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报告编号

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# MSDS REPORT

## MSDS 报告

Client Name : Xinxiang Boyan Power Supply Co.,Ltd.  
委托单位 : 新乡市博研电源有限公司

Address : No.3 building, xinzhao grand view park, huixian city, henan province.  
地址 : 河南省辉县市新潮大观园 3 号楼

Product Name : Ni-Cd Battery  
产品名称 : 镍镉电池

Date : Jan. 06, 2022  
日期 : 2022 年 01 月 06 日

Shenzhen Tiansu Calibration and Testing Co.,Ltd

深圳天溯计量检测股份有限公司



Shenzhen Tiansu Calibration and Testing Co.,Ltd  
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MSDS



J3-2021-A01-0018

**MATERIAL SAFETY DATA SHEET**  
**材料安全数据清单**

**1. Chemical Product and Company Identification产品及申请公司信息**

Sample name: Ni-Cd Battery  
样品名称 镍镉电池

Sample model: AA100mAh, AA150mAh, AA200mAh, AA250mAh, AA300mAh, AA350mAh, AA400mAh, AA450mAh, AA500mAh, AA600mAh, AA700mAh, AA800mAh, AA900mAh, AA1000mAh, AA1100mAh, AA1200mAh, AA1300mAh, AA1400mAh, AA1500mAh, AA1600mAh, AA1700mAh, AA1800mAh, AA1900mAh, AA2000mAh, AA2100mAh, AA2200mAh, AA2300mAh, AA2400mAh, AA2500mAh, AA2600mAh, AAA100mAh, AAA150mAh, AAA200mAh, AAA250mAh, AAA300mAh, AAA350mAh, AAA400mAh, AAA450mAh, AAA500mAh, AAA600mAh, AAA700mAh, AAA800mAh, AAA900mAh, AAA1000mAh, 1/3AAA80mAh, 1/3AAA100mAh, 1/3AAA120mAh, 1/3AAA150mAh, 1/3AAA180mAh, 1/3AAA200mAh, 2/3AA100mAh, 2/3AA150mAh, 2/3AA200mAh, 2/3AA250mAh, 2/3AA300mAh, 2/3AA350mAh, 2/3AA400mAh, 2/3AA450mAh, 2/3AA500mAh, 2/3AA550mAh, 2/3AA600mAh, 2/3AAA100mAh, 2/3AAA150mAh, 2/3AAA200mAh, 2/3AAA250mAh, 2/3AAA300mAh, 2/3AAA350mAh, 2/3AAA400mAh, 2/3AAA450mAh, 2/3AAA500mAh, 2/3AAA550mAh, 2/3AAA600mAh, SC600mAh, SC700mAh, SC800mAh, SC900mAh, SC1000mAh, SC1100mAh, SC1200mAh, SC1300mAh, SC1400mAh, SC1500mAh, SC1600mAh, SC1700mAh, SC1800mAh, SC1900mAh, SC2000mAh, SC2100mAh, SC2200mAh, SC2300mAh, SC2400mAh, SC2500mAh, SC2600mAh, SC2700mAh, SC2800mAh, SC2900mAh, SC3000mAh, C1500mAh, C1800mAh, C2000mAh, C2500mAh, C3000mAh, C3500mAh, C4000mAh, D3000mAh, D3500mAh, D4000mAh, D4500mAh, D5000mAh, D6000mAh, D7000mAh, D8000mAh, 40 mAh, 80 mAh

Manufacturer: Xinxiang Boyan Power Supply Co.,Ltd.  
制造商 新乡市博研电源有限公司

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批准

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## 2. Hazards Summarizing 危险概述

### Routes of entry 进入途径:

1. Inhalation- During normal use inhalation is an unlikely route of exposure due to containment of hazardous materials within the battery case. However, should the batteries be exposed to extreme heat or pressures causing a breach in the battery cell case, exposure to the constituents may occur. skin and eyes will be heat injured when contacted with the substances contained in the battery, because it is strongly corrosive. Take it by accident can cause chemical burn of the alimentary canal, anabrosis and bleeding of the mucous membrane, and shock. Nickel compounds are carcinogenic. Cobalt compounds could cause erythremia, cardiomyopathy and goiter.

吸入-在正常情况下,由于密封,是不太可能接触到电池内的有害物质。然而,电池若是暴露在极热的情况下或挤压,导致电池破损成分泄漏.电池放出的化学物质会将皮肤和眼睛受伤,因为它是具有强烈腐蚀性。化学物质会灼伤消化道的黏膜糜烂出血和休克。镍化合物致癌。钴化合物可能会导致红细胞增多、心肌病和甲状腺肿大。

2. Ingestion- If the battery case is breached in the digestive tract, the electrolyte may cause localized burns.

摄入-如果电池被破坏的情况,存在于消化道中,电解液可能引起局部烧伤。

3. Skin Absorption:-No evidence of adverse effects from available data.  
皮肤吸收-没有不利影响的证据表明和可用数据。

4. Skin Contact:-Exposure to the electrolyte contained inside the battery may result in chemical burns. Exposure to nickel may cause dermatitis in some sensitive individuals.

