

## Material Safety Data Sheet

### Section 1-Chemical Product and Company Identification

第一节：化学品及企业标识

Battery type: 3v Lithium-Manganese Dioxide Button Cell /Lithium Metal Battery

电池种类：锂金属电池/ 3v 锂-二氧化锰扣式电池

Battery Model: CR2032 Not for recharge

电池适用型号: CR2032 不可充电

Lithium content 锂含量:0.072g

Cell Mass 电池重量: 3.0g

Manufacturer's Name : Dongguan Tuobu Electronic Co.,Ltd.

制造商名称: 东莞市拓步电子有限公司

Emergency & Information Phone No: 86-13924673080

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### Section 2 - Hazards Identification

第二节：危险识别

Hazard description 危险性描述：

This is a battery cell ,Use under normal conditions, the lithium battery is hermetically sealed.Not dangerous with normal use,Do not dismantle,open or shred the battery ingredients contained within or their ingredients products could be harmful.  
钮扣电池在正常使用条件下电池是密封的，正常使用没有危险，不能拆解打开分解电池，里面的材料或成分接触某些部位是有害的。

Primary route 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

Potential Health Effects 潜在健康影响

Inhalation: Vapors or mists from a ruptured battery may cause respiratory irritation

吸入：破裂的电池散发出来的气味会引起呼吸道刺激。

Ingestion:The battery ingredients contained within or their ingredients products can cause serious chemical burns of mouth,esophagus,and gastrointestinal tract.

食入：电池内部的组成成分或原料可以导致嘴，食道和胃肠道的严重化学损伤。

Skin:Skin contact with contents of an open battery can cause severe irritation or burns to the skin

皮肤：皮肤接触到电池的内部化学材料可能会导致刺激损伤皮肤。

Eye:Eye contact with contents of an open battery cn cause severe irritation or burns to the eye.

眼睛：眼睛接触到电池的内部化学材料可能会导致严重的刺激或损伤眼睛。

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### Section3-Composition/Information on Ingredients

#### 第三节 成分/组成信息

Information about the chemical nature of product 产品的化学性质信息:

Substance Name 物质名称	Chemical Identification CAS# 化学 CAS 号	Approx % Weight 重量
Lithium Steel 锂金属	7439 - 93 - 2	2.0%
Propylene Carbonate 碳酸丙烯酯	108 - 32 - 7	3.2%
Manganese Dioxide 二氧化锰	1313 - 13 - 9	31.2%
1,2Dimethoxymethane 乙二醇二甲醚	110-71-4	1.0 %
Lithium perchlorate 高氯酸锂	7791 - 03 - 9	1.28%
Graphite 石墨	7782 - 42 - 5	6%
Steel 钢	65997-19-5	48%
Teflon 聚四氟乙烯	9002-84-0	1.73%
Polypropylene 聚丙烯	9003-07-0	2.8%
Carbon Black 炭黑	1333-86-4	2.79%

### Section 4-First Aid Measures

#### 第4节：急救措施

Description of first aid measures

急救措施描述

General information No special measures required

一般无需采取特殊措施

After eye contact 眼睛接触后:

Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.  
保持眼睑张开，用大量水冲洗眼睛几分钟，如果刺激持续，立即就医。

After skin contact 皮肤接触后:

Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

脱掉被污染的衣服和鞋子，立即用清水和肥皂清洗并彻底冲洗，衣物和鞋子在重复使用前要清洗，如果发生刺激，立即就医。

After inhalation 吸入后:

Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

把受害者移到新的地方，呼吸困难时进行人工呼吸，寻求医疗救助。

After swallowing 吞咽后:

Do not induce vomiting. Get medical attention

不要催吐，寻找医疗救助

### Section 5-Fire-Fighting Measures

#### 第五节：消防措施

Suitable extinguishing media:

合适的灭火方法器材:



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Small Fire:Dry chemical,soda ash,lime or sand.Large Fire:DRY sand,dry chemical,soda ash or lime or withdraw from area and let fire burn.Move containers from fire area if you can do it without risk.

小火:干粉,苏打,石灰或沙子。大火:干燥的沙子,干燥的化学品,苏打或石灰不能扑灭时撤离区域让火燃烧。在没有风险的情况下,将容器从火区移走。

Unsuitable extinguishing media:Water or foam

不合适灭火介质:水或泡沫

Specific Hazards arising from the chemical:Special hazards arising from the substance or mixture Battery may burst and release hazardous decomposition products when exposed to a fire situation.

