

# **MATERIAL SAFETY DATA SHEET**

## **Lithium Cylindrical Rechargeable Battery**

**Model: Lithium-ion Cylindrical Battery**

18500-1400mAh

<b>Prepared by</b>	<b>Approved by</b>
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Date: June. 20 , 2016	Date: June . 20 , 2016

## **Material Safety Data Sheet**

### **Section 1-Chemical Product and Company Identification**

## Product Identification

**Lithium-Ion Cylindrical battery**

**18500-1400mAh**

Norminal Voltage : 3.7V

Equivalent Lithium content :  $\leq 20\text{Wh}$

## Manufacturer

Huizhou Highpower Technology Co.,LTD

Xinhu Industrial Zone, Maan Town, HuiCheng District, Huizhou, Guangdong, China

Postcode : 518110

Telephone : +86-752- 5807919-8008

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## Section 2-Composition/Information on Ingredients

Chemical Composition	Molecular Formula	Weight%	CAS No	OSHA(PEL)	ACGIH(TLV)
Co	Co	<40%	7440-48-4	N/A	N/A
Polyvinylidene fluoride	$(\text{CH}_2\text{CF}_2)_n$	<2%	24937-79-9	N/A	N/A
Graphite powder	C	<30%	7782-42-5	N/A	N/A
Electrolyte	$\text{LiPF}_6 \text{ C}_3\text{H}_4\text{O}_3 \text{ C}_4\text{H}_6\text{O}_3 \text{ C}_3\text{H}_{10}\text{O}_3$	<20%	21324-40-3	N/A	N/A
Polyethylene	$(\text{C}_2\text{H}_4)_n$	0.5-5%	9002-88-4	N/A	N/A
Copper foil	Cu	<10%	7440-50-8	N/A	N/A
Nickel	Nickel	0.5-5%	7440-02-0	N/A	N/A
Aluminum foil	Al	0.5-5%	7429-90-5	N/A	N/A

## Section 3-Hazards Identification

Preparation hazards and	Not dangerous with normal use. Do not dismantle, open or shred Li-ion Battery. Exposure to the ingredients contained within or their ingredients products could be harmful.
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classification	
Appearance, Color, and Odor	Solid object with no odor, no color.
Primary Route(s) of Exposure	These chemicals are contained in a sealed stainless steel enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by Inhalation, Ingestion, Eye contact and Skin contact.
Potential Health Effects:	<p>ACUTE (short term): see Section 8 for exposure controls In the event that this battery has been ruptured, the electrolyte solution contained within the battery would be corrosive and can cause burns.</p> <p>Inhalation: Inhalation of materials from a sealed battery is not an expected route of exposure. Vapors or mists from a ruptured battery may cause respiratory irritation.</p> <p>Ingestion: Swallowing of materials from a sealed battery is not an expected route of exposure. Swallowing the contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.</p> <p>Skin: Contact between the battery and skin will not cause any harm. Skin contact with contents of an open battery can cause severe irritation or burns to the skin.</p> <p>Eye: Contact between the battery and the eye will not cause any harm. Eye contact with contents of an open battery can cause severe irritation or burns to the eye.</p> <p>CHRONIC (long term): see Section 11 for additional toxicological data</p>
Medical Conditions Aggravated by Exposure	Not applicable
Reported as carcinogen	Not applicable

## Section 4-First-aid Measures

Inhalation	If contents of an opened battery are inhaled, remove source of contamination or move victim to fresh air. Obtain medical advice.
Skin contact	If skin contact with contents of an open battery occurs, as quickly as possible remove contaminated clothing, shoes and leather goods. Immediately flush with lukewarm, gently flowing water for at least 30 minutes. If irritation or pain persists, seek medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard.

Eye contact	If eye contact with contents of an open battery occurs, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes while holding the eyelids open. Neutral saline solution may be used as soon as it is available. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto face. Quickly transport victim to an emergency care facility.
Ingestion	If ingestion of contents of an open battery occurs, never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 60 to 240 mL (2-8 oz.) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility.

