

# Test Report

No.: EGZ2205060066C05701R

Date: May. 19, 2022

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**Applicant** : SHENZHEN YUANYIN ELECTRONIC TECHNOLOGY CO., LTD

**Address** : 710, UNIT 3, 34 DAHE, INDUSTRIAL ZONE, GUANCHENG COMMUNITY, GUANHU STREET, LONGHUA DISTRICT, SHENZHEN

**Sample Name** : Polymer lithium-ion battery

**Model** : 651730

**Received Date** : May. 06, 2022

**Test Period** : May. 06, 2022~ May. 19, 2022

**Test Requested** : As requested by client, according to Directive 2006/66/EC and its Article 4 amendment of Directive 2013/56/EU, to determine heavy metals content in the submitted sample.

**Test Results** : Please refer to next page(s).

## Executive Summary:

### STANDARD

### CONCLUSION

Directive 2006/66/EC and its Article 4 amendment of Directive 2013/56/EU - Heavy Metals Content in Batteries and Accumulators

PASS

Prepared by:

  
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Assistant engineer

Reviewed by:

  
Sun Wei, Ethan

Technical supervisor

Signed for and on behalf of  
EMTEK(Guangzhou) Co., Ltd.

Approved by:

  
Yu Chunhua, Jay Yu

Authorized signatory  
May. 19, 2022

Test results are only responsible for delivered samples. This test report is issued by the company and is intended for your exclusive use. This test report includes all of the tests requested by you and the results thereof based upon the information that you provided. You have 30 days from date of issuance of this test report to notify us of any error or omission caused by our negligence. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



# Test Report

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## Test Sample List:

| Sample No. | Sample Description |
|------------|--------------------|
| 1          | Lithium battery    |

## Test Results:

### Directive 2006/66/EC and its Article 4 amendment of Directive 2013/56/EU - Heavy Metals Content in Batteries and Accumulators

Test Method : With reference to IEC 62321-4:2013+A1:2017 & IEC 62321-5:2013, analysis was performed by ICP-OES.

| Test Item(s) | Limit  | Unite | MDL    | Result(s) |
|--------------|--------|-------|--------|-----------|
|              |        |       |        | 1         |
| Cadmium (Cd) | 0.002  | %     | 0.0002 | ND        |
| Mercury (Hg) | 0.0005 | %     | 0.0001 | ND        |
| Lead (Pb)    | -      | %     | 0.0002 | ND        |

- Remark :
- (1) 1 mg/kg = 0.0001%
  - (2) MDL = Method Detection Limit
  - (3) ND = Not Detected (Less than MDL)
  - (4) "-" = Not Regulated
  - (5) Results shown are of total weight of the battery sample.
  - (6) According to the Directive 2006/66/EC and its Article 4 amendment of Directive 2013/56/EU, all types of battery shall include the chemical symbol Lead when containing more than 0.004% of Pb.

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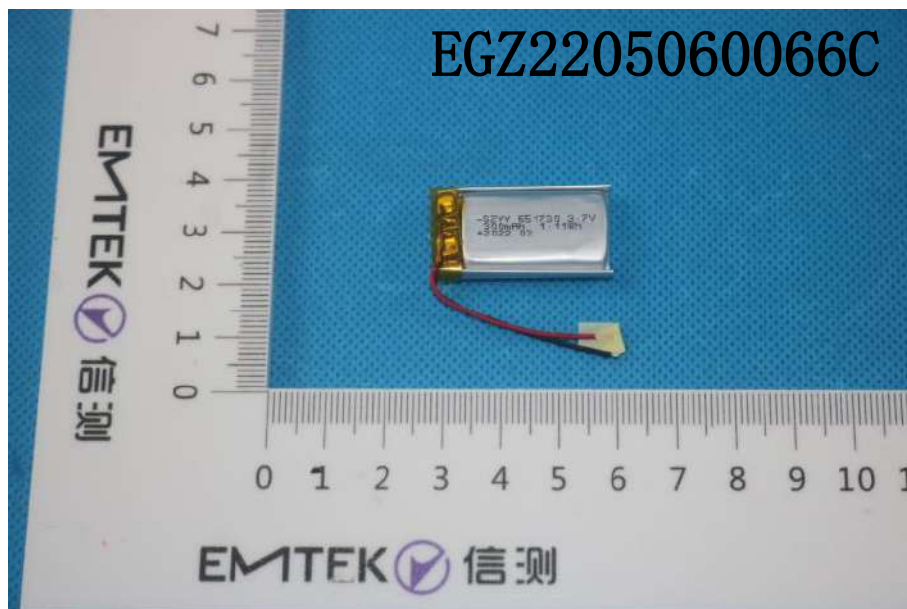
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## Sample Photo:



\*\*\* End of Report \*\*\*

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中国认可  
检验  
INSPECTION  
CNAS IB0071



NO.2622010484

# SAFETY DATASHEET

**Product Name:** Polymer Li-ion battery 651730 3.7V  
300mAh 1.11Wh

**Effective Date:** 2022-01-21

**Compiler:** Zhoujuefei

**Checker:** Liu Lintin

**Approver:** Zhangxiaojin



Shanghai Institute of Chemical Industry Testing Co., Ltd.



## Shenzhen Yuanyin Electronic Technology Co., Ltd.

## SAFETY DATA SHEET

**Polymer Li-ion battery 651730 3.7V 300mAh 1.11Wh**

## SECTION1 PRODUCT AND COMPANY IDENTIFICATION

**Product name:** Polymer Li-ion battery 651730 3.7V 300mAh 1.11Wh  
**Company:** Shenzhen Yuanyin Electronic Technology Co., Ltd.  
**Address:** Unit 710, Unit 3, No. 34, Daiwa Industrial Zone, Guancheng Community, Guanhu Street, Longhua District, Shenzhen City, Guangdong Province, 518110, P.R.China  
**Email:** 271262030@qq.com  
**Fax:** 86-755-29483965  
**Emergency Phone:** 86-755-29483965  
**Recommend use of the chemical and restrictions on use:** /

**SDS Number:** 2622010484  
**Effective Date:** 2022-01-21

## SECTION2 HAZARDS IDENTIFICATION

The product is outside of the scope of GHS system.

**Main Hazards:****Fire or Explosion Hazards:**

Lithium ion battery contains flammable liquid electrolyte that may vent, ignite and produce sparks when subjected to high temperatures (>150°C), when damaged or abused (e.g., mechanical damage or electrical overcharging). May burn rapidly with flare-burning effect. May ignite other batteries in close proximity.

**Health Hazards:**

Contact with the electrolyte of battery may be irritating to skin, eyes and mucous membranes. Fire will produce irritating, corrosive and/or toxic gases. Fumes may cause dizziness or suffocation.

