

Certificado de batería

Datos de seguridad y transporte de la batería de su producto.



PARA EL PRODUCTO

Paiseec S3 – Scooter Eléctrico Todoterreno

SKU: AFSE-S3-P1



Datos de la batería

444 Wh

Energía

37 V

Voltaje

12 Ah

Capacidad

Litio

Química

Sí

Batería removible

Aprobada

Prueba UN 38.3

USO Y TRANSPORTE • Clase 9 – batería de litio



Este producto no está pensado para viajar en avión (su batería de 444 Wh supera los 300 Wh que suelen aceptar las aerolíneas). Este documento identifica su batería para envíos por tierra, almacenaje y servicio técnico.

¿Dudas sobre la batería? Escriba a MarIa por WhatsApp



Le ayudamos con la carga, el cuidado y el servicio de su producto. Escanee el código o escriba al:

WhatsApp 55 9990 2396

s.andafacil.com/wabateriaafses3p1



Cuidado y transporte de la batería

1. Cárguela con el cargador original, en un lugar ventilado y lejos de fuentes de calor.
2. Si no la usa por varias semanas, cárguela al menos una vez al mes.
3. Para moverla en auto o enviarla, apague el producto, desconecte la batería y protéjala de golpes y del agua.
4. Si se hincha, huele raro o se calienta de más, deje de usarla y escríbanos.



Consejo de Don Andy: guarde este certificado junto con su factura; se lo pueden pedir en envíos o en el servicio técnico.

Evidencia del fabricante

Documento	Detalle
Nombre de la mercancía (como aparece en el certificado)	Lithium ion Battery Pack
Modelo de batería	DZ37N-12EM
Fabricante	Phylion Battery Co., Ltd
Resumen de prueba UN 38.3	Report No. LA2024B0757001U · Shenzhen Lionaces Technology Co., Ltd. · 2024-07-05
Hoja de datos de seguridad (MSDS)	Report No. ITTP2601017A-S-000 · ITT Testing Technology (Dongguan) Co., Ltd. · 2026.01.20

Originales del fabricante (páginas siguientes): **2**

ANDAFACIL identifica el producto; los datos técnicos provienen de los certificados originales que se adjuntan.

Battery certificate

Safety and transport data for your product's battery.



FOR THE PRODUCT

Paiseec S3 – All-Terrain Electric Scooter

SKU: AFSE-S3-P1



Battery data

444 Wh

Energy

37 V

Voltage

12 Ah

Capacity

Lithium-ion

Chemistry

Yes

Removable
battery

Passed

UN 38.3 test

USE AND TRANSPORT • Class 9 – lithium battery



This product is not meant for air travel (its 444 Wh battery is above the 300 Wh airlines usually accept). This document identifies its battery for ground shipping, storage and service.

Battery questions? Message Marla on WhatsApp



We help with charging, care and service (Spanish and English). Scan the code or write to:

WhatsApp 55 9990 2396

s.andafacil.com/wabateriaafses3p1



Battery care and transport

1. Charge it with the original charger, in a ventilated place away from heat.
2. If you do not use it for several weeks, charge it at least once a month.
3. To move it by car or ship it, switch the product off, disconnect the battery and protect it from impacts and water.
4. If it swells, smells odd or gets too hot, stop using it and contact us.



Don Andy's tip: keep this certificate with your invoice; it may be requested for shipping or service.

Manufacturer evidence

Document	Detail
Goods name (as printed on the certificate)	Lithium ion Battery Pack
Battery model	DZ37N-12EM
Manufacturer	Phylion Battery Co., Ltd
UN 38.3 Test Summary	Report No. LA2024B0757001U · Shenzhen Lionaces Technology Co., Ltd. · 2024-07-05
MSDS	Report No. ITTP2601017A-S-000 · ITT Testing Technology (Dongguan) Co., Ltd. · 2026.01.20

Manufacturer originals (following pages): **2**

ANDAFACIL identifies the product; the technical data comes from the original certificates attached.

锂电池 UN38.3 测试报告

Lithium Battery UN38.3 Test Report

报告编号: LA2024B0757001U
Report No.:

样品名称
Sample

锂离子电池组
Lithium ion Battery Pack

样品型号
Model

DZ37N-12EM

委托单位
Applicant

深圳芝麻花儿开科技有限公司
Shenzhen Zhimahuaerkai Technology Co., Ltd.

签发日期
Issue Date

2024-07-05

深圳市莱恩瑞斯科技有限公司
Shenzhen Lionaces Technology Co., Ltd.

报告专用章

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Shenzhen Lionaces Technology Co., Ltd.

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Baoan, Shenzhen, Guangdong, China.
Tel: 0755-28280690 E-mail: service@lionaces.com
Website: www.lionaces.com

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This report is invalid without the special seal for report of Lionaces and the signatures of approver.

- 2、 本报告涂改和删除无效。

This report is invalid if it is blotted out and deleted.

- 3、 委托单位对检测结果有异议，应于收到报告之日起十五日内向我司提出。

If the applicant has any questions about results, shall submit to Lionaces within 15 days.

- 4、 本报告仅对客户所送样品负责。

This report is responsible for the sample provided by the client only.

- 5、 未经本单位许可，不得部分复制、摘用本报告书内容。

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- 6、 委托单位必须如实提供样品和资料，有关报告中的产品信息、参数、图纸、关键元器件清单等所有产品信息均由委托单位提供，否则本单位不承担任何相关责任。

The applicant must provide samples and materials truthfully. All of information such as product information, parameters, drawings, components, etc. are provided by the applicant. Otherwise we will not take on any relevant responsibilities for this report.

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1. 样品描述 Sample Description			
样品名称 Sample Name	锂离子电池组 Lithium ion Battery Pack	样品型号 Model Name	DZ37N-12EM
电池规格 Battery specification	37V, 12Ah, 444Wh	商标 Trade mark	N/A
组成方式 Composing mode	10S1P	电池重量 Mass of battery	4040.7g
电池外观 Battery appearance	黑色近长方体 Approximate Black Cuboid	电池尺寸 Battery Size	308.92mm*134.71mm*77.13mm
电池类型 Battery Type	可充电锂离子电池组 Rechargeable Lithium-ion Battery		
测试实验室 Testing laboratory	深圳市莱恩瑞斯科技有限公司 Shenzhen Lionaces Technology Co., Ltd.		
测试地址 Testing Address	深圳市宝安区福海街道和平社区永和路骏丰工业区 B6 栋 301 301, Building B6, Junfeng Industrial Zone, Yonghe Road, Heping Community, Fuhai Street, Baoan, Shenzhen, Guangdong, China		
电话 Telephone	0755-28280690	邮箱 Email	service@lionaces.com
网址 website	www.lionaces.com		
委托单位 Applicant	深圳芝麻花儿开科技有限公司 Shenzhen Zhimahuaerkai Technology Co., Ltd.		
委托单位地址 Applicant address	深圳市南山区西丽街道曙光社区中山园路 1001 号 TCL 科学园 F1 栋 602 Room 602, Building F1, TCL Science Park, No. 1001 Zhongshan Garden Road, Shuguang Community, Xili Street, Nanshan District, Shenzhen		
生产单位 Manufacturer	星恒电源股份有限公司 Phylion Battery Co., Ltd		
生产单位地址 Manufacturer address	苏州市高新区金沙江路 181 号 No.181, Jinshajiang Road, New District, Suzhou City, Jiangsu Province, P. R.China		
电话 Telephone	13392186663	邮箱 Email	holiday@ittjs.com
网址 website	N/A		

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2、测试标准 Standard

联合国《试验和标准手册》（第 7 版修订 1）38.3 节
UN "Manual of Tests and Criteria" ST/SG/AC.10/11/Rev.7/Amend1/Subsection 38.3

3、测试项目及结论 Test Item And Conclusion

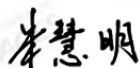
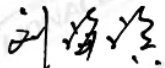
测试项目 Item	测试样品编号 Samples Number	结论 Conclusion
38.3.4.1 高度模拟 Altitude simulation	Z1~Z4, X1~X4	通过 Pass
38.3.4.2 温度试验 Thermal test		通过 Pass
38.3.4.3 振动 Vibration		通过 Pass
38.3.4.4 冲击 Shock		通过 Pass
38.3.4.5 外部短路 External Short Circuit		通过 Pass
38.3.4.6 挤压 Crush	Z5~Z9, X5~X9	通过 Pass
38.3.4.7 过度充电 Overcharge	Z10~Z13, X10~X13	通过 Pass
38.3.4.8 强制放电 Forced discharge	Z14~Z23, X14~X23	通过 Pass

参考组装电池测试要求，如果适用(38.3.3(f)和 38.3.3(g)):不适用
Reference to assembled battery testing requirements, if applicable (i.e., 38.3.3(f) and 38.3.3(g)): Not applicable

说明 Notes: P--Pass; N/A--不适用 not applicable; Y--Yes; N--No;
Z1~Z4, Z10~Z13: 第一个充放电周期完全充电状态的电池; Batteries at first cycle in fully charged states;
Z5~Z9: 第一个充放电周期 50%设计额定容量状态的电池芯; Cells at first cycle at 50% of the design rated capacity;
Z14~Z23: 第一个充放电周期完全放电状态的电池芯; Cells at first cycle in fully discharged states;
X1~X4 X10~X13: 25 个充放电周期后完全充电状态的电池; Batteries after 25 cycles ending in fully charged states;
X5~X9: 25 个充放电周期 50%设计额定容量状态的电池芯; Cells after 25 cycles at 50% of the design rated capacity;
X14~X23: 25 个充放电周期后完全放电状态的电池芯; Cells after 25 cycles ending in fully discharged states.