### Section 5-Fire Fighting Measures

Flammable Properties	In the event that this battery has been ruptured, the electrolyte solution contain within the battery would be flammable. Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.
Suitable extinguishing Media	Use extinguishing media suitable for the materials that are burning.
Unsuitable extinguishing Media	Not available
Explosion Data	Sensitivity to Mechanical Impact: This may result in rupture in extreme cases Sensitivity to Static Discharge: Not Applicable
Specific Hazards arising from the chemical	Fires involving Li-ion Battery can be controlled with water. When water is used, however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended to extinguish the fire
Protective Equipment and precautions for firefighters	As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance. Use NIOSH/MSHA approved full-face self-contained breathing apparatus(SCBA) with full protective gear.
NFPA	Health: 0 Flammability: 0 Instability: 0

### Section 6-Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedures	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.
Environmental Precautions	Prevent material from contaminating soil and from entering sewers or waterways.
Methods and materials for Containment	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.
Methods and materials for cleaning up	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.

## Section 7-Handling and Storage

Handling	Don't handling Li-ion Battery with metalwork. Do not open, disassemble, crush or burn battery. Ensure good ventilation/ exhaustion at the workplace. Prevent formation of dust. Information about protection against explosions and fires: Keep ignition sources away- Do not smoke.
Storage	If the Li-ion Battery are subject to storage for such a long term as more than 3 months, it is recommended to recharge the Li-ion Battery periodically. 3 months: -10 °C ~+40 °C , 45 to 85%RH And recommended at 0°C~+35°C for long period storage. The capacity recovery rate in the delivery state (50% capacity of fully charged) after storage is assumed to be 80% or more. The voltage for a long time storage shall be 3.7V~4.2V range.
	Do not storage Li-ion Battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects. Keep out of reach of children. Do not expose Li-ion Battery to heat or fire. Avoid storage in direct sunlight. Do not store together with oxidizing and acidic

	materials.
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### Section 8-Exposure Controls/Personal Protection

Engineering Controls	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.
Personal Protective Equipment	Respiratory Protection: Not necessary under normal conditions. Skin and body Protection: Not necessary under normal conditions, Wear neoprene or nitrile rubber gloves if handling an open or leaking battery. Hand protection: Wear neoprene or natural rubber material gloves if handling an open or leaking battery. Eye Protection: Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.
Other Protective Equipment	Have a safety shower and eye wash fountain readily available in the immediate work area.
Hygiene Measures	Do not eat, drink, or smoke in work area. Maintain good housekeeping.

### Section 9-Physical and Chemical Properties

Physical State	Form: Solid
	Color: Green
	Odour: Monotony
Change in condition:	
pH, with indication of the concentration	Not applicable
Melting point/freezing point	Not available.
Boiling Point, initial boiling point and Boiling range:	Not available.
Flash Point	Not available.
Upper/lower flammability or explosive limits	Not available.

Vapor Pressure:	Not applicable
Vapor Density: (Air = 1)	Not applicable
Density/relative desity	Not available.
Solubility in Water:	Insoluble
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	If possible remove cell(s)from fire fighting area.if heated above 130°C ,cell(s)can explode/ent. Cell is not flammable but internal organic material will burn if the cell is incinerated.
Decomposition temperature	Not available.
Odout threshold	Not available.
Evaporation rate	Not available.
Flammability (soil, gas)	Not available.
Viscosity	Not applicable

### Section 10- Stability and Reactivity

Stability	The product is stable under normal conditions.
Conditions to Avoid (e.g. static discharge, shock or vibration)	Do not subject Li-ion Battery to mechanical shock. Vibration encountered during transportation does not cause leakage, fire or explosion. Do not disassemble, crush, short or install with incorrect polarity. Avoid mechanical or electrical abuse.
Incompatible Materials	Not Available
Hazardous Decomposition Products	This material may release toxic fumes if burned or exposed to fire
Possibility of Hazardous Reaction	Not Available

### Section 11-Toxicological Information

Irritation	Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.
Sensitization	Not Available
Neurological Effects	Not Available
Teratoaenicity	Not Available
Reproductive Toxicity	Not Available
Mutagenicity (Genetic Effects)	Not Available
Toxicologically Synergistic Materials	Not Available

### Section 12-Ecological Information

General note:	Water hazard class 1(Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Anticipated behavior of a chemical product in environment/possible environmental impace / ecotoxicity	Not Available
Mobility in soil	Not Available
Persistence and Degradability	Not Available
Bioaccumulation potential	Not Available
Other Adverse Effects	Not Available

### Section 13-Disposal Considerations

Product disposal recommendation: Observe local, state and federal laws and regulations. Packaging disposal recommendation: Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local, state and federal laws and regulations.