## SECTION3 INFORMATION ON INGREDIENTS

**Product name:** Polymer Li-ion battery 651730 3.7V 300mAh 1.11Wh

| Ingredient           | Concentration | CAS No.    | EC No.    |
|----------------------|---------------|------------|-----------|
| Lithium cobalt oxide | 41.45%        | 12190-79-3 | 235-362-0 |



|                                 |        |            |           |
|---------------------------------|--------|------------|-----------|
| Graphite                        | 22.85% | 7782-42-5  | 231-955-3 |
| Copper                          | 7.05%  | 7440-50-8  | 231-159-6 |
| Carbon nanotubes                | 4.2%   | 1333-86-4  | 215-609-9 |
| Aluminum                        | 3.62%  | 7429-90-5  | 231-072-3 |
| Other                           | 3.21%  | /          | /         |
| Phosphate(1-)hexafluoro-lithium | 2.75%  | 21324-40-3 | 244-334-7 |
| Poly(vinylidene fluoride)       | 2.55%  | 24937-79-9 | 607-458-6 |
| Methyl ethyl carbonate          | 2.1%   | 623-53-0   | 613-014-2 |
| Nickel                          | 2.06%  | 7440-02-0  | 231-111-4 |

#### SECTION4 FIRST-AID MEASURES

##### Skin Exposure:

If in contact with the internal materials of battery, remove the contaminated clothing, shoes and socks, immediately flush with plenty of water for at least 20 minutes. Call a physician.

##### Eye Exposure:

If in contact with the internal materials of battery, lift your eyelids immediately and rinse them with running water for more than 20 minutes. Call a physician.

##### Inhalation Exposure:

If the internal materials of battery are inhaled, immediately remove to fresh air. If breathing is difficult give oxygen. If not breathing, give artificial respiration. Call a physician.

##### Oral Exposure:

Do not induce vomiting if the internal materials of battery are swallowed. Call a physician immediately.

##### Most Important Symptoms/Effects, Acute and Delayed:

No data available.

##### Indication of Immediate Medical Attention and Special Treatment Needed, if Necessary:

No data available.

#### SECTION5 FIRE FIGHTING MEASURES

##### Suitable Extinguishing Media:

Suitable:Water spray or regular foam.

##### Specific Hazards Arising from the Chemical:

May decompose upon combustion to generate irritating, corrosive or toxic fumes. Fumes may cause dizziness or suffocation.

##### Special Protective Action for Fire-fighters:

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Fire-extinguishing work is done from the windward. Uninvolved persons should evacuate to a safe place.

#### SECTION6 ACCIDENTAL RELEASE MEASURES

##### Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Entry to noninvolved personnel should be controlled around the leakage area by roping off. Remove all sources of ignition.



**Environmental Precautions:**

Avoid leakage getting into the earth, ditches or waters. Avoid directly releasing the washing waste-water into the environment.

**Methods and Materials for Containment and Cleaning up:**

If the electrolyte leaks, use soil, sand or other non-combustible materials to absorb. The leaked batteries and dirty adsorbents should be placed in metal containers.

**SECTION7 HANDLING AND STORAGE****Precautions for Safe Handling:**

Operators should be trained and strictly abide by operating procedures. Wear appropriate protective clothing and safety gloves. Keep away from ignition sources, heat and flame. No smoking at working site. Handling is performed in a well ventilated place. Avoid disassembling the battery at will and reversing battery polarity within the battery assembly. The battery must be firmly packed in inner packaging so as to effectively prevent short circuits and short circuits caused by movement. If the electrolyte leaks, avoid directly contacting with eyes and skin. Avoid inhalation. Incompatibilities: Strong oxidizing agents, combustible materials and corrosives.

**Conditions for Safe Storage, Including Any Incompatibilities:**

Store in a cool, dry, and well-ventilated area. Keep away from ignition sources, heat and flame. Incompatibilities: Strong oxidizing agents, combustible materials and corrosives. The battery must be firmly packed in inner packaging so as to effectively prevent short circuits and short circuits caused by movement. Storage place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.

**SECTION8 EXPOSURE CONTROL/PPE****Control Parameters:**

GBZ 2.1-2019 Occupational Exposure Limits for Hazardous Agents in the Workplace - Part 1: Chemical Hazardous Agents:

Cobalt and compounds, as Co PC-TWA 0.05mg/m<sup>3</sup> PC-STEL 0.1mg/m<sup>3</sup> Remarks: G2B, Sensitization

Graphite dust: PC-TWA 4 mg/m<sup>3</sup> (Total dust); PC-TWA 2 mg/m<sup>3</sup> (Respirable dust)

Copper (calculated as Cu): Copper dust PC-TWA 1 mg/m<sup>3</sup>; Copper smoke PC-TWA 0.2 mg/m<sup>3</sup>

Carbon nanotubes: Carbon black dust: PC-TWA 4 mg/m<sup>3</sup> (total dust), G2B

Aluminum metal, aluminum alloy dust: PC-TWA 3 mg/m<sup>3</sup> (Total dust)

Metallic nickel and insoluble nickel compounds: PC-TWA 1mg/m<sup>3</sup> Remark: G2B (Metals and alloys)

ACGIH:

Graphite: TLV-TWA 2 mg/m<sup>3</sup>

Copper: TLV-TWA 1 mg (Cu) /m<sup>3</sup> Dust, smoke; TLV-TWA 0.2 mg (Cu) /m<sup>3</sup> Smoke

Carbon nanotubes: TLV-TWA 3 mg/m<sup>3</sup>, inhalable dust

Aluminum: TLV-TWA 1 mg/m<sup>3</sup>

Nickel: TLV-TWA 1 mg/m<sup>3</sup>

**Appropriate Engineering Controls:**

Mechanical exhaust required. Safety shower and eye bath.

**Individual Protection Measures:****Eye/Face Protection:**

Wear chemical safety glasses if needed.

**Skin Protection:**

Hand Protection: Wear safety gloves.

Body Protection: Wear appropriate protective clothing.

**Respiratory Protection:**

Wear government approved respirator if needed.



**Thermal Hazards:**

No data available.

**Other Protect:**

No smoking, drinking and eating at working site. Wash thoroughly after handling.