送检样品符合《联合国关于危险货物运输的建议书：试验和标准手册》38.3 章的要求。
The submitted samples complied with UN Manual of Tests and Criteria, Part III, sub-section 38.3.

版本号: V1.0

收样日期 Receiving Date	2024-05-15	完成日期 Completing Date	2024-05-29	签发日期 Issue Date	2024-07-05
主检人: Prepared by		审核人: Checked by		批准人: Approved by	

李雯 Wen Li: 测试工程师 Quality Testing Engineer
朱慧明 Huiming Zhu: 实验室经理 Lab Manager
刘海滨 Rick Liu: 授权签字人 Authorized Signatory

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4、样品图片 Sample Photos

电池/Battery (DZ37N-12EM

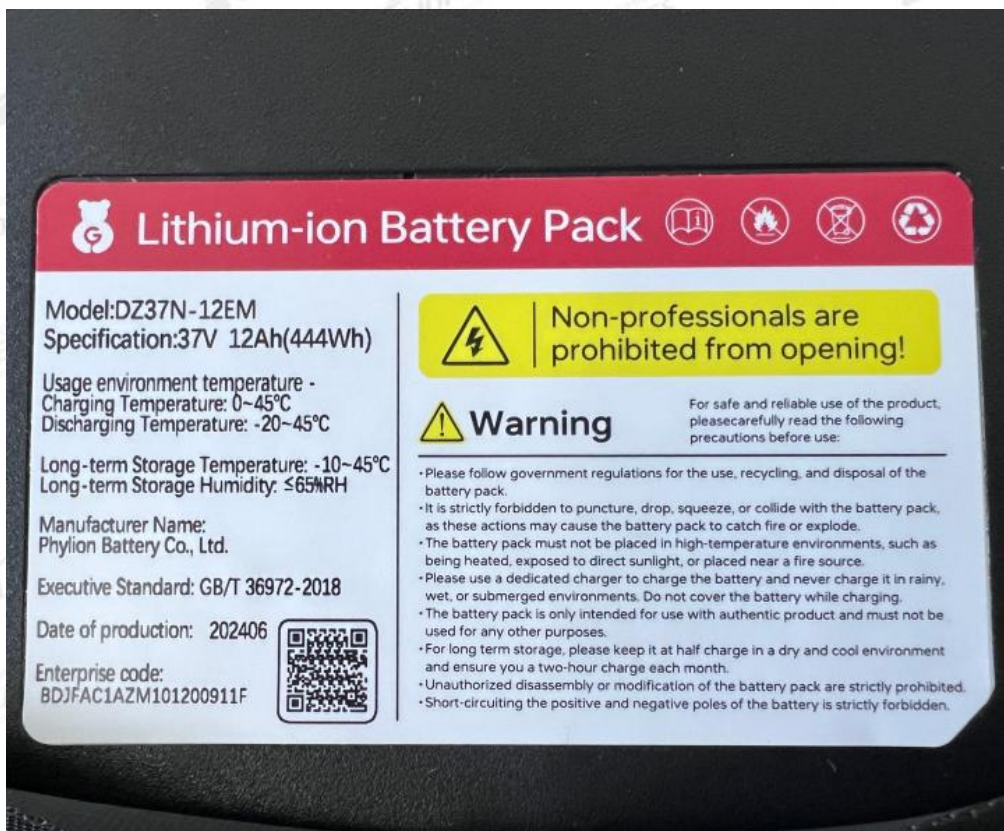
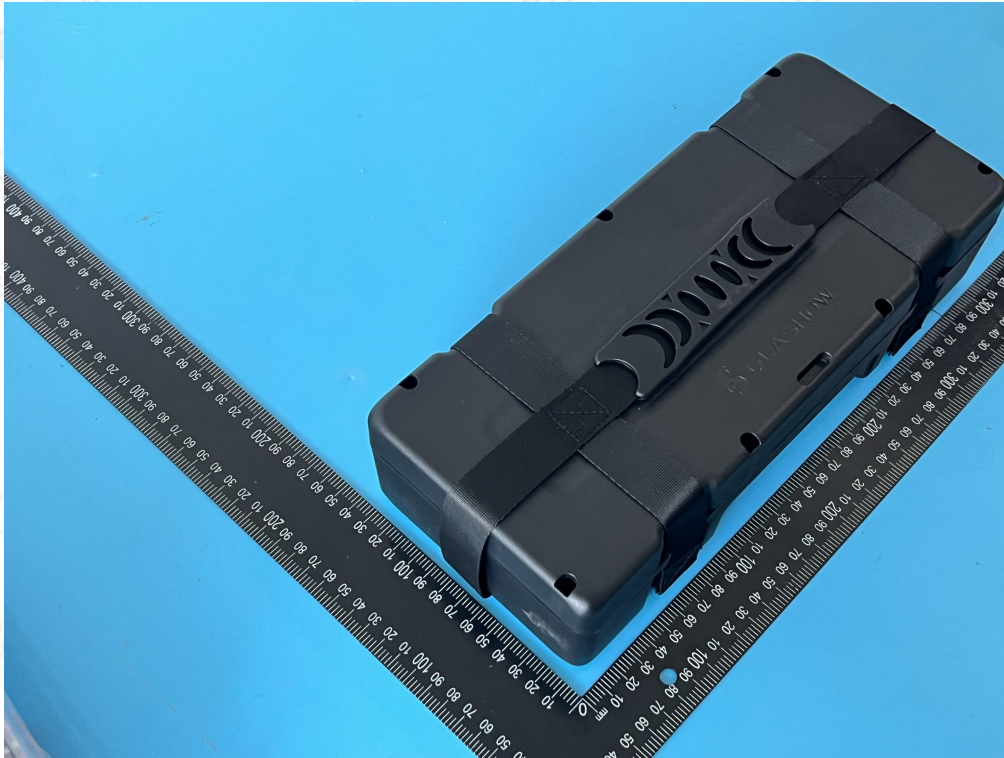
37V, 12Ah, 444Wh)