皮肤接触-电池内的电解液暴露在外,含有可能导致烧伤的化学物质。接触镍在某些敏感个体可能会引起皮炎。

5. Eye Contact- Exposure to the electrolyte contained inside the battery may result in severe irritation and chemical burns.

眼睛接触-电池内的电解液暴露在外,含有可能导致严重的刺激和化学烧伤的物质。

### Health harm 健康损害:

1. Carcinogenicity-Nickel has been identified by the National Toxicology Program (NTP) as reasonably anticipated to be a carcinogen. Cobalt has been identified by IARC as a 2B carcinogen.

致癌性-镍已被国家毒理学规划处(NTP)基本确认是致癌物。钴被研究证实为 2B 致癌物。

2. Other Effects of Repeated (Chronic) Exposure- Chronic overexposure to nickel may result in cancer; dermal contact may result in dermatitis in sensitive individuals.

反复接触其他的影响(慢性)-长期过度暴露的镍可能导致癌症,敏感体质人群皮肤接触

可能导致皮炎。

3. Medical Conditions Aggravated by Overexposure- A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.  
过度暴露加重医疗状况-现有的毒理学资料及对材料的物理和化学性质的知识表明，过度暴露有可能加剧现有的医疗状况。

### 3. Composition/Information on Ingredients 原料成分信息

Chemical Name 化学名称	Percent of Content 含量百分比	CAS No. CAS 编号
Manganese dioxide 二氧化锰	36-40	1313-13-9
Graphite 石墨	4-6	7782-82-5
Potassium hydroxide 氢氧化钾	6-8	1310-58-3
Zinc 锌	20-25	7440-66-6
Iron 铁	20-25	7439-89-6
Brass 黄铜	3-5	12597-71-6
Water 水	11-13	7732-18-5

### 4. First Aid Measures 急救措施

**Swallowing:** Do not induce vomiting. Seek medical attention immediately.

吞咽:不要诱导呕吐,立即就医。

**Skin:** If the internal cell materials of an opened battery cell comes into contact with the skin, immediately flush with water for at least 15 minutes.

皮肤:如果打开电池,内部材料接触皮肤,立即用水至少冲洗 15 分钟。

**Inhalation:** If potential for exposure to fumes or dusts occurs, remove immediately to fresh air and seek medical attention.

吸入:如果接触气体或粉尘时,立即呼吸新鲜空气和就医。

**Eyes:** If the contents from an opened battery comes into contact with the eyes, immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention.

眼睛:如果打开电池,内部材料接触眼睛,立即用水冲洗眼睛至少持续 15 分钟和就医。

## 5. Fire Fighting Measures 消防措施

**Flash Point:** N/A.

燃点：不适用。

**Auto-Ignition Temperature:** N/A.

自燃温度：不适用。

**Extinguishing Media:** Water, CO2.

灭火介质：大量水（降温），二氧化碳。

**Special Fire-Fighting Procedures:** Self-contained breathing apparatus.

特殊灭火程序：自给式呼吸器。

**Unusual Fire and Explosion Hazards:** Cell may vent when subjected to excessive heat-exposing battery contents.

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。

**Hazardous Combustion Products:** Carbon monoxide, carbon dioxide, lithium oxide fumes.

燃烧产生的危险物品：一氧化碳，二氧化碳，锂氧化物烟气。

## 6. Accidental Release Measures 偶然的释放措施

Spill and leaks are unlikely because cells are contained in a hermetically-sealed case. If the battery case is breached, do protective clothing that is impervious to caustic materials and absorb or pack spill residues in inert material. Dispose of as a hazardous waste in accordance with applicable state and federal regulations. Resultant spill residues may be characterized as caustic. See Section VII for response to fires or explosions. If there is a great deal leaked, collect and transport them to the professional waste treatment, and wash the ground with plenty of water which should be flushed to the waste water system.

电池在一个密封的情况，不太可能存在泄漏。如果违反了电池的情况下，使用防护服，不接触腐蚀性材料并使用惰性材料吸收泄漏残留物。作为危险废物处置需按照适用的州和联邦法规。合成泄漏残留可能具有腐蚀性。参见第七节应对火灾或者爆炸。如果有大量泄露，需专业的机构收集废物和运输，应该用大量的水清洗地面，冲洗废水处理系统。

## 7. Handling and Storage 操作和贮存

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.

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。

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

操作处置和储存中的防范措施

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.

避免机械或电气滥用，禁止高温储存，最好将电池储存在阴凉、干燥、通风及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在阳光中。

#### 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。

## 8. Exposure Controls/Personal Protection 暴露控制/自我防护

### Respiratory Protection

#### 呼吸防护:

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.

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。

### Ventilation

#### 通风条件

Not necessary under conditions of normal use.

正常使用条件下不必考虑。

### Protective Gloves

#### 防护手套

Not necessary under conditions of normal use.

正常使用条件下不必考虑。

### Other Protective Clothing or Equipment

#### 其他防护服装或设备

Not necessary under conditions of normal use.