**SECTION9 PHYSICAL/CHEMICAL PROPERTIES**

|  |                             |
|--|-----------------------------|
| <b>Appearance:</b>   | Silvery aluminum foil shell |
| <b>Odor:</b>   | Odorless                    |
| <b>pH Value:</b>   | 8-9                         |
| <b>Solubility:</b>   | Partial soluble in water    |
| <b>Boiling Point,<br/>Initial Boiling<br/>Point and Boiling<br/>Range:</b> | No data available           |
| <b>Melting<br/>Point/Freezing<br/>Point:</b>                               | >300°C                      |
| <b>Flash Point<br/>(Closed Cup):</b>                                       | No data available           |
| <b>Density/Relative<br/>Density:</b>                                       | No data available           |
| <b>Kinematic<br/>Viscosity:</b>  | No data available           |
| <b>Lower/Upper<br/>Explosion<br/>Limit/Flammabili<br/>ty Limit:</b>        | No data available           |
| <b>Vapour Pressure:</b>  | No data available           |
| <b>Relative Vapor<br/>Density:</b>   | No data available           |
| <b>Partition<br/>Coefficient<br/>N-Octanol/Water(<br/>Log Value):</b>      | No data available           |
| <b>Autoignition<br/>Temperature:</b>                                       | No data available           |
| <b>Decomposition<br/>Temperature:</b>                                      | No data available           |
| <b>Particle<br/>Characteristics:</b>                                       | No data available           |
| <b>Flammability<br/>(Solid, Gas):</b>                                      | No data available           |

**SECTION10 STABILITY AND REACTIVITY****Reactivity:**

No data available.

**Chemical Stability:**

Stable under normal temperatures and pressures.

**Possibility of Hazardous Reactions:**

No data available.

**Conditions to Avoid:**

Avoid misoperation, exposure to heat and open flame. Avoid mechanical or electrical abuse and overcharge. Prevent short circuits and short circuits caused by movement.

**Incompatible Materials:**

Strong oxidizing agents, combustible materials and corrosives.

**Hazardous Decomposition Products:**

Carbon oxides, metal oxides, etc.

**SECTION11 TOXICOLOGICAL INFORMATION**

**Acute Toxicity:**

No data available.

**Skin Corrosion/Irritation:**

The electrolyte in the battery causes skin irritation.

**Serious Eye Damage/Irritation:**

The electrolyte in the battery causes eye irritation.

**Respiratory Sensitization:**

No data available.

**Carcinogenicity:**

No data available.

**Skin Sensitization:**

No data available.

**Germ Cell Mutagenicity:**

No data available.

**Reproductive Toxicity:**

No data available.

**Specific Target Organ Toxicity -Single Exposure:**

No data available.

**Specific Target Organ Toxicity -Repeated Exposure:**

No data available.

**Aspiration Hazard:**

No data available.

**SECTION12 ECOLOGICAL INFORMATION**

**Toxicity:**

No data available.

**Persistence and Degradability:**

No data available.

**Bioaccumulative Potential:**

No data available.

**Mobility in Soil:**

No data available.

**Other Adverse Effects:**

No data available.

**SECTION13 DISPOSAL CONSIDERATION**

**Disposal Methods:**



The disposal of discarded battery shall comply with the requirements of relevant laws, regulations, policies and standards such as the "Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste" and "Technical Policy for the Prevention and Control of Waste Battery Pollution". Contact a licensed professional waste disposal service to dispose of wastes. Used battery being transported for disposal or reclamation should be carefully checked prior to shipment to ensure the integrity of each battery and its suitability for transport.

## SECTION14 TRANSPORT INFORMATION

### Only Lithium Battery during Transport:

The product has passed the test items of UN Model Regulations, Manual of Test and Criteria Section 38.3 and UN Model Regulations, SP188, 1.2m drop test. The total net weight of the Lithium batteries is less than 10 kg.

### RID/ADR (2021 Edition):

The product is not restricted to RID/ADR according to special provision 188. According to 2.2.9.1.7 (g) of RID/ADR (2021 Edition), Manufacturers and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5

### IATA DGR (63<sup>rd</sup> Edition):

Proper Shipping Name: Lithium ion batteries

UN Number: UN3480

Hazard Class: 9

The product shall meet the General Requirements and section IB of Packaging Instruction 965.

According to 3.9.2.6.1(g) of IATA DGR (63<sup>rd</sup> Edition), Manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

### IMO IMDG CODE (2020 Edition):

The product is not restricted to IMO IMDG Code according to special provision 188.

According to 2.9.4.7 of IMO IMDG CODE (2020 Edition), Manufacturers and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

## SECTION15 REGULATORY INFORMATION

### Domestic Regulations:

### Only Lithium Battery during Transport:

### Regulations Concerning Road Transportation of Dangerous Goods (JT/T 617-2018) :

UN Number: UN3480

Name and Description: Lithiumion batteries

The product has passed the test items of UN Model Regulations, Manual of Test and Criteria Section 38.3.

The product is not restricted to JT/T 617-2018 according to special provision 188.

### List of Dangerous Goods (GB 12268-2012) :

UN Number: UN3480 Shipping Name: Lithium ion batteries Packing Group: II

The product has passed the test items of UN Model Regulations, Manual of Test and Criteria Section 38.3.

The product is not restricted to GB 12268-2012 according to special provision 188.



**List of Dangerous Goods by Rail (2009 Edition) :**

Number: 91013 Name of Product: Lithium batteries

**International Regulations:****Directive 2006/66/EC and 2013/56/EU:**

The label, disposal and recycling of the battery shall meet the requirements of EU Directive 2006/66/EC and 2013/56/EU.

**ICAO TI:**

1. Unless be exempted according to ICAO TI, the lithium ion cell/batteries (UN 3480, PI 965) and lithium metal cell/batteries (UN 3090, PI 968) are forbidden for carriage on passenger aircraft.
2. Unless be approved according to ICAO TI, Lithium ion cells/batteries (UN 3480, PI 965) must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity.
3. A shipper is not permitted to offer for transport more than one (1) package prepared according to Section II of PI 965 and PI 968 in any single consignment. Not more than one (1) package prepared in accordance with Section II of PI 965 and PI 968 may be placed into an overpack.
4. Packages prepared according to Section II of PI 965 and PI 968 must be offered to the operator separately from other cargo and must not be loaded into a unit load device (ULD) before being offered to the operator.