化学品产生的特殊危害:

由该物质或混合物产生的特殊危险,当电池暴露在火灾的情况下可能会爆裂并释放有害的分解物。

Specific protective actions for fire-fighters:

消防员的具体防护措施:

Wear positive pressure self-contained breathing apparatus

戴正压自给式呼吸器。



## Section 6-Accidental Release Measures

第六节: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.

在清理工作完成之前,禁止进入该区域,不要触摸溢出的物料,穿戴适当的个人防护装备。

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,阻止泄露,可以用干砂或沙土来遏制液体泄露,并清理泄露物。

## Section 7-Handling and storage

第七节:操作处置与储存

Handling 操作:

Do not 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,不要打开分解压或燃烧电池。

Storage 储存:

Do not storage the 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 the battery to heat or fire.Avoid storage in direct sunlight.Do not store together with oxidizing and acidic materials

不要将电池随意丢在盒子或抽屉里,以免电池之间或电池与其它金属物质发生短路,储存在小孩接触不到的地方,不要将电池暴露在火源及热源附近,避免在阳光直射下存储。不要与氧化和酸性物质存储在一起。

## Section 8-Exposure Controls/Personal Protection

第八节:接触控制和个体防护

A complete and good battery is not dangerous. The following is the information after the battery is broken and disassembled.

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完整良好的电池并无危险危害,以下是电池损坏及分解后接触内部材料信息。

The usual precautionary measures for handling chemicals should be followed.

处理化学品时应遵循通常的预防措施。

Keep away from foodstuffs,beverages and feed.

远离食品、饮料和饲料。

Remove all soiled and contaminated clothing immediately.

立即脱去所有被污染的衣物。

Wash hands before breaks and at the end of work.

休息前和结束时洗手。

Personal Protective Equipment 个人防护设备:

Respiratory protection 呼吸防护:

Wear suitable protective mask.

戴上合适的防护口罩。

Hand protection 手部保护:

Wear appropriate protective gloves to reduce skin contact.

佩戴适当的防护手套,减少皮肤接触。

Eye Protection 眼睛保护:

Wear safety goggles or eye protection combined with respiratory protection.

戴上护目镜或眼睛保护与呼吸保护相结合。

Skin and Body Protection 皮肤和身体防护:

Working environment required,wear suitable protective clothing to minimize contact with skin.

工作环境要求,穿合适的防护服,尽量减少与皮肤的接触。

## Section 9- Physical and Chemical Properties

### 第九节: 物理化学性质

Physical State: Form&Button ,Color&Silver,Odour&Odorless

物理状态: 钮扣形, 银色, 无气味

Change in condition 变化的条件:

pH 酸碱度: Not applicable 不适用

Flash Point 闪点: Not applicable 不适用

Flammability 易燃度: Not applicable 不适用

Relative density 相对密度: Not applicable 不适用

Solubility (Water)溶解性(水溶性): Not applicable 不适用

Solubility(Other)溶解性(其它): Not applicable 不适用

## Section 10-Stability and Reactivity

### 第十节: 稳定性和反应性

Stability: stable

稳定性: 稳定

Conditions to Avoid:Flames,sparks,and other sources of ignition,Incinerate,Deform,Mutilate,Crush, short circuit.  
incompatible materials.



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应避免条件:火焰和其他火源, 焚烧, 变形, 毁伤, 粉碎, 短路,不相容的材料。

incompatible materials: Oxidizing agents,acid base。

不相容物质:氧化剂、酸碱。

Hazardous decomposition products:carbon monoxide,carbon dioxide

有害分解产物:一氧化碳, 二氧化碳。

Lithium manganese batteries do not met any of the criteria established in 40CFR 261.2for reactivity

锂锰电池的反应性达不到 40CFR 261.2 的标准。



### Section 11-Toxicological Information

#### 第十一节: 毒理学信息

Toxicity information is available on the battery ingredients in Section 2,but ,generally not applicable to intact batteries as Used by customers。

毒性信息可以在第 2 节的电池成分中找到, 但不适用于客户使用的完整良好的电池。

### Section 12-Ecological Information

#### 第十二节: 生态学信息

If the battery is disposed of on land or in water, the battery case may corrode and liquid leak from the battery. Ecological information has not been reported。

如果电池被丢弃在陆地或水中, 电池外壳可能腐蚀和液体泄漏, 生态信息尚未报道。

### Section13-Disposal Considerations

#### 第十三节废弃处置

Dispose of the batteries according to government regulations。

根据国家政府规定处理电池。

### Section 14-Transport Information

#### 第十四节: 运输信息

Transport Fashion:by air,by sea,by railway,by road

运输方式:空运、海运、铁路、公路。

Separate batteries to prevent short-circuiting.and they should be packed in strong package during transport.Keep away from high temperature and open flames.

