

LITHIUM BATTERY TEST SUMMARY AND SUPPLIER INQUIRY

IN ACCORDANCE WITH SUB-SECTION 38.3

OF MANUAL OF TESTS AND CRITERIA

1. Name/Description of battery : LiFePO4 12.8V100Ah (TX-235)
1a. Name/Description of the cells inside the battery:IFP28148115A-52Ah

The test summary of the cells inside the battery must either be presented or under checkpoint 9 and 9a it must be confirmed that the UN 38.3 test summary for the cells is available.

2. Manufacturer of battery	
Name	Dongguan X-Power Intelligent Technology Co.,Ltd
Address	7F & 6F Building 5, No.2 Jintian Road, Huangdong, Fenggang, Dongguan,China
Phone	0086 0769 82856227
Email	kevin@hope-newenergy.com
Website	www.hope-newenergy.com

2a. Manufacturer of the equipment (if the battery is contained in equipment)	
Name	
Address	
Phone	
Email	
Website	

3. Test laboratory of battery	
Name	Shenzhen TCT Testing Technology Co.,Ltd
Address	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Baoan District, Shenzhen
Phone	0086 0755 27673339
Email	tom@tct-lab.com
Website	www.tct-lab.com

4. ID-number and date			
Unique test report identification number	Pengding, will be release in next week	Date of test report	Pengding, will be release in next week

DESCRIPTION OF BATTERY

5. Mark the type of battery with an "X"			
Lithium ion battery	<input checked="" type="checkbox"/>	Lithium metal battery	Lithium hybrid battery

6. Parameters	
Mass in gram (g):	10000
Lithium ion: Indicate watt-hour rating (Wh):	1280
Lithium metal: Indicate lithium metal content in gram (g):	
Lithium hybrid: Indicate lithium metal content in gram (g) and watt-hour rating (Wh):	

7. Physical description of battery
Lithium Iron phosphate (LiFePO4) batteries are a type of lithium ion (Li-Ion) rechargeable battery. Their benefits over the more traditional cobalt-based Li-Ion batteries are increased power output, faster charging, reduced weight and longer life time.

LITHIUM BATTERY TEST SUMMARY AND SUPPLIER INQUIRY

IN ACCORDANCE WITH SUB-SECTION 38.3

OF MANUAL OF TESTS AND CRITERIA

--

8. Model numbers
XP-LFP1250

TESTS AND RESULTS

9. List of tests conducted and results - Mark N/A, pass or fail with an "X"	N/A	Pass	Fail	
T1 - Altitude simulation	A	x		
T2 - Thermal Test	A	x		
T3 - Vibration	A	x		
T4 - Shock	A	x		
T5 - External Short Circuit	A	x		
T6 - Impact - for cylindrical cells having a diameter of at least 18 mm See check point 1a and 9a.	A	x		
T6 - Crush - for prismatic cells, pouch cells, button cells and cylindrical cells having a diameter of less than 18 mm. See check point 1a and 9a.	A	x		
T7 - Overcharge(cell)	A	x		
T8 - Forced Discharge, only valid for cells. See check point 1a and 9a.	A	x		
9 List the tests conducted and results-T9 Text				
9 List the tests conducted and results-T10 Text				

9a. UN 38.3 Test Confirmation for the Cells inside the battery When no separate document for the cells is provided, this confirms that the cells inside the battery (see checkpoint 1.a.) have successfully passed the UN 38.3 test. In this case under checkpoint 9 the T.6 and T.8 must be marked as „passed“ and here under 9.a. „Cell UN 38.3 Test confirmed“ needs to be ticked.	Cell UN 38.3 Test confirmed	x	Cell UN 38.3 Test NOT confirmed	
---	------------------------------------	---	--	--

10. Reference to assembled battery testing requirements		N/A	
--	--	-----	--

11. Reference to the revised edition of the Manual of Tests and Criteria used and to amendments thereto	
--	--

ADDITIONAL SUPPLIER INQUIRY

12. Quality management system for manufacturing batteries Does the manufacturer of the battery manufacture the products based on a documented quality management system according to transport regulations?	yes	x	no	
---	-----	---	----	--

13. Are the following parameters exceeded? Lithium ion battery: more than 100 Wh Lithium metal battery: more than 2 g Lithium Lithium hybrid Battery: more than 1,5 g Lithium and/or more than 10 Wh	yes	x	no	
--	-----	---	----	--