**SECTION16 OTHER INFORMATION****Preparation Date:**

2022-01-21

**Preparation Department:**

Shanghai Research Institute of Chemical Industry Testing Co., Ltd.  
Tel (Fax) :+86-21-52815377/31765555

**Revision:**

0

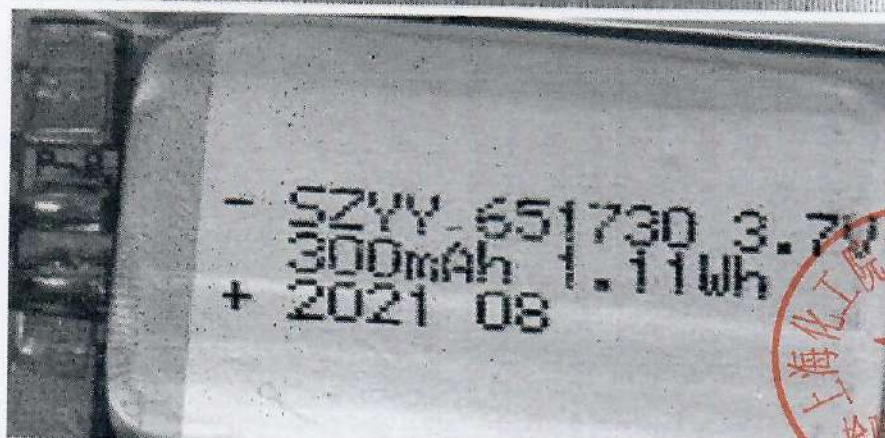
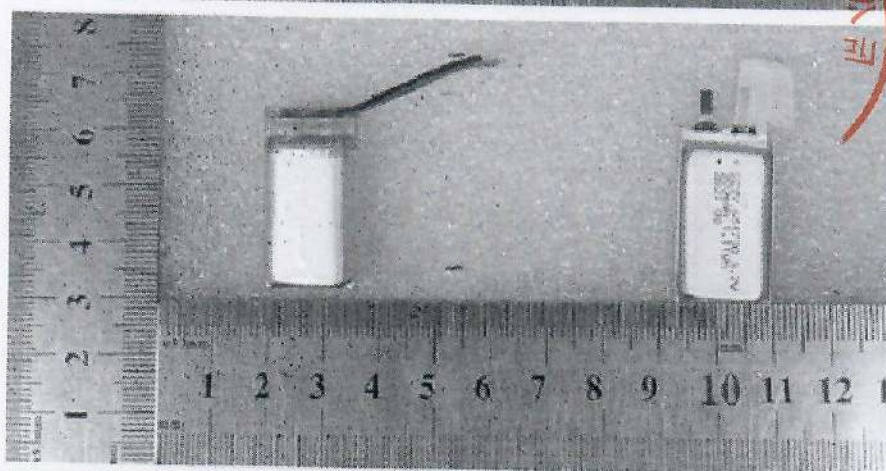
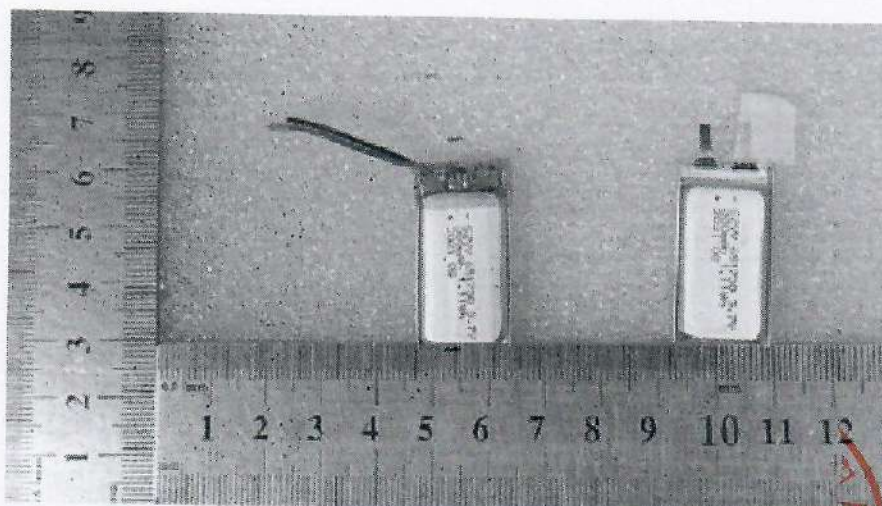
**Abbreviations and Acronyms:**

CAS: Chemical Abstracts Service EC: European Commission ACGIH: American Conference of Governmental Industrial Hygienists PC-TWA: Permissible concentration-time weighted average TLV-TWA: Time weighted average threshold limit G2B: Possibly carcinogenic to humans PC-STEL: Permissible concentration-short term exposure limit Sensitization: The substance may have allergenic effects ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road RID: Regulations concerning the International Carriage of Dangerous Goods by Rail IMO IMDG CODE: International Maritime Organization International Maritime Code for Dangerous Goods IATA DGR: International Air Transport Association Dangerous Goods Regulations EU: European Union ICAO TI: International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air PI:Packaging Instruction

**Other Information:**

This SDS is compiled based on the information such as ingredients provided by the applicant and our current knowledge. This SDS shall be used only as a guide. The users of this SDS must make independent judgments on the correctness and completeness and then decide its suitability according to the actual situation. The users should take the relevant legal responsibilities for the consequences of use.