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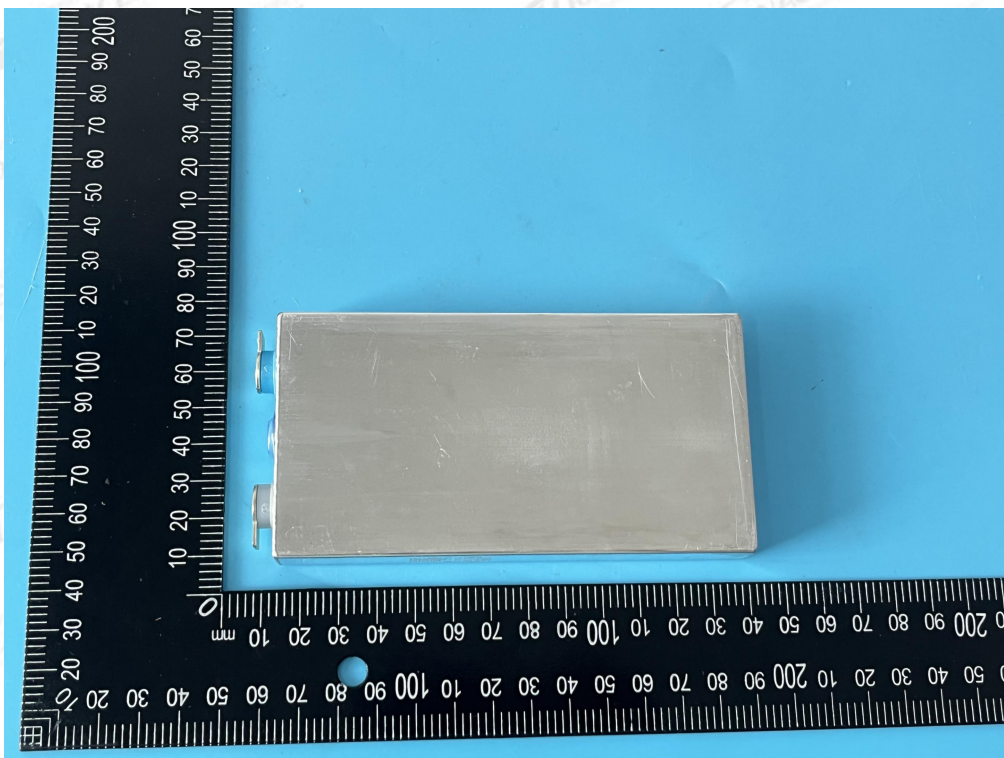
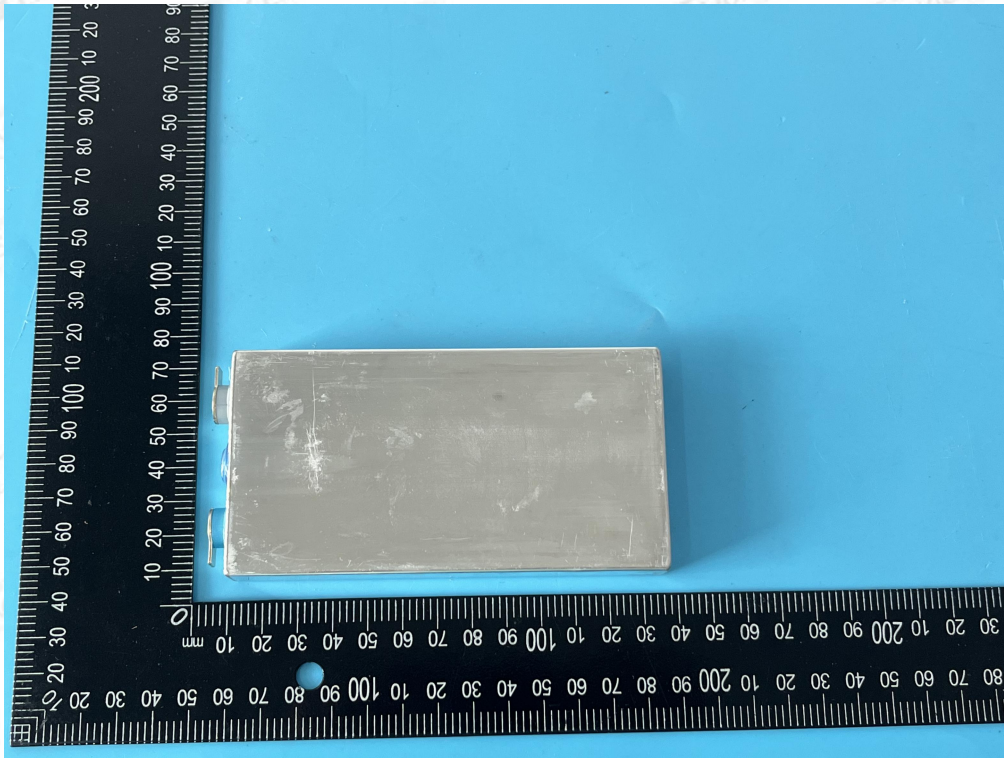
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Website: www.lionaces.com

电芯/Cell (IMP18/66/133(12)HA

3.7V, 12000mAh, 44.4Wh)



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5、测试方法及判定 Test Method And Verdict

章节 Clause	标准要求 Requirements	测试结果 Result	判定 Verdict
38.3.4.1	测试 1: 高度模拟 Test 1: Altitude simulation	见表 1 See Table 1	P
	试验电池和电池组应压力不大于11.6kpa和环境温度为20±5℃的条件下贮存不少于6个小时。 Test cells and batteries shall be stored at a pressure of 11.6kPa or less for at least six hour at ambient temperature (20±5℃) 要求电池和电池组无渗漏、无排气、无解体、无破裂和无起火,并且每个试验电池或电池组在试验后的开路电压不小于其在进行这一试验前电压的90%。有关电压的要求不适用于完全放电状态的试验电池和电池组。 Cells and batteries meet this requirement if there is no leakage, no venting, no disassemble, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.	无渗漏, 无排气, 无解体, 无破裂和无起火。 No leakage, no venting, no disassemble, no rupture and no fire.	P
38.3.4.2	测试 2: 温度试验 Test 2: Thermal test	见表 2 See Table 2	P
	试验电池和电池组先在试验温度等于72℃±2℃的条件下存放至少6小时,接着再在试验温度等于-40℃±2℃的条件下存放至少6小时。两个极端试验温度之间的最大时间间隔为30分钟。此程序重复进行,共完成10次,接着将所有试验电池和电池组在环境温度(20℃±5℃)下存放24小时。对于大型电池和电池组,暴露于极端试验温度的时间至少应为12小时。 Test cells and batteries are to be stored for at least six hours at a test temperature equal to 72±2℃, followed by storage for at least six hours at a test temperature equal to -40±2℃. The maximum time interval between test temperature extremes is 30 minutes. This procedure is to be repeated until 10 total cycles are complete, after which all test cells and batteries are to be stored for 24 hours at ambient temperature (20 ± 5℃). For large cells and batteries the duration of exposure to the test temperature extremes should be at least 12 hours. 要求电池和电池组无渗漏、无排气、无解体、无破裂和无起火,并且每个试验电池或电池组在试验后的开路电压不小于其在进行这一试验前电压的90%。有关电压的要求不适用于完全放电状态的试验电池和电池组。 Cells and batteries meet this requirement if there is no leakage, no venting, no disassemble, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.	无渗漏, 无排气, 无解体, 无破裂和无起火。 No leakage, no venting, no disassemble, no rupture and no fire.	P

章节 Clause	标准要求 Requirements	测试结果 Result	判定 Verdict
38.3.4.3	测试3: 振动 Test 3: Vibration	见表 3 See Table 3	P
	电池和电池组紧固于振动机平台, 但不得造成电池变形, 并能准确可靠地传播振动。振动应是正弦波形, 对数扫描频率在 7 赫兹和 200 赫兹之间, 再回到 7 赫兹, 跨度为 15 分钟。这一振动过程须对三个互相垂直的电池安装方位的每一方向重复进行 12 次, 总共为时 3 小时。其中一个振动方向必须与端面垂直。 Cells and batteries are firmly secured to the platform of the vibration machine without distorting the cells in such a manner as to faithfully transmit the vibration. The vibration shall be a sinusoidal waveform with a logarithmic sweep between 7 Hz and 200 Hz and back to 7 Hz traversed in 15 minutes. This cycle shall be repeated 12 times for a total of 3 hours for each of three mutually perpendicular mounting positions of the cell. One of the directions of vibration must be perpendicular to the terminal face. 作对数式频率扫描, 对总质量不足 12 千克的电池和电池组 (电池和小型电池组), 和对 12 千克及更大的电池组 (大型电池组) 有所不同。 The logarithmic frequency sweep shall differ for cells and batteries with a gross mass of not more than 12 kg (cells and small batteries), and for batteries with a gross mass of more than 12 kg (large batteries). 对电池和小型电池组: 从 7 赫兹开始, 保持 $1g_n$ 的最大加速度, 直到频率达到 18 赫兹。然后将振幅保持在 0.8 毫米 (总偏移 1.6 毫米), 并增加频率直到最大加速度达到 $8g_n$ (频率约为 50 赫兹)。将最大加速度保持在 $8g_n$ 直到频率增加到 200 赫兹。 For cells and small batteries: from 7 Hz a peak acceleration of $1g_n$ is maintained until 18 Hz is reached. The amplitude is then maintained at 0.8 mm (1.6 mm total excursion) and the frequency increased until a peak acceleration of $8g_n$ occurs (approximately 50 Hz). A peak acceleration of $8g_n$ is then maintained until the frequency is increased to 200 Hz. 对大型电池组: 从 7 赫兹开始, 保持 $1g_n$ 的最大加速度, 直到频率达到 18 赫兹。然后将振幅保持在 0.8 毫米 (总偏移 1.6 毫米), 并增加频率直到最大加速度达到 $2g_n$ (频率约为 25 赫兹)。将最大加速度保持在 $2g_n$ 直到频率增加到 200 赫兹。 For large batteries: from 7 Hz to a peak acceleration of $1g_n$ is maintained until 18 Hz is reached. The amplitude is then maintained at 0.8 mm (1.6 mm total excursion) and the frequency increased until a peak acceleration of $2g_n$ occurs (approximately 25 Hz). A peak acceleration of $2g_n$ is then maintained until the frequency is increased to 200 Hz. 要求电池和电池组试验中和试验后无渗漏、无排气、无解体、无破裂和无起火, 并且每个试验电池或电池组在第三个垂直安装方位上的试验后立即测得的开路电压不小于在进行这一试验前电压的	无渗漏, 无排气, 无解体, 无破裂和无起火。 No leakage, no venting, no disassemble, no rupture and no fire.	P