LITHIUM BATTERY TEST SUMMARY AND SUPPLIER INQUIRY

IN ACCORDANCE WITH SUB-SECTION 38.3


OF MANUAL OF TESTS AND CRITERIA

Check point 14 – 16 need to be answered when 13 has been ticked “YES”:					
14. Does each battery incorporates a safety venting device or is designed to preclude a violent rupture under normal conditions of carriage?	Yes	x	no		
15. Is each battery equipped with an effective means of preventing external short circuits?	Yes	x	No		
16. Is each battery containing cells or series of cells connected in parallel equipped with effective means as necessary to prevent dangerous reverse current flow (e.g. diodes, fuses, etc.)?	N/A		Yes	x	No

17. Only in air transport: State of Charge (SoC) for UN 3480 Lithium ion batteries and lithium polymer batteries					
State of Charge (SoC) max. 30 %	N/A		Yes	x	No

BATTERIES INSTALLED IN EQUIPMENT

18. Check point 18 needs to be answered when the batteries are installed in articles:					
18.a) Only button cells enclosed?	Yes		No		
18.b) Number of enclosed batteries per equipment					
When the equipment is intentionally active/switched on during transport e.g. data loggers:					
18.c) Confirmation that no dangerous amount of heat is emitted from the equipment	N/A		Yes		No
18.d) Confirmation that the equipment when transported by air fulfills the defined air transport standards for electromagnetic radiation according to DO-160	N/A		Yes		No

19. Place, Date	20. Title, Surname, First name and signature	21. Company stamp
06-01-2023	CEO Pekcan Pascal 	Technaxx Deutschland GmbH & Co.KG Konrad-Zuse-Ring 16-18 61137 Schöneck-Kilianstädten Fon +49 (0)6187 / 200 92-0 • Fax -16

MSDS Report

MSDS 报告

Applicant's name 委托方名称	Technaxx Deutschland GmbH & Co. KG
Applicant's Address 委托方地址	Konrad-Zuse-Ring 16-18, 61137 Schöneck
Name of Sample 样品名称	Lithium ion battery Pack 锂离子电池组
Model 型号	TX-235
Nominal Voltage 标称电压	12.8V
Rated Capacity 额定容量	100Ah, 1280Wh
Weight 重量	10.05Kg
Size 尺寸 (LxWxT)	(258.0x167.0x210.0)mm
Prepared By 编制单位	Shenzhen TCT Testing Technology Co., Ltd. 深圳市通测检测技术有限公司 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China 广东省深圳市宝安区福海街道桥头社区稔山工业区振昌胶粘制品厂 2101、2201
Report No. 报告编号	TCT230110M036

Written by 编写: Mollie Wu 吴玲玲

Approved by 批准: Tomsin 杨瑞森

Inspected by 审核: Amy Zeng 曾凡

Effective Date 生效日期: 2023.02.01



Material Safety Data Sheet 化学品安全技术说明书**Section 1- Chemical Product & Company Identification****第一部分 化学品及企业标识**

Name of Sample 样品名称	Lithium ion battery Pack 锂离子电池组
Manufacturer's name 制造商名称	Dongguan X-Power Intelligent Technology Co., Ltd 东莞市电小超智能科技有限公司
Manufacturer's Address 制造商地址	7F & 6F Building 5, No.2 Jintian Road, Huangdong, Dongguan, Guangdong, China 东莞市凤岗镇黄洞金田路2号5号楼6楼、7楼
Contact Person 联系人	Kevin Chen
Tel 电话	+86 769 82856227
Emergency Tel 应急电话	+86 769 82856227
E-mail 邮箱	chen@hope-newenergy.com

Section 2- Hazards Identification**第二部分 危险性概述**

Classification of Danger 危险性类别	See section 14. 见第十四部分。
Primary Route(s) of Exposure 浸入途径	Eye, skin contact, ingestion. 眼睛, 皮肤接触, 摄入。
Health Hazard 健康危害	<p>The batteries are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's Hazard of rupture, fire, heat, leakage of internal components, which could cause casualty loss. Abuses including but not limited to the following cases: charged for long time, short circuited, put into fire, whacked with hard object, punctured with acute object, crushed, and broken.</p> <p>正常条件下根据制造商的说明使用电池不会产生危害。使用不当的情况下, 有破裂、起火、发烫、内部成分泄漏的危险, 并可能造成意外损失。使用不当的行为包括但不限于下列情况: 长时间充电、短路、投入火中、硬物撞击、尖物刺破、破碎, 和破裂。</p>

Section 3- Composition/Information on Ingredients

第三部分 成分/组成信息

<i>Chemical Name</i> 化学名称	<i>Concentration or concentration ranges (%)</i> 浓度或浓度范围(%)	<i>CAS Number</i> CAS 号(化学文摘索引登记号)
Lithium Cobalt Oxide 钴酸锂	15-40	12190-79-3
Graphite 石墨	10-30	7782-42-5
Phosphate(1-), hexafluoro-, lithium 六氟磷酸锂	10-30	21324-40-3
Copper 铜	7-13	7440-50-8
Aluminum foil 铝箔	5-10	7429-90-5
Nickel 镍	1-5	7440-02-0

Labeling according to EC directives.