# UN38.3 试验概要

## UN38.3 Test Summary



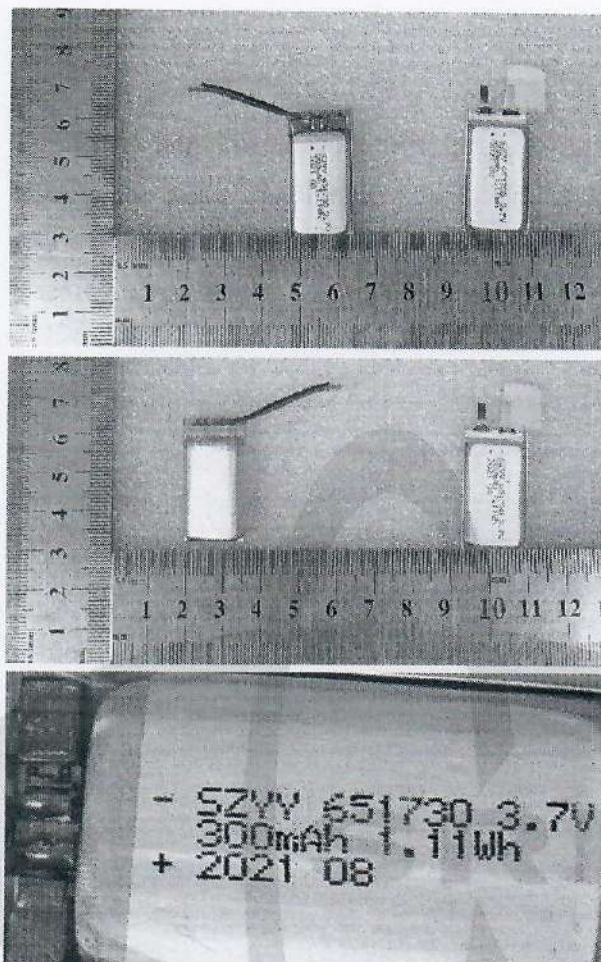
812100100096210

| 单位信息 Company information           |  |                                |  |
|------------------------------------|--|--------------------------------|--|
| 委托单位<br>Consignor                  | 深圳远银电子科技有限公司 Shenzhen Yuanyin Electronic Technology Co., Ltd<br>深圳市龙华区观湖街道观城社区大和工业区 34 号 3 单元 710 710, unit 3, 34 Dahe Industrial Zone, Guancheng community, Guanhu street, Longhua District, Shenzhen<br>15058883260 271262030@qq.com / |                                |  |
| 生产单位<br>Manufacturer               | 深圳远银电子科技有限公司 Shenzhen Yuanyin Electronic Technology Co., Ltd<br>深圳市龙华区观湖街道观城社区大和工业区 34 号 3 单元 710 710, unit 3, 34 Dahe Industrial Zone, Guancheng community, Guanhu street, Longhua District, Shenzhen<br>15058883260 271262030@qq.com / |                                |  |
| 测试单位<br>Test lab                   | 上海化工院检测有限公司 Shanghai Institute of Chemical Industry Testing Co., Ltd.<br>中国.上海.普陀区云岭东路 345 号, 200062 No.345 East Yunling Road, Putuo, Shanghai, China 200062<br>86-21-31765555 battery@ghs.cn www.ghs.cn                                 |                                |  |
| 电池信息 Battery information           |  |                                |  |
| 名称<br>Name                         | 聚合物锂离子电池 Polymer Li-ion battery  | 品牌<br>Brand                    | /  |
| 型号<br>Type                         | 651730   | 原始测试型号<br>Original tested type | /  |
| 标称电压(V)<br>Nominal voltage         | 3.7  | 容量/能量<br>Capacity/energy       | 300mAh 1.11Wh  |
| 描述<br>Description                  | 可充电锂离子单电芯电池<br>Rechargeable Li-ion single cell battery   | 锂含量(g)<br>Li content           | /  |
| 质量(kg)<br>Mass                     | 0.00617  | 外观<br>Appearance               | 银色, 黄色双色铝塑外壳<br>silvery and yellow aluminum-plastics shell |
| 测试信息 Test information              |  |                                |  |
| 原报告编号<br>Original test report No.  | 1121100449   | 测试报告日期<br>Date of test report  | 2021-12-14   |
| 测试标准<br>Test standard              | 联合国《试验和标准手册》第 38.3 章 UNITED NATIONS Manual of Tests and Criteria 38.3 ST/SG/AC.10/11/Rev.7   |                                |  |
| T.1 高度模拟<br>Altitude simulation    | 合格 Passed  | T.2 温度测试<br>Thermal test       | 合格 Passed  |
| T.3 振动测试<br>Vibration              | 合格 Passed  | T.4 冲击测试<br>Shock              | 合格 Passed  |
| T.5 外部短路<br>External short circuit | 合格 Passed  | T.6 挤压<br>Crush                | 合格 Passed  |
| T.7 过度充电<br>Overcharge             | 合格 Passed  | T.8 强制放电<br>Forced discharge   | 合格 Passed  |
| 38.3.3 (f)                         | /  | 38.3.3 (g)                     | /  |





# 样品图片 Sample Picture



有限公司

|                          |  |  |                   |
|--------------------------|--|--|-------------------|
| 结论<br>Conclusion         | 测试样品符合联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7 38.3 标准要求。The tested samples meet the requirements of test items of the UNITED NATIONS Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 38.3 |  |                   |
| 备注<br>Remark             | /  |  |                   |
| 签名 Signature<br>职务 Title | <p>王寅</p> <p>王寅</p> <p>副总工程师 Vice chief engineer</p>   | <p>检验检测专用章</p> <p>签发日期<br/>Issued date</p> | <p>2021-12-29</p> |

-验证码:597157-

\*\*\*报告结束\*\*\*





# 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： 聚合物锂离子电池 651730 3.7V 300mAh 1.11Wh

Sample name: Polymer Li-ion battery 651730 3.7V 300mAh 1.11Wh

委托单位： 深圳远银电子科技有限公司  
Shenzhen Yuanyin Electronic Technology Co., Ltd

生产单位： 深圳远银电子科技有限公司  
Shenzhen Yuanyin Electronic Technology Co., Ltd



Witness Better Life

**SICIT** 上海化工院检测有限公司

Shanghai Institute of Chemical Industry Testing Co., Ltd





# 货物运输条件鉴定书

NO. 212200418810766

Certification for Safe Transport of Chemical Goods

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|  |   |   |                               |                        |
|--|---|---|-------------------------------|------------------------|
| 样品名称<br>Sample Name                        | 中文<br>Chinese   | 聚合物锂离子电池 651730 3.7V 300mAh 1.11Wh  |                               |                        |
|  | 英文<br>English   | Polymer Li-ion battery 651730 3.7V 300mAh 1.11Wh  |                               |                        |
| 委托单位<br>Consignor                          |   | 深圳远银电子科技有限公司<br>Shenzhen Yuanyin Electronic Technology Co., Ltd                             |                               |                        |
| 生产单位<br>Manufacturer                       |   | 深圳远银电子科技有限公司<br>Shenzhen Yuanyin Electronic Technology Co., Ltd                             |                               |                        |
| 检验方法、程序<br>Inspection method and procedure |   | 国际海事组织《国际海运危险货物规则》(2020版)<br>IMO International Maritime Dangerous Goods Code (2020 Edition) |                               |                        |
| 样品外观<br>Sample appearance                  |   | 银色, 黄色双色铝塑外壳<br>Silvery and yellow Aluminum-plastics shell                                  |                               |                        |
| 包装件信息<br>Package information               |   | 重量≤30kg.<br>weight≤30kg.  |                               |                        |
| 序号<br>NO.                                  | 电池种类<br>Battery type  | 型号<br>Model   | 容量Capacity<br>/ 锂含量Li content | 放置方式<br>Placement      |
| 1  | 可充电锂离子单电芯电池<br>Rechargeable Li-ion<br>single cell battery   | 651730  | 300mAh 1.11Wh                 | 电池单独运输<br>Battery only |
| 鉴定<br>结论<br>IDENTIFICATION<br>CONCLUSION   | 1. 危险性识别 (Hazards identification)<br>锂离子电池。<br>Lithium ion 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)<br>根据特殊规定188, 该物品不受IMO IMDG Code其他条款限制。<br>The article is not subject to other provisions of IMO IMDG Code according to special provision 188. |   |                               |                        |
|  | 3. 包装要求 (Packaging requirements)<br>无。<br>None.   |   |                               |                        |
|  | <div style="display: flex; justify-content: space-between;"> <div>检验日期: 2022-01-06<br/>Inspection Date:</div> <div>签发日期: 2022-01-06<br/>Issue Date:</div> <div>生效日期: 2022-01-06<br/>Effective Date:</div> </div>      |   |                               |                        |
| 备注<br>Comment                              |   |   |                               |                        |