章节 Clause	标准要求 Requirements	测试结果 Result	判定 Verdict									
	90%。有关电压的要求不适用于完全放电状态的试验电池和电池组。 Cells and batteries meet this requirement if there is no leakage, no venting, no disassemble, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.											
38.3.4.4	测试4：冲击 Test 4: Shock 试验电池和电池组用坚硬支架紧固在试验装置上，支架支撑着每个试验电池组的所有安装面。 Test cells and batteries shall be secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each test battery. 每个电池需经受最大加速度$150g_n$和脉冲持续时间6毫秒的半正弦波冲击。针对大型电池需经受最大加速度$50g_n$和脉冲持续时间11毫秒的半正弦波冲击。 Each cell shall be subjected to a half-sine shock of peak acceleration of $150g_n$ and pulse duration of 6 milliseconds. Alternatively, large cells may be subjected to a half-sine shock of peak acceleration of $50g_n$ and pulse duration of 11 milliseconds. 每个电池组应根据电池组的质量而受到峰值加速度的半正弦波冲击。对于小型电池组的脉冲持续时间应6毫秒，对于大型电池组的脉冲持续时间应为11毫秒，下面的公式用于计算适当的最小峰值加速度。 <table><tr><th>电池 Battery</th><th>最小峰值加速度 Minimum peak acceleration</th><th>脉冲持续时间 Pulse duration</th></tr><tr><td>小型电池 Small batteries</td><td>$150g_n$ 或公式结果中的较小值 $150g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{100850}{\text{mass}^*}\right)}$ whichever is smaller</td><td>6毫秒 6ms</td></tr><tr><td>大型电池 Large batteries</td><td>$50g_n$ 或公式结果中的较小值 $50g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{3000}{\text{mass}^*}\right)}$ whichever is smaller</td><td>11毫秒 11ms</td></tr></table> * 质量单位用千克计算 Mass is expressed in kilograms. Each battery shall be subjected to a half-sine shock of peak acceleration depending on the mass of the battery. The pulse duration shall be 6 milliseconds for small batteries and 11	电池 Battery	最小峰值加速度 Minimum peak acceleration	脉冲持续时间 Pulse duration	小型电池 Small batteries	$150g_n$ 或公式结果中的较小值 $150g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{100850}{\text{mass}^*}\right)}$ whichever is smaller	6毫秒 6ms	大型电池 Large batteries	$50g_n$ 或公式结果中的较小值 $50g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{3000}{\text{mass}^*}\right)}$ whichever is smaller	11毫秒 11ms	见表 4 See Table 4	P
电池 Battery	最小峰值加速度 Minimum peak acceleration	脉冲持续时间 Pulse duration										
小型电池 Small batteries	$150g_n$ 或公式结果中的较小值 $150g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{100850}{\text{mass}^*}\right)}$ whichever is smaller	6毫秒 6ms										
大型电池 Large batteries	$50g_n$ 或公式结果中的较小值 $50g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{3000}{\text{mass}^*}\right)}$ whichever is smaller	11毫秒 11ms										
	试验电池和电池组用坚硬支架紧固在试验装置上，支架支撑着每个试验电池组的所有安装面。 Test cells and batteries shall be secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each test battery. 每个电池需经受最大加速度$150g_n$和脉冲持续时间6毫秒的半正弦波冲击。针对大型电池需经受最大加速度$50g_n$和脉冲持续时间11毫秒的半正弦波冲击。 Each cell shall be subjected to a half-sine shock of peak acceleration of $150g_n$ and pulse duration of 6 milliseconds. Alternatively, large cells may be subjected to a half-sine shock of peak acceleration of $50g_n$ and pulse duration of 11 milliseconds. 每个电池组应根据电池组的质量而受到峰值加速度的半正弦波冲击。对于小型电池组的脉冲持续时间应6毫秒，对于大型电池组的脉冲持续时间应为11毫秒，下面的公式用于计算适当的最小峰值加速度。 <table><tr><th>电池 Battery</th><th>最小峰值加速度 Minimum peak acceleration</th><th>脉冲持续时间 Pulse duration</th></tr><tr><td>小型电池 Small batteries</td><td>$150g_n$ 或公式结果中的较小值 $150g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{100850}{\text{mass}^*}\right)}$ whichever is smaller</td><td>6毫秒 6ms</td></tr><tr><td>大型电池 Large batteries</td><td>$50g_n$ 或公式结果中的较小值 $50g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{3000}{\text{mass}^*}\right)}$ whichever is smaller</td><td>11毫秒 11ms</td></tr></table> * 质量单位用千克计算 Mass is expressed in kilograms. Each battery shall be subjected to a half-sine shock of peak acceleration depending on the mass of the battery. The pulse duration shall be 6 milliseconds for small batteries and 11	电池 Battery	最小峰值加速度 Minimum peak acceleration	脉冲持续时间 Pulse duration	小型电池 Small batteries	$150g_n$ 或公式结果中的较小值 $150g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{100850}{\text{mass}^*}\right)}$ whichever is smaller	6毫秒 6ms	大型电池 Large batteries	$50g_n$ 或公式结果中的较小值 $50g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{3000}{\text{mass}^*}\right)}$ whichever is smaller	11毫秒 11ms	无渗漏， 无排气，无解体， 无破裂和无起火。 No leakage, no venting, no disassemble, no rupture and no fire.	P
电池 Battery	最小峰值加速度 Minimum peak acceleration	脉冲持续时间 Pulse duration										
小型电池 Small batteries	$150g_n$ 或公式结果中的较小值 $150g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{100850}{\text{mass}^*}\right)}$ whichever is smaller	6毫秒 6ms										
大型电池 Large batteries	$50g_n$ 或公式结果中的较小值 $50g_n$ or result of formula $\text{Acceleration } (g_n)=\sqrt{\left(\frac{3000}{\text{mass}^*}\right)}$ whichever is smaller	11毫秒 11ms										

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章节 Clause	标准要求 Requirements	测试结果 Result	判定 Verdict
	milliseconds for large batteries. The formulas below are provided to calculate the appropriate minimum peak accelerations. 每个电池或电池组需在三个互相垂直的安装方位的正方向经受三次冲击，接着在反方向经受三次冲击，总共经受18次冲击。 Each cell or battery is subjected to three shocks in the positive direction followed by three shocks in the negative direction of each of three mutually perpendicular mounting positions of the cell for a total of 18 shocks. 要求电池和电池组无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电池或电池组在试验后的开路电压不小于其在进行这一试验前电压的90%。有关电压的要求不适用于完全放电状态的试验电池和电池组。 Cells and batteries meet this requirement if there is no leakage, no venting, no disassemble, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.		
38.3.4.5	测试 5: 外部短路 Test 5: External Short Circuit 待测试的电池或电池组应加热一段时间，以使其外表面温度达到均匀稳定的 $57\pm4^{\circ}\text{C}$ 的温度。加热时间取决于电池或电池组的大小和设计，并应进行评估和记录。如果这种评估是不可行的，对于小型电池和小型电池组至少在 $57\pm4^{\circ}\text{C}$ 的环境下存放 6 小时，对于大型电池和大型电池组至少在 $57\pm4^{\circ}\text{C}$ 的环境下存放 12 小时。然后电池或电池组在 $57\pm4^{\circ}\text{C}$ 的环境中，应接受一个外部总阻值小于 0.1 欧姆的短路条件。 The cell or battery to be tested shall be shall be heated for a period of time necessary to reach a homogeneous stabilized temperature of $57\pm4^{\circ}\text{C}$, measured on the external case. This period of time depends on the size and design of the cell or battery and should be assessed and documented. If this assessment is not feasible, the exposure time shall be at least 6 hours for small cells and small batteries, and 12 hours for large cells and large batteries. Then the cell or battery at $57\pm4^{\circ}\text{C}$ shall be subjected to one short circuit condition with a total external resistance of less than 0.1 ohm. 这一短路条件应在电池或电池组的外壳温度回到 $57\pm4^{\circ}\text{C}$ 后继续短路 1 小时，或对于大型电池组其外壳温度已下降了一半的最大升温，并保持低于该值。短路和冷却过程至少在环境温度中进行。 This short circuit condition is continued for at least one hour after the cell or battery external case temperature has returned to $57 \pm 4^{\circ}\text{C}$, or in the case of the large batteries, has decreased by half of the maximum temperature increase observed during the test and remains below that value. The short circuit and cooling down	见表 5 See Table 5 无解体， 无破裂，无起火。No disassemble , no rupture and no fire.	P P