标签根据 EC 指令。

No symbol and Hazard phrase are required.

不需要象形符号和危险短语。

Note: CAS number is Chemical Abstract Service Registry Number.

注意: CAS 号是化学文摘服务注册号码。

N/A=Not apply.

N / A =不适用。

Section 4- First Aid Measures

第四部分 急救措施

<i>Eye</i> 眼睛	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. 万一接触, 立即用大量的清水冲洗至少 15 分钟, 翻起上下眼睑, 直到化学的残留物消失为止, 迅速就医。
<i>Skin</i> 皮肤	Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid. 万一接触, 用大量水冲洗至少 15 分钟, 同时除去污染的衣物和鞋子, 迅速就医。
<i>Inhalation</i> 吸入	Remove from exposure and move to fresh air immediately. Use oxygen if available. 立即从暴露处移至空气清新处, 如果呼吸困难给予输氧, 立即就医。
<i>Ingestion</i> 食入	Ingesting damaged batteries, do not induce vomiting or give food or drink. Seek medical attention immediately. 食入损坏的电池, 不要催吐且不要再吃下食物或喝饮料, 立刻就医。

Section 5- Fire Fighting Measures

第五部分 消防措施

Characteristics of Hazard 危险特性	Dusts at sufficient concentrations can form explosive mixtures with air. Combustion generates toxic fumes. 高密度粉尘遇空气会形成爆炸性混合物。燃烧生成有毒烟雾。
Hazardous Combustion Products 燃烧产生的危险物品	Carbon dioxide. 二氧化碳。
Fire-extinguishing Methods and Extinguishing Media 灭火方法及灭火剂	For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. 对于小型火险, 可使用水枪, 干冰(也就是液态二氧化碳)或化学泡沫。
Attention in Fire-extinguishing 灭火注意事项	Wear self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. 因为压强关系, 要穿戴可呼吸式全身防护装备, MSHA/NIOSH (经认证或等效的), 以及佩戴全套防护装置。

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	In case of rupture. Attention! Corrosive material. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Refer to protective measures listed in Sections 7 and 8. 万一破裂。注意! 腐蚀性物质。避免接触皮肤, 眼睛或衣服。确保空气流通。根据需要使用个人防护装备。将人员撤离到安全区域。让人们远离溢出/泄漏处和处于逆风。参考第七部分和第八部分中列出的防护措施。
Environmental Precautions 环境保护措施	Prevent product from contaminating soil and from entering sewers or waterways. 防止产品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, 可以用干砂或泥土来遏制液体溢出, 立即清理溢出物。
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

	<p>water for proper disposal.</p> <p>用惰性吸收剂(干砂或泥土)吸收溢出的材料。污染物转移到可接受的废物容器中。收集所有受污染的吸收剂,按照第十三部分的说明进行处理。用洗涤剂和水清洁污染区域,收集所有受污染的洗涤水,妥善处理。</p>
--	---

Section 7- Handling and Storage
第七部分 操作处置与储存

Handling 操作	<p>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.</p> <p>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。禁止短路或将电池正负极错误的安装在设备中。</p>
Storage 储存	<p>Store in a cool, dry, well-ventilated area away from incompatible substances. Store locked up. Keep out of the reach of children.</p> <p>储藏于阴凉,干燥,通风处,远离接触会发生反应的材料。存储锁定。放在儿童无法接触的地方。</p>
Other Precautions 其他要注意的防范措施	<p>In case of rupture. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment.</p> <p>万一破裂。按照良好的工业卫生和安全规范进行操作。避免接触皮肤,眼睛或衣服。使用个人防护设备。</p>