批准  
Approver: 王军

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. 212200418810766

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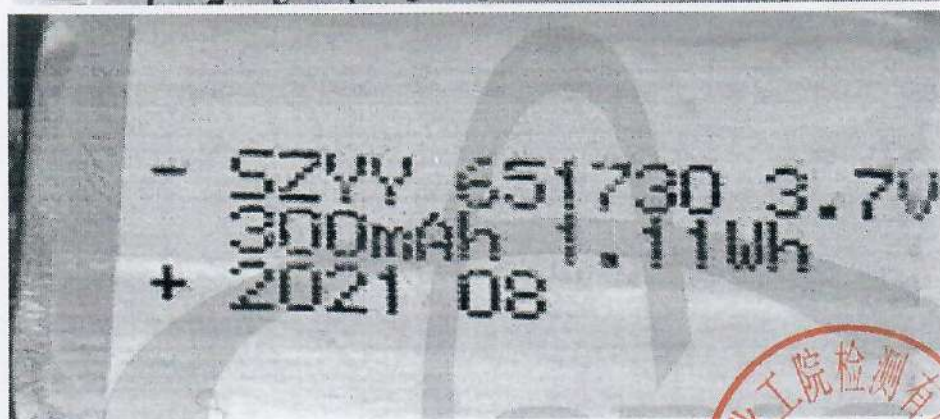
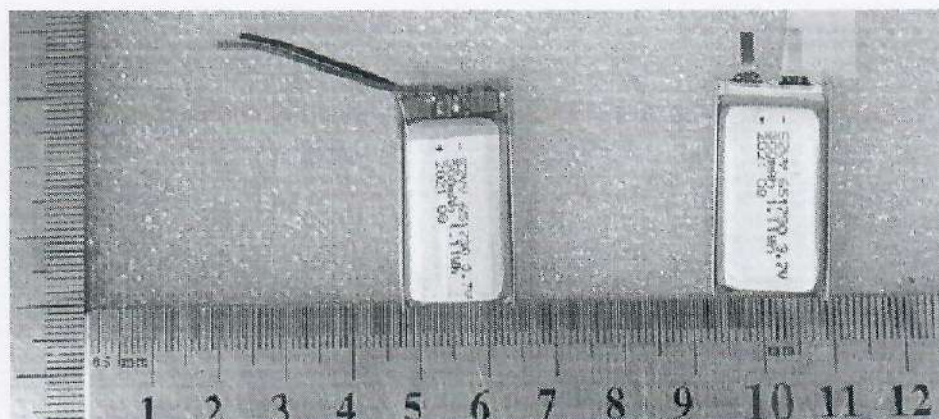
| 序号<br>No.    | 检验结果及其他事项<br>Inspection results and other things   |
|--------------|--|
| 1            | <p>本报告所述锂电池按照《国际海运危险货物规则》(2020版) 2.9.4.5规定的质量管理体系进行制造。<br/>Lithium cells and batteries listed in this report were manufactured under the quality management program described in IMDG CODE 2020 EDITION 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。<br/>包装件能够承受1.2m跌落试验。<br/>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.<br/>The package has passed the 1.2m drop test.<br/>UN38.3试验概要编号<br/>The UN38.3 Test Summary No. (s)<br/>812100100096210<br/>详细信息请扫描右侧二维码。<br/>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。<br/>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。<br/>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。<br/>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。<br/>Each package shall be marked with the appropriate lithium battery mark.<br/>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:664952- |  |

# 货物运输条件鉴定书

Certification for Safe Transport of Chemical Goods

NO. 212200418810766

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\*\*\*报告结束\*\*\*





NO.1121100449

# 检 测 报 告

## Test Report

样品名称： 聚合物锂离子电池 651730 3.7V 300mAh 1.11Wh

Name of Sample: Polymer Li-ion battery 651730 3.7V 300mAh 1.11Wh

委托单位： 深圳远银电子科技有限公司

Consignor: Shenzhen Yuanyin Electronic Technology Co., Ltd.

上海化工院检测有限公司

Shanghai Institute of Chemical Industry Testing Co., Ltd.



# 上海化工院检测有限公司 检测报告

Shanghai Institute of Chemical Industry  
Testing Co., Ltd. Test Report

NO. 1121100449

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|                                |  |  |                         |  |  |
|--------------------------------|--|--|-------------------------|--|--|
| 样品名称<br>Name of Sample         | 中文<br>Chinese  | 聚合物锂离子电池 651730 3.7V 300mAh 1.11Wh               |                         |  |  |
|                                | 英文<br>English  | Polymer Li-ion battery 651730 3.7V 300mAh 1.11Wh |                         |  |  |
| 样品编号<br>Sample No.             | 1121100449   |  |                         |  |  |
| 委托单位<br>Consignor              | 深圳远银电子科技有限公司<br>Shenzhen Yuanyin Electronic Technology Co., Ltd.   |  |                         |  |  |
| 生产单位<br>Manufacturer           | 深圳远银电子科技有限公司<br>Shenzhen Yuanyin Electronic Technology Co., Ltd.   |  |                         |  |  |
| 检测方法<br>Test method            | 联合国《试验和标准手册》<br>ST/SG/AC.10/11/Rev.7 38.3 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7<br>Section 38.3   |  |                         |  |  |
| 判定标准<br>Criterion              | 联合国《试验和标准手册》<br>ST/SG/AC.10/11/Rev.7 38.3 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7<br>Section 38.3   |  |                         |  |  |
| 样品外观<br>Appearance             | 银色, 黄色双色 铝塑外壳<br>Silvery and yellow Aluminum-plastics shell  |  |                         |  |  |
| 样品接受日期<br>Accepted Date        | 2021-10-26   | 检测起造日期<br>Test Date                              | 2021-11-03 ~ 2021-12-11 |  |  |
| 检测项目<br>Test Items             | 高度模拟; 热测试; 振动; 冲击; 外短路; 挤压; 过充电; 强制放电<br>Altitude simulation, Thermal test, Vibration, Shock, External short<br>circuit, Crush, Overcharge, Forced discharge                                       |  |                         |  |  |
| 检测结论<br>Conclusion             | 经检测, 该样品符合联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7 38.3标准要求。<br>The sample has passed the test items of UN Manual of Tests and Criteria<br>ST/SG/AC.10/11/Rev.7 Section 38.3<br><br>生效日期(Date): 2021-12-11 |  |                         |  |  |
| 备注<br>Comment                  | 可充电单电芯电池 Rechargeable Single Cell Battery. /   |  |                         |  |  |
| 委托单位地址<br>Consignor<br>Address | /  |  | 邮政编码<br>Post Code<br>/  |  |  |

