - Do not mix different type of batteries.
  - Do not solder directly onto batteries.
  - Insert the battery correctly in electrical equipment.
- Storage :
- Do not let water penetrate into packaging boxes during their storage and transportation.
  - Do not store the battery in places of the high temperature or under direct sunlight.
  - Please also avoid the places of high humidity. Be sure not to expose the battery to condensation, rain or frozen condition

**8. Exposure controls and personal protection**

Acceptable concentration : Not specified about Lithium Battery.

Facilities : Nothing in particular.

Protective Equipment (in case of electrolyte leakage from the battery)

Respiratory Protection : For most condition no respiratory protection.

Hand Protection : Safety gloves.

Eye Protection : Safety goggle

**9. Physical and chemical properties**

Appearance : Coin shape

Nominal Voltage : 3 V

**10. Stability and reactivity**

Since batteries utilize a chemical reaction they are actually considered a chemical product.

As such, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, the various usage conditions such as discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage.

**11. Toxicological information**

Swallowing can lead to chemical burns, perforation of soft tissue, and death. Severe burns can occur within 2 hours of ingestion. Seek medical attention immediately.

**12. Ecological information**

In case of the worn out battery was disposed in land, the battery case may be corroded, and leak electrolyte. However, there is no environmental impact information.

Mercury (Hg), Cadmium (Cd) and Lead (Pb) are not used in cell.

**13. Disposal considerations**

When the battery is worn out, dispose of it under the ordinance of each local government.

**14. Transport information****Handling**

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 dropped or damaged.

UN Number, UN Class : UN3090, Class9 (for the Air transport by PI968 Section IA or IB)

: Exemption (for the Marine transport SP188 and the Air transport by Section II of PI 969 or 970)

Even though the cells are classified as lithium metal batteries (UN3090 or UN3091), they are not subject to some requirements of Dangerous Goods Regulations because they meet the following:

1. for cells, the lithium content is not more than 1 g ;
2. each cell is of the type proven to meet the requirements of each test

- in the UN Manual of Tests and Criteria, Part , sub-section 38.3 ;
- 3. each cell is manufactured in ISO9001 certified factory ;
- 4. the test summary is available from ;  
<https://energy.panasonic.com/global/business/e/na/downloads/test-summary>

Please refer to the following reference information about concrete ways of transportation. Actual content of packaging label and shipping documents varies by shipping companies. Make sure to confirm in advance with your shipping company.

Information of reference

	Reference	Packing Instruction(PI)/ Special provision(SP)	Note
Air transport	IATA DGR	PI 968 Section A	Cells, Cargo Aircraft only; Net quantity per package Max. 35kg
		PI 968 Section B	Cells, Cargo Aircraft only; net quantity per package Max. 2.5kg
		PI 969 Section	Cells packed with equipment
		PI 970 Section	Cells contained in equipment, button cell batteries
Marine transport	IMDG Code	SP 188	

**15. Regulatory information**

- IATA Dangerous Goods Regulations Edition 66 (IATA DGR)
- IMO International Maritime Dangerous Goods Code 2022 and 2024 Edition (IMDG Code)
- UN Recommendations on the Transportation of Dangerous Goods, Model Regulations
- UN Recommendations on the Transportation of Dangerous Goods, Manual of Tests and Criteria
- EU Battery Directive (2006/66/EC, 2013/56/EU)
- EU Battery Regulation (Regulation (EU) 2023/1542 of the European Parliament and of the Council)
- EU REACH Regulation (Regulation (EC) No. 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals)
- State of California Regulations - Best management practices for Perchlorate Materials
- Act on Preventing Environmental Pollution of Mercury (Japan)

**16. Other information**

This PSDS is provided to customers as reference information in order to handle batteries safely. It is necessary for the customer to take appropriate measures depending on the actual situation such as the individual handling, based on this information.

In California only, packages that contain CR lithium coin cells and the Owners/Operating Instructions of products that contain CR lithium coin cells must include the following statement: "Perchlorate Material - special handling may apply,

See <http://www.dtsc.ca.gov/hazardouswaste/perchlorate>".

The effective date for this Perchlorate label is July 1, 2006 for non-consumer products and January 1, 2007 for consumer products.

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