电池要选用坚固合适的安全包装, 防止电池在运输过程中造成短路, 远离高温及明火。

The Lithium Manganese Dioxide Button Cell- CR2032 has passed the test UN38.3.In addition,Lithium content less than 0.3g.

CR2032 扣式锂锰电池已通过 UN38.3 测试。此外其单粒电池锂含量小于 0.3 克

Regulatory Parties/监管方	Special Provisions/特别规定
ADR	188,230,310,636,656
IMDG	188,230,310,957
UN	UN3090,UN3091
US DOT	29,A54,A101,A100
IATA, ICAO	Packaging Instructions 968/969/970



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### Air Transportation 航空运输:

2023 IATA Dangerous Goods Regulations 64<sup>th</sup> Edition.2023 国际航空运输协会危险品法规第 64 版。

Shipping Name 运输名称: Lithium Metal Batteries 锂金属电池

UN Number /UN 号:

1.UN3090 -The package contains only lithium metal batteries or cells, 该包装只包含锂金属电池或电池芯。

2.UN3091-Batteries or cells contained in equipment / Batteries or cells packed with equipment,  
电池装在设备里/电池放在包装盒里。

UN3090 -lithium metal cells and batteries transported as cargo are restricted to Cargo Aircraft Only,Hazard Classification:  
Class 9 (Miscellaneous),

当空运运输只包含锂金属电池或电芯包装件时 UN 号为 UN3090, 仅限于货运飞机, 危险分类: 9 级(其他)

DongGuan TuoBu LTD -Lithium-Manganese Dioxide Battery Cell can meet the requirement of IATA Dangerous Goods  
Regulations 64<sup>th</sup> Edition of 2023 Packing Instruction PI 968 - 970.

东莞拓步电子有限公司生产的锂-二氧化锰扣式电池符合 2023 国际航空运输协会危险品法规第 64 版,包装说明书 PI  
968 - 970。

### Ocean Transportation 海洋运输:

IMO, all batteries are regulated as Hazardous Material by the International Maritime Organization (IMO) when transporting  
more than 24 batteries or 12 batteries in a single package. These must be transported according to the requirement in Special  
Provisions“188” and “230”. Batteries are as per IMDG SP:188 and tested as NON DG. Package complies with the special  
provision 188 of IMDG CODE(Amdt.40-20)2020 Edition.

国际海事组织(IMO)规定,当运输超过 24 节电池或 12 节电池时,所有电池都被国际海事组织(IMO)规定为有害物质。  
必须按照特别规定“188”和“230”的要求运输, 电池按 IMDG SP188 标准进行非危测试。包装符合 IMDG CODE  
(Amdt.40-20)2020 版特别规定 SP188。

Dongguan TuoBu LTD -Lithium-Manganese Dioxide battery cell can be transported as Non-Dangerous Goods by vessel as  
these articles satisfy with SP188 of IMO-IMDG Code.

东莞市拓步电子有限公司生产的锂-二氧化锰扣式电池可作为非危险品船舶运输,根据特殊规定 SP188 不受 IMO  
IMDG Code 其他规定限制。

### Section 15-Regulatory Information

#### 第十五节: 法规信息

Special requirement be according to the local regulations.

特殊要求按国家政府当地规定执行。

### Section 16-Other Information

#### 第十六节: 其它信息

1.Issue Date 签发日期 2023.01.01 Valid until 有效期: 2023.12.31。

2.Explanation : This MSDS (Material Safety Data Sheets) contains health, safety and environment information, and  
waswritten by reflecting our company's current technology. This data is not a guarantee for the product's character or  
quality, and should be used only as a reference in relation to safe use of the product.

说明:本 MSDS(材料安全数据表)包含健康、安全和环境信息, 并反映了我们公司的当前技术, 此数据不能保证产品的  
特性及质量标准, 仅作为产品安全使用的参考。