章节 Clause	标准要求 Requirements	测试结果 Result	判定 Verdict
	phases shall be conducted at least at ambient temperature. 要求电池和电池组外壳温度不超过 170℃，并且在试验过程中及试验后 6 小时内无解体，无破裂，无起火。 Cells and batteries meet this requirement if their external temperature does not exceed 170℃ and there is no disassemble, no rupture and no fire within six hours of this test.		
38.3.4.6	测试 6: 撞击/挤压 Test 6: Impact / Crush	见表 6 See Table 6	P
	撞击 （适用于直径大于等于 18 毫米的圆柱形电池） Impact (applicable to cylindrical cells not less than 18mm in diameter) 试样电池或元件电池放在平坦光滑的表面上，一根 316 型不锈钢棒横放在试样中心，钢棒直径 15.8 毫米±0.1 毫米，长度至少 6 厘米，或电池最长端的尺度，取二者之长者。将一块 9.1 千克±0.1 千克的重锤从 61±2.5 厘米高处跌落到钢棒和试样交叉处，使用一个几乎没有摩擦的、对落体重锤阻力最小的垂直轨道或管道加以控制。垂直轨道或管道用于引导落锤沿与水平支撑表面呈 90 度落下。 The test sample cell or component cell is to be placed on a flat smooth surface. A 15.8mm±0.1mm diameter, at least 6cm long, or the longest dimension of the cell, whichever is greater, Type 316 stainless steel bar is to be placed across the centre of the sample. A 9.1 kg ± 0.1kg mass is to be dropped from a height of 61 ± 2.5 cm at the intersection of the bar and sample in a controlled manner using a near friction less, vertical sliding track or channel with minimal drag on the falling mass. The vertical track or channel used to guide the falling mass shall be oriented 90 degrees from the horizontal supporting surface. 接受撞击的试样，纵轴应与平坦表面平行并与横放在试样中心的直径 15.8±0.1 毫米弯曲表面的纵轴垂直。每一试样只经受一次撞击。 The test samples is to be impacted with its longitudinal axis parallel to the flat surface and perpendicular to the longitudinal axis of the 15.8mm±0.1mm diameter curved surface lying across the centre of the test samples. Each sample is to be subjected to only a single impact.	N/A	N/A
	要求电池和电池组外壳温度不超过 170℃，并且在试验过程中及试验后 6 小时内无解体，无起火。 Cells and component cells meet this requirement if their external temperature does not exceed 170℃ and there is no disassemble and no fire during the test and within six hours after this test.		

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章节 Clause	标准要求 Requirements	测试结果 Result	判定 Verdict
	挤压（适用于棱柱形、袋装、硬币/纽扣电池和直径小于 18 毫米的圆柱形电池） Crush (applicable to prismatic, pouch, coin/button cells and cylindrical cells less than 18mm in diameter) 将电池或元件电池放在两个平面之间挤压，挤压力度逐渐加大，在第一个接触点上的速度大约为1.5厘米/秒。挤压持续进行，直到出现以下三种情况之一： (a) 施加的力量达到13千牛±0.78千牛； (b) 电池的电压下降至少100毫伏；或 (c) 电池变形达原始厚度的50%或以上。 A cell or component cell is to be crushed between two flat surfaces. The crushing is to be gradual with a speed of approximately 1.5cm/s at the first point of contact. The crushing is to be continued until the first of the three options below is reached. (a) The applied force reaches 13kN±0.78kN; (b) The voltage of the cell drops by at least 100mV; or (c) The cell is deformed by 50% or more of its original thickness. 一旦达到最大压力、电压下降 100 毫伏或更多，或电池变形至少达原厚度的 50%，即可解除压力。 Once the maximum pressure has been obtained, the voltage drops by 100mV or more, or the cell is deformed by at least 50% of its original thickness, the pressure shall be released. 棱柱形或袋装电池应从最宽的一面施压。纽扣/硬币形电池应从其平坦表面施压。圆柱形电池应从与纵轴垂直的方向施压。 A prismatic or pouch cell shall be crushed by applying the force to the widest side. A button/coin cell shall be crushed by applying the force on its flat surfaces. For cylindrical cells, the crush force shall be applied perpendicular to the longitudinal axis. 每个试样电池或元件电池只做一次挤压试验。试样应继续观察 6 小时。试验应使用之前未做过其他试验的电池或元件电池进行。 Each test cell or component cell is to be subjected to one crush only. The test Samples shall be observed for a further 6 h. The test shall be conducted using test cells or component cells that have not previously been subjected to other tests. 要求电池和电池组外壳温度不超过170℃，并且在试验过程中及试验后6小时内无解体，无起火。 Cells and component cells meet this requirement if their external temperature does not exceed 170℃ and there is no disassemble and no fire during the test and within six hours after this test.	无解体， 无破裂，无起火。No disassemble , no rupture and no fire.	P
38.3.4.7	测试 7：过充电 Test 7: Overcharge	见表 7 See Table 7	P

章节 Clause	标准要求 Requirements	测试结果 Result	判定 Verdict
	充电电流必须是制造商建议的最大持续充电电流的两倍。试验的最小电压如下: (a) 制造商建议的充电电压不大于18伏时, 试验的最小电压应是电池组最大充电电压的两倍或22伏两者中的较小者; (b) 制造商建议的充电电压大于18伏时, 试验的最小电压应为最大充电电压的1.2倍。 试验应在环境温度下进行, 进行试验的时间应为 24 小时。 The charge current shall be twice the manufacturer's recommended maximum continuous charge current. The minimum voltage of the test shall be as follows: (a) When the manufacturer's recommended charge voltage is not more than 18V, the minimum voltage of the test shall be the lesser of two times the maximum charge voltage of the battery or 22V. (b) When the manufacturer's recommended charge voltage is more than 18V, the minimum voltage of the test shall be 1.2 times the maximum charge voltage. Tests are to be conducted at ambient temperature; the duration of the test shall be 24 hours.	无分解, 无起火。No disassemble and no fire.	P
38.3.4.8	测试 8: 强制放电 Test 8: Forced discharge	见表 8 See Table 8	P
	每个电池应在环境温度下与 12V 直流电源上进行强制放电, 此直流电源串联在起始电流等于制造商给定的最大放电电流条件下强制放电。 Each cell shall be forced discharged at ambient temperature by connecting it in series with a 12V D.C. power supply at an initial current equal to the maximum discharge current specified by the manufacturer. 将适当大小和额定值的电阻负荷与试验电池串联, 计算得出给定的放电电流。对每个电池进行强制放电, 放电时间(小时)应等于其额定容量除以初始试验电流(安培)。 The specified discharge current is to be obtained by connecting a resistive load of the appropriate size and rating in series with the test cell. Each cell shall be forced discharged for a time interval (in hours) equal to its rated capacity divided by the initial test current (in ampere).	无分解, 无起火。No disassemble and no fire.	P
	要求原电池或充电电池在试验过程中和试验后 7 天内无解体, 无起火。Primary or rechargeable cells meet this requirement if there is no disassemble and no fire during the test and within seven days after the test.		

6、测试数据 Test Data

表 1 Table 1	高度模拟 Altitude simulation						P
样品 编号 Sample No.	电压 Voltage (V)			质量 Mass(g)			有无渗漏，排气， 解体，破裂和起火 Whether leakage, venting, disassemble, rupture, fire (Y/N)
	测试前 Before test	测试后 After test	剩余 residual (%)	测试前 Before test	测试后 After test	损失 loss (%)	
Z1	41.51	41.51	100.000	4031.04	4031.04	0.000	N
Z2	41.53	41.52	99.976	4052.13	4052.13	0.000	N
Z3	41.52	41.52	100.000	4041.52	4041.43	0.002	N
Z4	41.50	41.50	100.000	4036.45	4036.45	0.000	N
X1	41.51	41.51	100.000	4043.14	4043.14	0.000	N
X2	41.52	41.52	100.000	4062.15	4062.15	0.000	N
X3	41.54	41.53	99.976	4025.17	4025.12	0.001	N
X4	41.53	41.53	100.000	4033.54	4033.54	0.000	N

表 2 Table 2	温度试验 Thermal test						P
样品 编号 Sample No.	电压 Voltage (V)			质量 Mass(g)			有无渗漏，排气， 解体，破裂和起火 Whether leakage, venting, disassemble, rupture, fire (Y/N)
	测试前 Before test	测试后 After test	剩余 residual (%)	测试前 Before test	测试后 After test	损失 loss (%)	
Z1	41.51	41.27	99.422	4031.04	4030.48	0.014	N
Z2	41.52	41.28	99.422	4052.13	4051.51	0.015	N
Z3	41.52	41.26	99.374	4041.43	4040.82	0.015	N
Z4	41.50	41.25	99.398	4036.45	4035.91	0.013	N
X1	41.51	41.27	99.422	4043.14	4042.56	0.014	N
X2	41.52	41.28	99.422	4062.15	4061.56	0.015	N
X3	41.53	41.29	99.422	4025.12	4024.53	0.015	N
X4	41.53	41.28	99.398	4033.54	4032.98	0.014	N