The potential effects on the environment and human health of the substances used in batteries and accumulations; the desirability of not disposing of waste batteries and accumulators as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling.



## Section 14-Transport Information

This report applies to by sea, by air and by land;

The Li-ion Battery tested according to the requirements of the 5th revised edition of the UN manual of tests and Criteria, Part III, subsection 38.3;

Lithium ion battery was protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit;

The LITHIUM ION BATTERY according to Section II of PACKING INSTRUCTION 965-967 of the 2016 IATA Dangerous Goods regulations 57th Edition may be transported and applicable U.S.DOT regulations for the safe transport of Li-ion Battery.

More information concerning shipping, testing, marking and packaging can be obtained from label master at <http://www.labelmaster.com/>.

The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.

The package must be handled with care and that a flammability hazard exists if the package is damaged; Each package must be labeled with a Li-ion Battery handling label or in addition to the Class 9 hazard label. With regard to transport, the following regulations are cited and considered:

- The International Civil Aviation Organization (ICAO) Technical Instructions.
- The International Air transport Association (IATA) Dangerous Goods Regulations. UN number of lithium battery: UN3480 or UN3481;

UN Proper shipping name/Description (technical name): Lithium ion batteries or Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment;

UN Classification (Transport hazard class): Non dangerous;

Marine pollutant (Y/N): N;

- The International Maritime Dangerous Goods (IMDG) Code.

For lithium-ion batteries by sea, provided that packaging is strong and prevent the products from short-circuit. UN number of lithium battery: UN3480 or UN3481;

UN Proper shipping name/Description (technical name): Lithium ion batteries or Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment;

UN Classification (Transport hazard class): Non dangerous; Marine pollutant (Y/N): Y;

Special Provision: International maritime dangerous goods code (IMDG) 188, 230, 310, 348, 957;

- The US Hazardous Materials Regulation (HMR) pursuant to a final rule issued by RSPA
- The Office of Hazardous Materials Safety within the US Department of Transportations' (DOT) Research and Special Programs Administration (RSPA)

## Section 15-Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)

\_\_\_\_\_ Hazardous

\_\_\_\_\_ V \_\_\_\_\_ Non-hazardous

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## Section 16-Other Information

The information above is believed to be accurate and represents the best information currently available to us. However, concorde makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration of investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

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

No.: GJW2015-4086

# 材料安全数据表

## Material Safety Data Sheet

样品名称: 锂离子电池

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Name of Sample: Li-ion Battery

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委托单位: 东莞市米卡新能源有限公司

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Commissioner: MICA ELECTRONICS CO., LTD.

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威凯检测技术有限公司  
检验专用章

Vkan Certification & Testing Co., Ltd.

## 材料安全数据表

## Material Safety Data Sheet

1. 化学品及企业标识 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION	
样品名称 Name of goods	锂离子电池 Li-ionBattery
样品型号 Type/Mode	Li-ion18500 2S1P 7.4V 1400mAh 10.36Wh
委托单位 Commissioned by	东莞市米卡新能源有限公司 MICA ELECTRONICS CO.,LTD
委托单位地址 Commissioner address	广东省东莞市大朗镇长盛南路 38 号长塘大厦 1105 1105#ChangTang Building, ChangSheng Road 38#, Dalang, Dongguan, Guangdong, P.R. China
生产单位 Manufacturer	东莞市米卡新能源有限公司 MICA ELECTRONICS CO.,LTD
生产单位地址 Manufacturer address	广东省东莞市大朗镇长盛南路 38 号长塘大厦 1105 1105#ChangTang Building, ChangSheng Road 38#, Dalang, Dongguan, Guangdong, P.R. China
鉴定依据 Inspection according to	EEC Directive 93/112/EC 联合国《关于危险品货物运输的建议书》 UN "Recommendations on the TRANSPORT OF DANGEROUS GOODS"
应急电话 Emergency telephone call	0769-82677106
-	接样日期: 2015-07-26 签发日期: 2015.10.26 

Approved by:

批准:



Reviewed by:

审核:



Tested by:

主检:



2. 成分/组成信息 COMPOSITION INFORMATION			
化学成分 Chemical Composition	化学式 Chemical Formula	CAS 号 CAS No.	重量百分比 Weight (%)
三元(镍钴锰) Nickel cobalt manganese	Ni Co Mn	-	38
石墨 Graphite	C24X12	7782-42-5	21.2
六氟磷酸锂 Lithium Hexafluorophosphate	LiPF6	21324-40-3	15.7
聚碳酸酯PC	(C15H16O2 . CH2O3)x	25037-45-0	
碳酸甲乙酯 Methyl ethyl carbonate	C2H3O3	623-53-0	
碳酸二乙酯DEC	C5H10O3	105-58-8	
聚丙烯 Polypropylene	C3H6	9003-07-0	0.8
铜 Copper	Cu	7440-50-8	8.7
铝 Aluminum	Al	7429-90-5	5.6

3. 危险性概述 Hazards Identification	
爆炸危险性 Explosive risk	该物品不属于爆炸危险品 This article does not belong to the explosion dangerous goods
易燃危险性 Flammable risk	该物品不属于易燃危险品 This article does not belong to the flammable material
氧化危险性 Oxidation risk	该物品不属于氧化危险品 This article does not belong to the oxidation of dangerous goods
毒害危险性	该物品不属于毒害危险品

Toxic risk	This article does not belong to the toxic dangerous goods
放射危险性 Radioactive risk	该物品不属于放射危险品 This article does not belong to the radiation of dangerous goods
腐蚀危险性 Mordant risk	该物品不属于腐蚀危险品 This article does not belong to the corrosion of dangerous goods
其他危险性 other risk	该物品为锂离子电池,瓦时率 16.28Wh, 属于锂离子电池 (包括锂离子聚合物电池) This article is Li-ionBattery Watt hour rate 16.28Wh, which belong to the Lithium ion batteries (including lithium ion polymer batteries)

#### 4. 急救措施 First aid measures

##### 眼睛:

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。

##### Eye

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

##### 皮肤:

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。

##### Skin

Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

##### 吸入:

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。

##### Inhalation

Remove from exposure and move to fresh air immediately. Use oxygen if available.

##### 食入:

引用两杯牛奶或水。如果当事人仍然清晰可以采取催吐的方法, 并且立即就医。

##### Ingestion

Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician

#### 5. 消防措施 Fire-fighting measures

燃点: 不适用

Flash Point: N/A.

自燃温度: 不适用

Auto-Ignition Temperature: N/A.

灭火介质: 大量水 (降温), 二氧化碳

Extinguishing Media: Water, CO<sub>2</sub>.

特殊灭火程序: 自给式呼吸器

**Special Fire-Fighting Procedures**

Self-contained breathing apparatus.

**异常火灾或爆炸：**当电芯暴露于过热的环境中时，安全阀可能会打开。

**Unusual Fire and Explosion Hazards**

Cell may vent when subjected to excessive heat-exposing battery contents.

**燃烧产生的危险物品：**一氧化碳，二氧化碳，锂氧化物烟气

**Hazardous Combustion Products**

Carbon monoxide, carbon dioxide, lithium oxide fumes.

**6. 泄露应急处理  
Accidental release measures****为防止电池材料泄露或释放采取的措施**

如果电池内部材料泄露，试验人员应立刻撤离试验区直到烟气消散。将通风设备打开吹散危险性气体。用抹布擦净试验区，清除溢出的液体，将泄露电池放进塑料袋中，然后放进钢制容器。避免皮肤和眼睛接触或吸入有害气体。

**Steps to be Taken in case Material is Released or Spilled**

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

**废弃物处置方法**

建议将电池完全放电，消耗电池内部的锂金属，并且深埋于土壤中。

**Waste Disposal Method**

It is recommended to discharge the battery to the end, to use up the metal lithium inside the battery, and to bury the discharged battery in soil..

**7. 操作处置和储存  
Handling and storage**

禁止打开、毁坏或焚烧电池，因为电池有可能在这些处理过程中发生爆炸、破裂或泄露等事故。禁止将电池短路、过充、强制放电或扔入火中。禁止挤压刺穿电池或将电池浸入溶液中。

The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

**操作处置和储存中的防范措施**

禁止物理或电滥用，禁止高温储存，最好将电池储存在阴凉、干燥、通风等温度变化较小的环境中。禁止将电池接触加热设备或将电池直接暴露与阳光中。

**Precautions to be taken in handling and storing**

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

**其他要注意的防范措施**

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。

### **Other Precautions**

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.