正常使用条件下不必考虑。

### Personal Protection is recommended for venting battery

#### 电池开阀试验时应做好个人防护

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

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。

## 9. Physical and Chemical Properties 物理和化学特性

(a) Appearance 外观

Solid 固体

(b) Odor 气味

Monotony 无味

(c) Odor threshold 气味阈值

Not available. 不适用。

(d) pH PH 值

Not available. 不适用。

(e)Melting point/freezing point 熔点/凝固点	Not available. 不适用。
(f)Initial boiling point and boiling range 初始沸点和沸腾范围	Not available. 不适用。
(g)Flash poin 闪点	Not available. 不适用。
(h)Evaporation rate 蒸发速率	Not available. 不适用。
(i)Flammability 易燃性 (固态、气态)	Not available. 不适用。
(j)Upper/lower flammability or explosive limits 上下易燃极限或爆炸极限	Not available. 不适用。
(k)Vapor pressure 蒸汽压力	Not available. 不适用。
(l)Vapor density 蒸汽密度	Not available. 不适用。
(m)Relative density 相对密度	Not available. 不适用。
(n)Solubility(ies) 可溶性	Not available. 不适用。
(o)Partition coefficient: n-octanol/water 分配系数: n-辛醇/水	Not available. 不适用。
(p)Auto-ignition temperature 自燃温度	Not available. 不适用。
(q)Decomposition temperature 自动点火温度	Not available. 不适用。
(r)Viscosity 分解温度	Not available. 不适用。

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

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

稳定性: 产品在第 7 节所述的条件下稳定。

**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。

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

应避免的材料: 氧化剂, 碱, 水。

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

危险分解物: 有毒烟雾, 并可能形成过氧化物。

**Hazardous Polymerization :** N/A.

聚合危害: 不适用。

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

如果发生泄露, 避免与强氧化剂, 无机酸, 强碱, 卤代烃接触。

## 11. Toxicological Information 有害物质信息

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第 8 页 共 11 页**Signs & symptoms:** None, unless battery ruptures.

标志及症状：无，除非电池破裂。

**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。

**Inhalation:** Lung irritant.

吸入：对肺有刺激性。

**Skin contact:** Skin irritant.

皮肤接触：对皮肤刺激性。

**Eye contact:** Eye irritant.

眼睛接触：对眼睛有刺激性。

**Ingestion:** Poisoning if swallowed.

食入：吞下中毒。

**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.

下列情况下会对人体健康产生一定影响：如果与电池内部材料直接接触，皮肤可能会出现干燥、灼烧等轻微或严重的刺激，并且损坏靶器官的神经，肝脏和肾脏。

## 12. Ecological Information生态信息

**Other hazardous effect:-**During normal use, It is not hazardous. If the battery case is breached, the substances inside the battery is hazardous to the environment.

There should especially pay attention to the pollution to the waters.

其它有害作用-在正常使用期间，它并不危险。如果电池外壳遭破坏，电池内部的物质对环境是有害的。应该尤其注意污染的水域。

## 13. Recycling and Disposal回收和处理

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.

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

## 14. Transport Information运输信息

UN number of Batteries, dry: N/A

干电池的UN编号：不适用



UN Proper shipping name/Description(technical name): Batteries, dry

联合国正确运输名称/描述(技术名称): 干电池

3. UN Classification(Transport hazard class): N/A

UN危险品分类(运输危险类别): 不适用

Packing group: N/A

包装等级: 不适用

According to Special Provision A123 of the 2022 IATA Dangerous Goods Regulations 63rd Edition, Examples of such batteries are:

Alkali -manganese, zinc-carbon and nickel-cadmium batteries. Any electrical battery or battery powered device, equipment or vehicle having the potential of a dangerous evolution of heat must be prepared for transport so as to prevent:

根据2022年IATA危险物品规则第63版特别规定A123, 这类电池比如:

碱性电池、碳性电池和镍镉电池。任何此类电池或电池供电的装置、设备或车辆在运输中都必须采取措施来防止以下潜在的危險:

(a) a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or, in the case of equipment, by disconnection of the battery and protection of exposed terminals); and

短路(例如: 如果是电池的话, 需要将暴露的端子做有效的绝缘; 如果是设备的话, 需要断开电池和端子的连接) 和

(b) accidental activation.

意外启动.

The battery is not restricted according to IMO IMDG Code (inc Amdt 40-20).

海运按照IMO IMDG Code (inc Amdt 40-20) 可按普通货物条件办理。

## 15. Regulatory Information 监管信息

《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)  
《资源保护及恢复法案》  
《Resource Conservation and Recovery Act》(RCRA)  
《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. Other Information其他信息

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. Shenzhen Tiansu Calibration and Testing Co.,Ltd., doesn't assume responsibility for any damage or loss because of misuse of batteries.

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，深圳天溯计量检测股份有限公司不承担任何责任。

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6. The test report is valid for the tested samples only.  
本报告仅与送检样品有关。

-- End of report --

-- 报告结束 --