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表 3 Table 3	振动 Vibration						P
样品 编号 Sample No.	电压 Voltage (V)			质量 Mass(g)			有无渗漏，排气， 解体，破裂和起火 Whether leakage, venting, disassemble, rupture, fire (Y/N)
	测试前 Before test	测试后 After test	剩余 residual (%)	测试前 Before test	测试后 After test	损失 loss (%)	
Z1	41.27	41.25	99.952	4030.48	4030.48	0.000	N
Z2	41.28	41.28	100.000	4051.51	4051.47	0.001	N
Z3	41.26	41.26	100.000	4040.82	4040.82	0.000	N
Z4	41.25	41.25	100.000	4035.91	4035.91	0.000	N
X1	41.27	41.25	99.952	4042.56	4042.56	0.000	N
X2	41.28	41.28	100.000	4061.56	4061.51	0.001	N
X3	41.29	41.27	99.952	4024.53	4024.53	0.000	N
X4	41.28	41.28	100.000	4032.98	4032.98	0.000	N

表 4 Table 4	冲击 Shock						P
样品 编号 Sample No.	电压 Voltage (V)			质量 Mass(g)			有无渗漏，排气， 解体，破裂和起火 Whether leakage, venting, disassemble, rupture, fire (Y/N)
	测试前 Before test	测试后 After test	剩余 residual (%)	测试前 Before test	测试后 After test	损失 loss (%)	
Z1	41.25	41.25	100.000	4030.48	4030.48	0.000	N
Z2	41.28	41.28	100.000	4051.47	4051.42	0.001	N
Z3	41.26	41.26	100.000	4040.82	4040.82	0.000	N
Z4	41.25	41.25	100.000	4035.91	4035.91	0.000	N
X1	41.25	41.25	100.000	4042.56	4042.51	0.001	N
X2	41.28	41.28	100.000	4061.51	4061.51	0.000	N
X3	41.27	41.27	100.000	4024.53	4024.53	0.000	N
X4	41.28	41.26	99.952	4032.98	4032.98	0.000	N

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表 5 Table 5	外短路 External short circuit	P
样品编号 Sample No.	最高温度 Peak temperature (°C)	有无解体, 破裂, 起火 Whether disassemble, rupture, fire (Y/N)
Z1	57.8	N
Z2	57.6	N
Z3	57.7	N
Z4	57.8	N
X1	57.7	N
X2	57.8	N
X3	57.8	N
X4	57.6	N

表 6 Table 6	挤压 Crush	P
样品编号 Sample No.	最高温度 Peak temperature (°C)	有无解体, 起火 Whether disassemble, fire (Y/N)
Z5	23.5	N
Z6	23.5	N
Z7	23.6	N
Z8	23.7	N
Z9	23.6	N
X5	23.7	N
X6	23.5	N
X7	23.8	N
X8	23.7	N
X9	23.6	N

表 7 Table 7	过度充电 Overcharge	P
样品编号 Sample No.	有无解体, 起火 Whether disassemble, fire (Y/N)	
Z10	N	
Z11	N	
Z12	N	

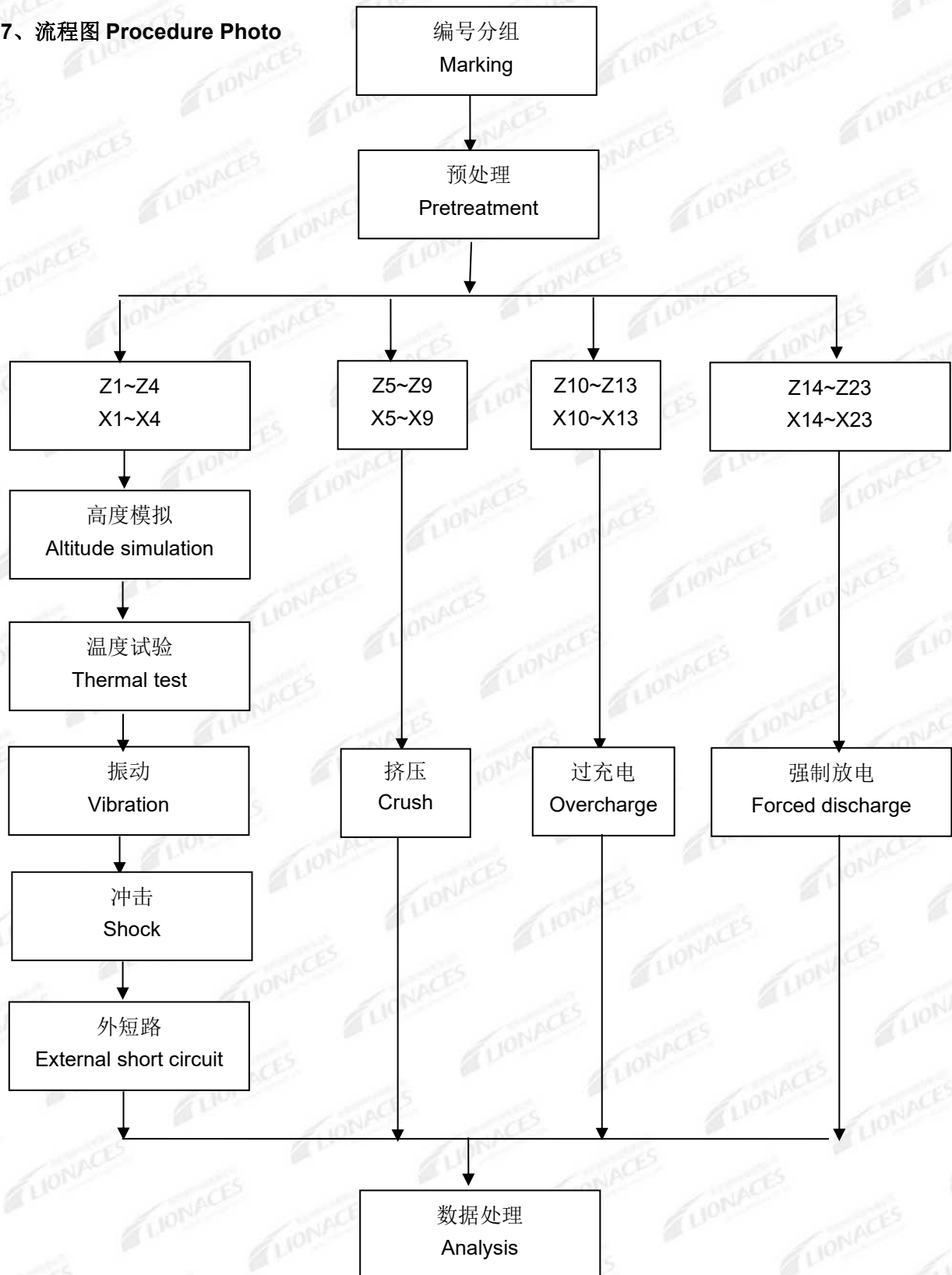
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by Lionaces. It cannot be reproduced except in full with our prior written permission. The document is available on request and the brief information for its validation can be assessable and confirmed on the website, <http://www.lionaces.com>

Z13	N
X10	N
X11	N
X12	N
X13	N

表 8 Table 8	强制放电 Forced discharge	P
样品编号 Sample No.	有无解体, 起火 Whether disassemble, fire (Y/N)	
Z14	N	
Z15	N	
Z16	N	
Z17	N	
Z18	N	
Z19	N	
Z20	N	
Z21	N	
Z22	N	
Z23	N	
X14	N	
X15	N	
X16	N	
X17	N	
X18	N	
X19	N	
X20	N	
X21	N	
X22	N	
X23	N	

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7、流程图 Procedure Photo



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8、测试设备 Test equipment

LA-BT-E069	电子天平秤 Electronic balance
LA-BT-E101	动力电池测试系统 Power battery test system
LA-BT-E004	电池低气压高空模拟试验箱 Battery pressure simulation test tank
LA-BT-E014	高低温(交变)湿热试验箱 High and low temperature (alternating) hot and heat test box
LA-BT-E013	电磁式振动试验机 Electromagnetic vibration testing machine
LA-BT-E086	机械式冲击试验机 Mechanical impact tester
LA-BT-E096	数字式温度记录仪 Digital temperature recorder
LA-BT-E097	电池短路实验机 Battery short circuit tester
LA-BT-E084	电池挤压试验机 Battery crush test instrument
LA-BT-E026	温度记录仪 Temperature recorder
LA-BT-E091 LA-BT-E092 LA-BT-E093 LA-BT-E094	直流稳压电源 DC power supply

----报告结束----
----End of report----

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此 报 告 本 年 度 有 效
有效期至 2026 年 12 月 31 日