批准  
Approver: 王宗  
职务  
Title: 副总工程师(Vice chief engineer)

审核  
Checker: 许勉

编制  
Compiler: 傅佳





# 上海化工院检测有限公司

## 检测报告

Shanghai Institute of Chemical Industry  
Testing Co., Ltd. Test Report

NO. 1121100449

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| 序号<br>No.                              | 检测项目名称<br>Name of Test Items  | 标准要求或标准条款号<br>Standard requirement or The Clause Number of Standard  | 检测结果<br>Test Result     | 本项结论<br>Conclusion | 备注<br>Remark    |
|--|-------------------------------|--|-------------------------|--------------------|-----------------|
| 1                                      | 高度模拟<br>Altitude simulation   | 联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7 38.3 试验T1<br>UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Section 38.3 Test T1  | 见附表 1<br>See Appendix 1 | 合格<br>Passed       | /               |
| 2                                      | 热测试<br>Thermal test           | 联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7 38.3 试验T2<br>UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Section 38.3 Test T2  | 见附表 2<br>See Appendix 2 | 合格<br>Passed       | /               |
| 3                                      | 振动<br>Vibration               | 联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7 38.3 试验T3<br>UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Section 38.3 Test T3  | 见附表 3<br>See Appendix 3 | 合格<br>Passed       | /               |
| 4                                      | 冲击<br>Shock                   | 联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7 38.3 试验T4<br>UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Section 38.3 Test T4  | 见附表 4<br>See Appendix 4 | 合格<br>Passed       | /               |
| 5                                      | 外短路<br>External short circuit | 联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7 38.3 试验T5<br>UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Section 38.3 Test T.5 | 见附表 5<br>See Appendix 5 | 合格<br>Passed       | /               |
| 6                                      | 挤压<br>Crush                   | 联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7 38.3 试验T6<br>UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Section 38.3 Test T.6 | 见附表 6<br>See Appendix 6 | 合格<br>Passed       | /               |
| 7                                      | 过充电<br>Overcharge             | 联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7 38.3 试验T7<br>UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Section 38.3 Test T.7 | 见附表 7<br>See Appendix 7 | 合格<br>Passed       | /               |
| 8                                      | 强制放电<br>Forced discharge      | 联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7 38.3 试验T8<br>UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Section 38.3 Test T.8 | 见附表 8<br>See Appendix 8 | 合格<br>Passed       | /               |
| 检测环境条件<br>Test Environment Condition   |                               | 环境温度:22℃-23℃;环境湿度:/%<br>Ambient temperature:22℃-23℃;Ambient humidity:/%  |                         |                    |                 |
| 分包检验情况<br>Subcontracted Test Condition |                               | 检测项目<br>Test Item  | /                       |                    |                 |
|  |                               | 分包实验室<br>Subcontracted Laboratory  | 名称<br>Name              | /                  | 邮编<br>Post Code |
|  |                               |  | 地址<br>Address           | /                  | 电话<br>Tel       |

### 检测报告-附表1

NO. 1121100449

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备注: L-泄漏 V-漏气 D-解体 R-破裂 F-起火 O-无泄漏、无漏气、无解体、无破裂、无起火。  
Note: L-Leakage V-Venting D-Disassembly R-Rupture F-Fire O-No Leakage, No Venting,  
No Disassembly, No Rupture & No Fire.



## 检测报告-附表2

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| 序号<br>No.                 | 2                                      | 检测项目名称<br>Name of Test Items |                   | 热测试<br>Thermal test |                   |                         |                               |                            |
|---------------------------|--|------------------------------|-------------------|---------------------|-------------------|-------------------------|-------------------------------|----------------------------|
| 样品<br>编号<br>Sample<br>No. | 样品状态<br>Sample Status                  | 试验前 Before                   |                   | 试验后 After           |                   | 质量损失<br>Mass Loss<br>/% | 剩余电压<br>Residual<br>OCV<br>/% | 其他<br>现象<br>Other<br>Event |
|                           |  | 质量<br>Mass<br>/g             | 开路电压<br>OCV<br>/V | 质量<br>Mass<br>/g    | 开路电压<br>OCV<br>/V |                         |                               |                            |
| 001                       | 1CYC完全充电<br>1CYC Fully charged         | 6.0615                       | 4.17              | 6.0682              | 4.08              | 0.00                    | 97.84                         | O                          |
| 002                       | 1CYC完全充电<br>1CYC Fully charged         | 6.0363                       | 4.17              | 6.0428              | 4.09              | 0.00                    | 98.08                         | O                          |
| 003                       | 1CYC完全充电<br>1CYC Fully charged         | 6.0065                       | 4.16              | 6.0117              | 4.09              | 0.00                    | 98.32                         | O                          |
| 004                       | 1CYC完全充电<br>1CYC Fully charged         | 6.0485                       | 4.16              | 6.0537              | 4.09              | 0.00                    | 98.32                         | O                          |
| 005                       | 1CYC完全充电<br>1CYC Fully charged         | 6.1394                       | 4.18              | 6.1446              | 4.08              | 0.00                    | 97.61                         | O                          |
| 006                       | 25CYC完全充电<br>25CYC Fully charged       | 6.0306                       | 4.17              | 6.0356              | 4.10              | 0.00                    | 98.32                         | O                          |
| 007                       | 25CYC完全充电<br>25CYC Fully charged       | 6.0631                       | 4.15              | 6.0688              | 4.09              | 0.00                    | 98.55                         | O                          |
| 008                       | 25CYC完全充电<br>25CYC Fully charged       | 6.0453                       | 4.17              | 6.0514              | 4.09              | 0.00                    | 98.08                         | O                          |
| 009                       | 25CYC完全充电<br>25CYC Fully charged       | 6.0355                       | 4.17              | 6.0408              | 4.10              | 0.00                    | 98.32                         | O                          |
| 010                       | 25CYC完全充电<br>25CYC Fully charged       | 6.1668                       | 4.16              | 6.1725              | 4.09              | 0.00                    | 98.32                         | O                          |
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Shanghai Institute of Chemical Industry  
Testing Co., Ltd. Test Report—Appendix 3

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## 检测报告-附表4

Shanghai Institute of Chemical Industry  
Testing Co., Ltd. Test Report—Appendix 4