## **8. 接触控制/个人防护 Exposure controls/personal protection**

### **呼吸防护:**

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。

### **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.

### **通风条件**

正常使用条件下不需要。

### **Ventilation**

Not necessary under conditions of normal use.

### **防护手套**

正常使用条件下不需要。

### **Protective Gloves**

Not necessary under conditions of normal use.

### **其他防护服装或设备**

正常使用条件下不需要。

### **Other Protective Clothing or Equipment**

Not necessary under conditions of normal use.

### **电池开阀试验时应做好个人防护**

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。

### **Personal Protection is recommended for venting battery**

Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

## **9. 物理和化学特性 Physical and chemical properties**

**外形:** 方形

**Appearance:** Quadrate shape

**认证编号:** RZUN2015-2135

**Ref, No.:** RZUN2015-2135

**气味:** 泄漏时, 有醚的气味。

**Odour:** If leaking, smells of medical ether.

**酸碱度:** 不适用

**pH:** Not applicable as supplied.

**燃点:** 除单个电芯暴露试验外其他不适用。

**Flash Point:** Not applicable unless individual components exposed.



**可燃性:** 除单个电芯暴露试验外其他不适用。

**Flammability:** Not applicable unless individual components exposed.

**相对密度:** 除单个电芯暴露试验外其他不适用。

**Relative density:** Not applicable unless individual components exposed

**溶解性 (水溶性):** 除单个电芯暴露试验外其他不适用。

**Solubility (water):** Not applicable unless individual components exposed

**溶解性 (其他):** 除单个电芯暴露试验外其他不适用。

**Solubility (other):** Not applicable unless individual components exposed

## 10. 稳定性和反应活性 Stability and reactivity

**稳定性:** 产品在第 7 节所述的条件下稳定。

**Stability:** Product is stable under conditions described in Section 7.

**应避免的条件:** 加热 70°C 以上或焚烧。变形。毁坏。粉碎。拆卸。过充电。短路。长时间暴露在潮湿的条件下。

**Conditions to Avoid :** Heat above 70°C or incinerate. Deform. Mutilate. Crush. Disassemble. Overcharge. Short circuit. Expose over a long period to humid conditions.

**应避免的材料:** 氧化剂, 碱, 水。

**Materials to avoid:** Oxidising agents, alkalis, water.

**危险分解物:** 有毒烟雾, 并可能形成过氧化物。

**Hazardous Decomposition Products :** Toxic Fumes, and may form peroxides.

**聚合危害:** 不适用

**Hazardous Polymerization :** N/A.

如果发生泄露, 避免与强氧化剂, 无机酸, 强碱, 卤代烃接触。

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons.

## 11. 毒理学资料

### Toxicological information

**标志及症状:** 无, 除非电池破裂。

**Signs & symptoms:** None, unless battery ruptures.

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。

In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.

**吸入:** 对肺有刺激性。

**Inhalation:** Lung irritant.

**皮肤接触:** 对皮肤刺激性。

**Skin contact:** Skin irritant.

**眼睛接触:** 对眼睛有刺激性。

**Eye contact:** Eye irritant

**食入:** 吞下中毒。

**Ingestion:** Poisoning if swallowed..

下列情况下健康状况会恶化: 万一发生与电池内部材料接触的事故, 轻微或严重的刺激, 都可能使皮肤出现干燥和灼烧的感觉, 并且损坏靶器官 (肝脏, 肾脏) 的神经。

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to server irritation, burning and dryness of the skin may occur, Target

organs nerves, liver and kidneys.

## 12. 生态学资料 Ecological information

**对哺乳动物的影响:** 目前未知。

**Mammalian effects:** None known at present.

**生态毒性:** 目前未知。

**Eco-toxicity:** None known at present.

**生物体内积累:** 慢慢地生物降解。

**Bioaccumulation potential:** Slowly Bio-degradable.

**环境危害:** 目前没有已知的环境危害。

**Environmental fate:** None known environmental hazards at present.

## 13. 废弃处置 Disposal consideration

不要焚烧, 或使电池温度超过 70° C, 这种滥用可导致泄漏和/或电池爆炸。按照相应的地方性法规处理。

Do not incinerate, or subject cells to temperature in excess of 70°C, Such abuse can result in loss of seal leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations.