MSDS Report

Applicant Name: 申请商:	Zhejiang Paiseec Robot Technology Co., Ltd 浙江派斯科机器人科技有限公司
Product Name: 产品名称:	Lithium ion Battery Pack 锂离子电池组
Model 型号:	DZ37N-12EM
Trade Mark 商标:	N/A
Ratings 额定参数	37V 12Ah 444Wh
Weight 重量:	4040.7g
Dimension 尺寸:	(308.92×134.71×77.13)mm (L×W×H)
Prepared By 编制单位	ITT Testing Technology (Dongguan) Co., Ltd. 山禾检测技术服务（东莞）有限公司 Building 2, No. 15, East 1st Street, Baiyunqian, Dalang, Dongguan, Guangdong, China 广东省东莞市大朗镇白云前东一街 15 号 2 栋
Report No. 报告编号	ITTP2601017A-S-000

Written by 编写:

Approved by 批准人:

Inspected by 审核人:

Seal of NCT 报告单位 (盖章)

Effective Date 生效日期: 2026.01.20





Material Safety Data Sheet

化学品安全技术说明书

* The MSDS is prepared based on the information provided by client. The contents and formats of this MSDS are revised as per client's request. 这份材料安全数据表是根据客户提供的信息编辑，其内容和格式按客户要求来修订。

Section 1-Chemical Product and Company Identification

第一部分-化学品及企业标识

Product Name 产品名称	Lithium ion Battery Pack 锂离子电池组
Model 型号	DZ37N-12EM
Trade Mark 商标	N/A
Ratings 额定参数	37V 12Ah 444Wh
Weight 重量	4040.7g
Manufacturer 制造商	Phylion Battery Co., Ltd 星恒电源股份有限公司
Manufacturer Address 制造商地址	No.181, Jinshajiang Road, New District, Suzhou City, Jiangsu Province, P.R.China 苏州市高新区金沙江路181号
Emergency Telephone 应急电话	13392186663
E-mail 邮箱	holiday@ittjs.com
Inspection according to 鉴定依据	United Nations "Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations" ST/SG/AC.10/1/Rev.23 联合国《关于危险货物运输的建议书-规章范本》第23修订版
Data of received 收样日期	2026-01-15
Prepared Date 编制日期	2026-01-19

**Section 2- Composition Information**

第二部分-成分信息

Chemical Composition/化学成分	CAS No./CAS号	Weight (%) /重量含量 (%)
Lithium manganese oxide/锰酸锂	12057-17-9	34.5
Aluminum/铝	7429-90-5	10
Polyvinylidene fluoride/聚(亚乙烯氟)PVDF	24937-79-9	1
Graphite/石墨	7782-42-5	17
Copper/铜	7440-50-8	15
Styrene-Butadiene polymer/丁苯橡胶 SBR	9003-55-8	2.8
Lithium hexafluorophosphate/六氟磷酸锂	21324-40-3	2.5
Ethylene carbonate/碳酸亚乙酯	96-49-1	5
Carbonate, methyl ethyl/碳酸甲乙酯	623-53-0	5
Dimethyl carbonate/碳酸二甲酯	616-38-6	5
Other/其他	N/A	2.2

Note: CAS number is Chemical Abstract Service Registry Number./注意: CAS 号是化学文摘服务注册号。

N/A=Not apply. /N/A =不适用。

Section 3- Hazards Identification

第三部分-危险性概述

Classification according to GHS GHS 分类	Not a dangerous substance according to GHS 不属于 GHS 危险物品
Hazard Description 危险性描述	Not dangerous with normal use. Do not dismantle, open or shred the battery ingredients contained within or their ingredients products could be harmful. 正常使用没有危险, 不能拆解、打开或分解电池, 里面的材料或成分是有危险的。
Primary Route(s) of Exposure 接触途径	Inhalation, Ingestion, Skin contact and Eye contact. 吸入、食入、皮肤接触、眼睛接触。
Health Hazard 健康危害	In case of abuse, there's Hazard of rupture, fire, heat, leakage of internal components 使用不当的情况下, 有破裂、起火、发烫、内部成分泄漏的危险。 Contact with the electrolyte of battery may be irritating to skin, eyes and mucous tissue. Combustion may produce irritating, corrosive and/or toxic gases. Fumes may cause dizziness or suffocation. 电池的电解质会刺激皮肤、眼睛和黏膜组织。燃烧可能产生刺激性、腐蚀性和/或毒性气体。烟雾可能导致头晕或窒息。

Section 4- First Aid Measures

第四部分-急救措施

Inhalation 吸入	If the internal materials of battery are inhaled, remove from scene immediately to fresh air. If breathing is difficult, give oxygen and seek medical attention immediately. 若吸入电池内的物质, 立即脱离现场至空气新鲜处, 如果呼吸困难给予输氧, 立即就医。
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Ingestion 食入	Do not induce vomiting if the internal materials of battery are swallowed and seek medical attention immediately. 若食入电池内的物质, 禁止催吐, 立即就医。
Skin contact 皮肤接触	If in contact with the internal materials of battery, remove the contaminated clothing, shoes and socks, immediately flush with plenty of water for more than 20 minutes, seek medical attention immediately. 若接触到电池内的物质, 脱下已污染衣服和鞋袜, 用流动的水冲洗 20 分钟以上, 立即就医。
Eye contact 眼睛接触	If in contact with the internal materials of battery, turn up the upper and lower eyelids, rinse with running water for more than 20 minutes, seek medical attention immediately 若接触到电池内的物质, 翻起上下眼睑, 用流动水冲洗 20 分钟以上, 立即就医

Section 5- Fire Fighting Measures

第五部分-消防措施

Characteristics of Hazard 危险特性	Fumes may cause dizziness or suffocation. 燃烧可能产生刺激性、腐蚀性和/或毒性气体。烟雾可能导致头晕或窒息。
Hazardous Combustion Products 燃烧产生的危险物品	Carbon monoxide, carbon dioxide, lithium oxide fumes and so on. 一氧化碳, 二氧化碳, 锂氧化物烟气等。
Fire-extinguishing Methods and Extinguishing Media 灭火方法及灭火剂	Please use water, dry sand and other proper fire extinguishing media. 请使用水, 干燥沙等合适的灭火介质。
Attention in Fire-extinguishing 灭火注意事项	The firemen should put on antigas masks and full fire-fighting suits. 消防人员须佩戴防毒面具、穿全身消防服。

Section 6- Accidental Release Measures

第六部分-泄露应急处理

Personal Precautions, protective equipment, and emergency procedures 个人预防措施、防护装备和应急程序	Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate personal protective equipment as indicated in Section 8. 限制区域, 直到完成清理工作。请勿触摸泄漏的材料。穿戴适当的个人防护设备, 如第 8 部分所示。
Environmental Precautions 环境保护措施	Prevent material from contaminating soil and from entering sewers or waterways. 防止物质污染土壤和进入下水道或水道。
Methods and materials for Containment 方法和材料控制	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately. 出于安全, 阻止泄漏, 可以用干砂或沙土来遏制液体泄露, 立即清理泄漏。
Methods and materials for cleaning up 清理的方法和材料	Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal. 用惰性吸收剂(干砂或沙土)吸收溢出的材料。污染物转移到可吸收废物的容器。收集所有受污染的吸收剂和根据第 13 部分的指令处置。用洗涤剂和水清洁污染区域, 收集所有受污染的洗涤水进行适当处置。

**Section 7- Handling and Storage**

第七部分-操作处置和储存

Handling 操作	Don't handling the batteries in manner that allows terminals to short circuit. Do not open, disassemble, crush or burn battery. 不要以让接头短路的方式对电池进行操作。不要打开，分解，挤压或燃烧电池。 Operators should be trained and strictly follow the operating procedures. 操作人员应经过培训，严格遵守操作规程。
Storage 储存	Store in a cool, ventilated, dry warehouse. Keep away from fire, heat and heat. Keep strong oxidants, inflammables and corrosive products separately. Must be firmly in the inner packaging to effectively prevent short circuits and prevent movement that can cause short circuits. The storage area is equipped with the corresponding varieties and quantities of fire equipment, leakage emergency treatment equipment and appropriate containment materials. 储存于阴凉，通风，干燥的库房内。远离火种，热源，避免高温。应于强氧化剂，易燃物和腐蚀品分开存放。必须牢固在内包装中，以有效防止短路和防止可导致短路的移动。存储区配备相应品种和数量的消防器材，泄露应急处理设备和合适的收容材料。 Keep out of reach of children. 储存在小孩接触不到的地方。
Other Precautions 其他要注意的防范措施	The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity. 拆解、挤压、直接放入火中或高温条件下，电池可能发生爆炸和燃烧。 禁止短接或将电池正负极错误的安装在设备中。