NO. 1121100449

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## 检测报告-附表5

NO. 1121100449

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| 序号<br>No.          | 6                                   | 检测项目名称<br>Name of Test Items             | 挤压<br>Crush         |
|--------------------|-------------------------------------|--|---------------------|
| 样品编号<br>Sample No. | 样品状态<br>Sample Status               | 样品表面最高温度<br>Max. External Temperature /℃ | 其他现象<br>Other Event |
| 011                | 1CYC 50%容量<br>1CYC 50% Capacity     | 20.5                                     | O                   |
| 012                | 1CYC 50%容量<br>1CYC 50% Capacity     | 20.6                                     | O                   |
| 013                | 1CYC 50%容量<br>1CYC 50% Capacity     | 20.6                                     | O                   |
| 014                | 1CYC 50%容量<br>1CYC 50% Capacity     | 20.6                                     | O                   |
| 015                | 1CYC 50%容量<br>1CYC 50% Capacity     | 20.5                                     | O                   |
| 016                | 25CYC 50%容量<br>25CYC 50% Capacity   | 20.5                                     | O                   |
| 017                | 25CYC 50%容量<br>25CYC 50% Capacity   | 20.6                                     | O                   |
| 018                | 25CYC 50%容量<br>25CYC 50% Capacity   | 20.5                                     | O                   |
| 019                | 25CYC 50%容量<br>25CYC 50% Capacity   | 20.5                                     | O                   |
| 020                | 25CYC 50%容量<br>25CYC 50% Capacity   | 20.5                                     | O                   |
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备注：D-解体 F-起火 O-无解体、无起火。  
Note: D-Disassembly F-Fire O-No Disassembly & No Fire.

## 检测报告-附表7

Testing Co., Ltd. Test Report—Appendix 7

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# 上海化工院检测有限公司

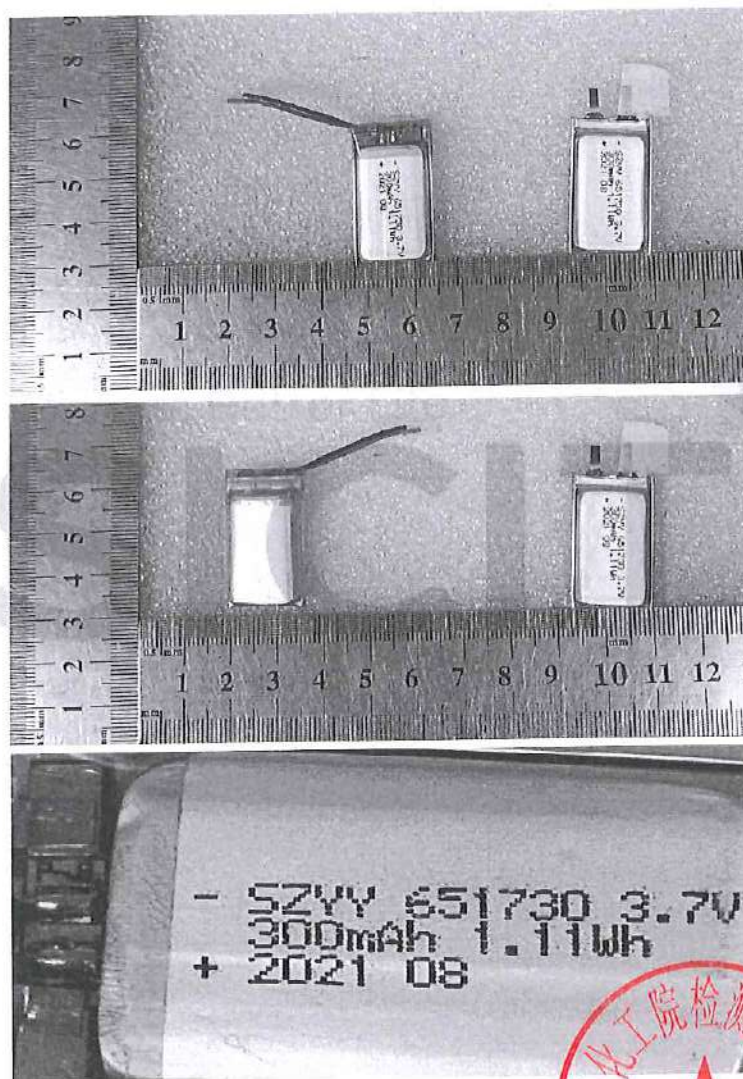
## 检测报告 - 附表8

Shanghai Institute of Chemical Industry  
Testing Co., Ltd. Test Report - Appendix 8

NO. 1121100449

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| 序号<br>No.  | 8                                   | 检测项目名称<br>Name of Test Items | 强制放电<br>Forced discharge |
|--|-------------------------------------|------------------------------|--------------------------|
| 样品编号<br>Sample No.   | 样品状态<br>Sample Status               | 其他现象<br>Other Event          |                          |
| 029  | 1CYC完全放电<br>1CYC Fully discharged   | O                            |                          |
| 030  | 1CYC完全放电<br>1CYC Fully discharged   | O                            |                          |
| 031  | 1CYC完全放电<br>1CYC Fully discharged   | O                            |                          |
| 032  | 1CYC完全放电<br>1CYC Fully discharged   | O                            |                          |
| 033  | 1CYC完全放电<br>1CYC Fully discharged   | O                            |                          |
| 034  | 1CYC完全放电<br>1CYC Fully discharged   | O                            |                          |
| 035  | 1CYC完全放电<br>1CYC Fully discharged   | O                            |                          |
| 036  | 1CYC完全放电<br>1CYC Fully discharged   | O                            |                          |
| 037  | 1CYC完全放电<br>1CYC Fully discharged   | O                            |                          |
| 038  | 1CYC完全放电<br>1CYC Fully discharged   | O                            |                          |
| 039  | 25CYC完全放电<br>25CYC Fully discharged | O                            |                          |
| 040  | 25CYC完全放电<br>25CYC Fully discharged | O                            |                          |
| 041  | 25CYC完全放电<br>25CYC Fully discharged | O                            |                          |
| 042  | 25CYC完全放电<br>25CYC Fully discharged | O                            |                          |
| 043  | 25CYC完全放电<br>25CYC Fully discharged | O                            |                          |
| 044  | 25CYC完全放电<br>25CYC Fully discharged | O                            |                          |
| 045  | 25CYC完全放电<br>25CYC Fully discharged | O                            |                          |
| 046  | 25CYC完全放电<br>25CYC Fully discharged | O                            |                          |
| 047  | 25CYC完全放电<br>25CYC Fully discharged | O                            |                          |
| 048  | 25CYC完全放电<br>25CYC Fully discharged | O                            |                          |
| 备注: D-解体 F-起火 O-无解体、无起火。<br>Note: D-Disassembly F-Fire O-No Disassembly & No Fire. |                                     |                              |                          |



\*\*\*报告结束\*\*\*