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	<p>Use adequate ventilation to keep airborne concentrations low. If used under conditions that generate particulates, the ACGIH TLV-TWA of 3mg/m³ respirable fraction (10mg/m³ total) should be observed.</p> <p>保证空气流通使空气密度保持在低水平。如果在会生成微粒的情况下使用,应仔细观察 3mg/m³ ACGIH TLV-TWA 3 的吸入量(总量为 10mg/m³)。</p>
Personal Protective Equipment 个人防护设备	<p>Eye and Face Protection: None required for consumer use. If there is a Hazard of contact: Tight sealing safety goggles. Face protection shield.</p> <p>眼睛和脸部保护: 消费者无需使用。如果有接触危险: 密封安全护目镜。面部防护罩。</p> <p>Skin and Body Protection: None required for consumer use. If there is a Hazard of contact: Wear protective gloves and protective clothing.</p> <p>皮肤和身体防护: 消费者无需使用。如果有接触危险: 穿戴防护手套和防护服。</p> <p>Respiratory Protection: No protective equipment is needed under normal use conditions. If exposure</p>

	limits are exceeded or irritation is experienced, 柱 ventilation and evacuation may be required. 呼吸系统防护: 正常使用条件下不需要防护设备。如果超过暴露限值或发生刺激, 可能需要通风和疏散。
--	---

Section 9- Physical and Chemical Properties

第九部分 理化特性

Physical State 物理状态	Appearance: Prismatic 外形: 棱柱形
	Color: Black 颜色: 黑色
	Odour: If leaking, smells of medical ether. 气味: 泄漏时, 医用乙醚的气味。
Change in condition: 变化的条件:	
pH 酸碱度	Not applicable as supplied. 不适用。
Flash Point 闪点	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
Flammability 易燃度	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
Relative density: 相对密度	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
Solubility (water) 溶解性 (水溶性)	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
Solubility (other) 溶解性 (其他)	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。

Section 10 – Stability and Reactivity

第十部分 稳定性和反应性

Chemical Stability 化学稳定性	Stable under recommended storage conditions. 在推荐的储存条件下可以保持稳定。
Possibility of Hazardous Reactions 危险反应的可能性	None under normal processing. 正常处理下没有。
Conditions to Avoid 应避免的条件	Exposure to air or moisture over prolonged periods. 暴露在空气中或长时间受潮。
Incompatible materials 不相容材料	Acids, Oxidizing agents, Bases. 酸, 氧化剂, 碱。
Hazardous Decomposition Products	Carbon oxides.

有危害分解物	二氧化碳。
--------	-------

Section 11 – Toxicological Information

第十一部分 毒理学信息

Irritation 刺激	In the event of exposure to internal contents, vapour 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的刺激性。
Sensitization 致敏	Not Available. 不适用。
Reproductive Toxicity 再生毒性	Not Available. 不适用。
Toxicologically Synergistic Materials 协同材料毒理学	Not Available. 不适用。

Section 12-Ecological Information

第十二部分 生态学信息

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接触地下水、水道或污水处理系统。
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	Not Available. 不适用。

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 shouldn't be treated as ordinary trash. Shouldn't be thrown into fire or placed in high temperature. Shouldn't be dissected, pierced, crushed or treated similarly. Best disposal method is recycling. 废电池不能被当作普通垃圾。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。最好的处理办法是回收利用。

Section 14 – Transport Information

第十四部分 运输信息

UN number 联合国货物编号 (UN 编号)	3480
Proper shipping name 运输专用名称	Lithium ion batteries (limited to a maximum of 30% SoC); 锂离子电池 (荷电状态不得超过其额定容量的 30%);
Label(s) / Placard Required 标签/标牌要求	Miscellaneous Lithium batt 杂项锂电池
Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises. 无论是对内还是对外的运输或运输方式, 用户都需要注意或遵守的特殊预防措施。	
ICAO / IATA: 国际民用航空组织/国际航空运输协会:	Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instructions (PI) 965 Section IA appropriate of IATA DGR 64 th (2023 Edition) for transportation. 可根据民用航空组织 (ICAO), TI 或国际航空运输协会 (IATA), DGR 64 th (2023 版) 包装说明(PI) 965 Section IA 相关规定进行空运。
IMDG CODE: 国际海运危险货物规则:	Shipping may be done in accordance with the IMDG Code 2020 Edition (Amdt 40-20). 可根据 IMDG Code 2020 版 (Amdt 40-20) 相关规定进行海运。
DOT: 美国运输部:	Other requirements for the US Department of Transportation (DOT) Subchapter C, Hazardous Materials Regulations if shipped in compliance with 49 CFR 173.185. 美国运输部 (DOT) 有害物质规则 C 分章中的其他规定, 运输符合要求 49 CFR 173.185。
ADR/ ADN: 欧洲国际陆运危险货物协定/关于内 陆水道国际运输危险货物的欧洲协 定:	Transport Requirements for United Nations Economic Commission for Europe (UNECE) ADR/ADN, Applicable as from 1 January 2023. 自 2023 年 1 月 1 日起需符合联合国欧洲经济委员会 (UNECE) ADR / ADN 的运输要求。
In addition, to be permitted in transport each lithium cell and battery types must have passed the applicable tests set out in Subsection 38.3 of the UN Manual of Tests and Criteria. 此外, 每个锂电芯和电池类型都必须通过联合国《关于危险货物运输的建议书 试验和标准手册》第 38.3 节规定的适用测试。	