## 14. 运输信息 Transport information

**运输标签:** 锂电池标签

**Label for conveyance:** Lithium Battery Label.

**UN 编号:** UN3480

**UN Number:** UN3480

**包装级别:** 不适用

**Packaging Group:** N/A

**EmS 编号:** F-A,S-I

**EmS No:** F-A,S-I

**海洋污染物:** 无

**Marine pollutant:** No

**正确的装运名称:** 锂离子电池

**Proper Shipping name:** Li-ion Batteries

**危害分类:** 货物应遵守 IATA 第 56 版 DGR 手册包装说明 965 第 IB 节规定 (2015 年版) 和特殊规定 188 海运危险货物规则 (Amdt. 36-12) 2012 年版, 包括通过 UN38.3 测试手册要求。

**Hazard Classification:** The goods shall be complied with the requirements of Section IB of Packing Instructions 965 of 56th DGR Manual of IATA (2015 edition) or special provision 188 of IMDG CODE (Amdt. 36-12) 2012 Edition, including the passing of the UN38.3 test.

## 15. 法规信息 Regulation information

法律信息

Law information

《危险物品规则》

《Dangerous Goods Regulations》

《对危险货物运输的有关规定的建议》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《国际海运危险货物规则》  
《International Maritime Dangerous Goods》  
《危险品安全运输技术指令》  
《Technical Instructions for the Safe Transport of Dangerous Goods》  
《危险货物分类和品名编号》  
《Classification and code of dangerous goods》  
《职业安全卫生法》  
《Occupational Safety and Health Act》 (OSHA)  
《有毒物质控制法》  
《Toxic Substance Control Act》 (TSCA)  
《消费产品安全法》  
《Consumer Product Safety Act》 (CPSA)  
《联邦环境污染控制法》  
《Federal Environmental Pollution Control Act》 (FEPCA)  
《石油污染法案》  
《The Oil Pollution Act》 (OPA)  
《超级基金修正案和再授权法案Ⅲ(302/311/312/313)》  
《Superfund Amendments and Reauthorization Act Title Ⅲ(302/311/312/313)》 (SARA)  
《资源保护及恢复法案》  
《Resource Conservation and Recovery Act》 (RCRA)  
《安全饮用水法》  
《Safety Drinking Water Act》 (CWA)  
《加州 65 提案》  
《California Proposition 65》  
《美国联邦法规》  
《Code of Federal Regulations》 (CFR)

根据所有联邦、州和地方法律。

In accordance with all Federal, State and local laws.

## 16. 其他信息 Other information

本文件仅对由委托方（东莞市米卡新能源有限公司）提供的，并由东莞市米卡新能源有限公司生产的电池（Li-ion18500 2S1P）有效。该电池的成分信息由委托方提供并承诺其完整性和准确性。用户应仔细阅读此文件，并按照正确的方法使用电池，如因电池使用不当造成的损害或损失，威凯检测技术有限公司（CVC）不承担任何责任。

This file is only effective to the batteries (Li-ion18500 2S1P) provided by commissioner (MICA ELECTRONICS CO.,LTD which manufactured by MICA ELECTRONICS CO.,LTD The commissioner provides the composition information of batteries, and promises its integrity and accuracy. Users should read this file carefully, and use the batteries in correct method. Vkan Certification & Testing Co., Ltd. (CVC) doesn't assume responsibility for any damage or loss because of misuse of batteries.

## 注 意 事 项

### Important Notice

1. 本鉴定报告书仅对送检样品有效。

This report is valid for the tested samples only.

2. 申请人提供的样品须与实际运输货物一致。

The goods of transporting must be insure conformity with the testing samples.

3. 本鉴定报告书无检验单位印章、骑封章无效。

This report is invalid without the official stamp of CVC and Paging seal of CVC.

4. 本鉴定报告书无批准人、审核人及鉴定人签名无效。

This report is invalid without the signatures of Ratifier, Reviewer and Testing engineer.

5. 本鉴定报告书涂改无效。

This report is invalid if altered.

6. 本鉴定报告仅原件有效，复印件、传真件及电子版均无效。

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