Section 8- Exposure Controls/Personal Protection

第八部分-接触控制和个体防护

Engineering Controls 工程控制	Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor. Keep away from heat and open flame. Store in a cool, dry place. 设计局部排气通风或其它设计来控制粉尘、雾、烟雾和气体。
Personal Protective Equipment 个人防护设备	Respiratory Protection: In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use. Not necessary under conditions of normal use. 呼吸保护：当电池排气阀打开时，应尽量使通风设备开至最大，避免将打开排气阀的电芯局限在某一狭窄空间内。正常操作条件下，呼吸保护是不必要的。正常使用条件下不必考虑。 Protective Gloves: Not necessary under conditions of normal use. 防护手套：正常使用条件下不必考虑。 Other Protective Clothing or Equipment: Not necessary under conditions of normal use. 其他防护服装或设备：正常使用条件下不必考虑。 Personal Protection is recommended for venting battery: Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields. 当电池排气阀打开时，应做好个人防护：呼吸防护，防护手套，防护服装和有护边的安全玻璃罩都是要准备的。

Section 9- Physical and Chemical Properties

第九部分-物理和化学特性

Physical State 物理状态	Form: Solid 形态：固体
-------------------------------	----------------------



	Color: Black 颜色: 黑色
	Odour: Odorless 气味: 无气味
pH, with indication of the concentration pH, 有浓度指示	No data is available 无数据可提供
Melting point/freezing point 熔点/凝固点	No data is available 无数据可提供
Boiling Point, initial boiling point 沸点, 初沸点	No data is available 无数据可提供
Flash Point 闪点	No data is available 无数据可提供
Upper/lower flammability or explosive limits 上/下燃烧或爆炸限值	No data is available 无数据可提供
Vapor Pressure 蒸汽压	No data is available 无数据可提供
Vapor Density: (Air = 1) 蒸汽密度: (空气 = 1)	No data is available 无数据可提供
Density/relative density 密度/相对密度	No data is available 无数据可提供
Solubility in Water 水溶性	No data is available 无数据可提供
n-octanol/water partition coefficient 正辛醇/水分配系数	No data is available 无数据可提供
Auto-ignition temperature 自燃温度	No data is available 无数据可提供
Decomposition temperature 分解温度	No data is available 无数据可提供
Odour threshold 嗅阈	No data is available 无数据可提供
Evaporation rate 蒸发速率	No data is available 无数据可提供
Flammability (soil, gas) 易燃性 (土壤, 气体)	No data is available 无数据可提供
Viscosity 粘度	No data is available 无数据可提供

Section 10- Stability and reactivity

第十部分 稳定性和反应活性

Stability 稳定性	Stable under normal temperatures and pressures. 常温常压下稳定。
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Conditions to Avoid 应避免的条件	Avoid misoperation, open flame, high temperature, mechanical abuse, overcharge, prevent short circuit and prevent movement that can cause short circuit. 避免误操作, 明火, 高温, 机械滥用, 过充电, 防止短路和防止可导致短路的移动。
Hazardous Decomposition Products 危害分解物	Carbon monoxide, carbon dioxide, lithium oxide fumes. 一氧化碳、二氧化碳、氧化锂烟雾。
Incompatible material 不相容材料	Strong oxidizing agent, flammable and corrosive. 强氧化剂, 易燃性和腐蚀性。
Possibility of Hazardous Reaction 危险反应的可能性	No data is available 无数据可提供

Section 11 – Toxicological Information

第十一部分-毒理学资料

Acute toxicity 急性毒性	No data is available 无数据可提供
Irritation 刺激	In the event of exposure to internal contents, vapor fumes may be very irritating to the eyes and skin. 内部物质暴露的情况下, 蒸汽烟雾可能对眼睛和皮肤产生刺激性。
Sensitization 致敏	No data is available 无数据可提供
Reproductive Toxicity 再生毒性	No data is available 无数据可提供
Toxicologically Synergistic Materials 协同材料毒理学	No data is available 无数据可提供

Section 12- Ecological Information

第十二部分-生态学资料

General note 通用信息	Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. 不允许未稀释或大量的产品到达地下水、水道或污水系统。
Anticipated behavior of a chemical product in environment/possible environmental impact/ ecotoxicity 化学产品在环境/可能的环境预期的行为的一种生态毒性	No data is available 无数据可提供
Mobility in soil 土壤中移动性	No data is available 无数据可提供
Persistence and Degradability 持久性和降解性	No data is available 无数据可提供

**Section 13- Disposal Considerations****第十三部分-废弃处置**

Waste Treatment 废弃处置方法	Recycle or dispose of in accordance with government, state & local regulations. 建议遵照国家和地方法规处置或再利用。
Attention for Waste Treatment 废弃注意事项	Deserted batteries couldn't be treated as ordinary trash. Couldn't be thrown into fire or placed in high temperature. Couldn't be dissected, pierced, crushed or treated similarly. Best way is recycling. 废电池不能被当做普通垃圾。不能扔进火中或置于高温下。不能解体，刺穿，破碎或类似的处理。最好的办法是回收利用。

Section 14 – Transport Information**第十四部分-运输信息**

Transport 运输	Tested according to the requirements of the UNITED NATIONS “Manual of Tests and Criteria” Part III, subsection 38.3 经过测试符合联合国《试验和标准手册》第三部分，第 38.3 章节的要求。
UN Number UN 编号	3480&3481&3556 3480&3481&3556
UN Proper shipping name 联合国运输专用名称	Lithium ion batteries or Lithium ion batteries packed with equipment or Lithium ion batteries contained in equipment. Batteries Contained In Battery - Powered Vehicle 锂离子电池，锂离子电池与设备包装在一起或锂离子电池内置于设备中，锂离子电池安装在电池驱动车辆内。
Transport hazard class(es) 运输风险类别	Class 9 (PI 965 Section IB) or N/A(PI 966~PI 967 Section II) 9 类危险品(包装说明 965 第 IB 部分)或者 不适用(包装说明 966~967 第 II 部分)
Packing group 包装等级	N/A 不适用
IATA DGR(66th Edition)	The product can be shipped by air in according to Section IB of PACKING INSTRUCTION 965 or Section II of PACKING INSTRUCTION 966~967 of the 2025 IATA Dangerous Goods Regulations 66 th Edition. 本物品可根据 2025 年 IATA 危险品规则第 66 版包装说明 965 第 IB 部分或包装说明 966~967 第 II 部分空运运输。
ADR(2025 Edition)	The product is not subject to the other provision of ADR(2025 Edition) according to Special Provision 188 本物品根据 ADR 2025 版特殊规定 188, 运输时不受本规则其他规定限制。
RID(2025 Edition)	The product is not subject to the other provision of RID(2025 Edition) according to Special Provision 188 本物品根据 RID 2025 版特殊规定 188, 运输时不受本规则其他规定限制。
IMO IMDG CODE (2024 Edition)	The product is not subject to the other provision of IMO IMDG CODE 2024 Edition(Amdt 42-24) according to Special Provision 188 本物品根据 IMO IMDG CODE 2024 版(Amdt 42-24)特殊规定 188, 运输时不受本规则其他规定限制。
IMDG EmS No.: IMDG EmS 编号:	F-A, S-I
Marine pollutant 海洋污染物	No 不属于



Can be shipped without being declared as Class 9 dangerous goods, when Maritime, Road, Railway meet to Special Provision 188.

当海运，道路，铁路满足特殊规定 188，不需要申报成 9 类危险品装运。

Section 15- Regulatory information

第十五部分 法规信息

Dangerous Goods Regulations

《危险品规则》

Recommendations on the Transport of Dangerous Goods, Model Regulations

联合国《关于危险货物运输的建议书 规章范本》

International Maritime Dangerous Goods

《国际海运危险货物规则》

Technical Instructions for the Safe Transport of Dangerous Goods By Air(TI)

《危险物品安全航空运输技术细则》(技术细则)

European Agreement concerning the International Carriage of Dangerous Goods by Road(ADR)

《国际危险货物道路运输欧洲协定》

Regulations concerning the International Carriage of Dangerous Goods by Rail(RID)

《国际铁路运输危险货物规则》(RID)

List of Railway Dangerous Goods (TB/T 30006-2022)

《铁路危险货物品名表》(TB/T 30006-2022)

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

《危险货物道路运输规则》(JT/T 617-2018)

Classification and code of dangerous goods

《危险货物分类和品名编号》

Occupational Safety and Health Act(OSHA)

《职业安全与健康法》(OSHA)

Toxic Substance Control Act(TSCA)

《有毒物质控制法》(TSCA)

Resource Conservation and Recovery Act(RCRA)

《资源保护和恢复法案》(RCRA)

Code of Federal Regulations(CFR) 49 CFR sections 100-185, 49 CFR -173.185

《联邦条例》(CFR) 49 CFR sections 100-185, 49 CFR -173.185

New EU Battery Regulations (EU) 2023/1542

欧盟新电池法规(EU) 2023/1542

Regulation (EC) No. 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

关于化学品的注册、评估、授权和限制(EC)第 1907/2006 号规例

In accordance with all Federal, State and local laws.

符合所有联邦、州和地方法律。

**Section 16- Other Information**

第十六部分-其它信息

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*****End of report 报告结束*****