Section 15 – Regulatory Information

第十五部分 法规信息

Dangerous Goods Regulations

《危险物品规则》

Recommendations on the Transport of Dangerous Goods-Model Regulations (22nd revised edition)

联合国《关于危险货物运输的建议书 规章范本》（22nd 修订版）

Recommendations on the Transport of Dangerous Goods-Manual of Tests and Criteria

联合国《关于危险货物运输的建议书 试验和标准手册》

International Air Transport Association (IATA)

《国际航空运输协会》（IATA）

International Maritime Dangerous Goods (IMDG Code 2020 Edition Amdt 40-20)

《国际海运危险货物规则》（IMDG Code 2020 版 Amdt 40-20）

Technical Instructions for the Safe Transport of Dangerous Goods

《危险货物安全运输技术指南》

Classification and code of dangerous goods (GB 6944-2012)

《危险货物分类和品名编号》 - GB 6944-2012

2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

2012《职业安全与健康标准》危险通信标准（29 CFR 1910.1200）

Toxic Substance Control Act (TSCA)

《有毒物质控制法》（TSCA）

Code of Federal Regulations

《联邦条例》

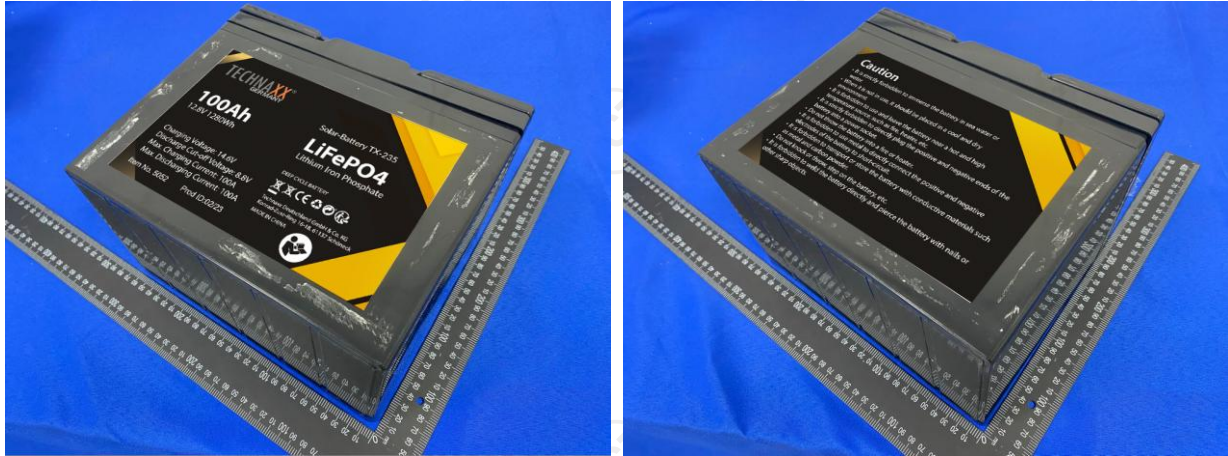
In accordance with all Federal, State and local laws

符合所有联邦、州和地方法律

Section 16 – Additional Information 第十六部分 其他信息

MSDS creation date: 2023 Version: 1.0

Sample photo 样品照片:



To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

本份 MSDS 中的信息只是基于我们当前所拥有的相关材料的信息而编制的，只是为了描述本品的健康、安全与环境需求，以使各有关方面能更好地了解和信任本产品。这些信息只是提供给您，以供考虑、研究和确认。其中的一些危害预防措施描述并非是唯一的。所以本份 MSDS 不能作为使用本品实现任何特定目的的保证。各有关使用者有责任预先完成本品的安全性及其他方面的测试，以评判其是否满足您的使用目的。

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.

本文所包含的数据/信息已经过审核和批准，但本文档不包含出口管制信息。

*****End of report*****
*****报告结束*****

Shenzhen TCT Testing Technology Co., Ltd. 深圳市通测检测技术有限公司
2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

广东省深圳市宝安区福海街道桥头社区稔山工业区振昌胶粘制品厂 2101、2201

Report Search Number 报告查询编号: TCT230110M036

Search System 查询系统: <http://www.tct-lab.com>