

Lithium Cell battery

Material Safety Data Sheet

Document Number:CR2032-01

Product Name: **3v Lithium-Manganese Dioxide Button Cell**
(Lithium Metal Battery)

Battery Applicable Models/Sizes: CR2032 Not for recharge ,

IDENTITY (As used on Label and List)

Note : Blank spaces are not permitted if any item is not applicable or no information is available, the space must be marked to indicate that.

SECTION 1 - Identification

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

Emergency & Information Phone No: 86-769-82123458

Address :No.A,Building 6,Binhe Road,Tianxin Quarter,Huangjiang Town,Dongguan,
Guangdong Province .China

URL : <http://www.highestsz.com>

E-mail: highestsz@126.com

SECTION 2 - Hazard(s) Identification

IMPORTANT NOTE :

Use under normal conditions, the lithium battery is hermetically sealed.

Ingestion: Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential of the esophagus. **IMMEDIATELY SEE DOCTOR**; Do not induce vomiting or give food or drink.

Inhalation: Contents of an open battery can cause respiratory irritation.

Skin Contact: Contents of an open battery can cause skin irritation/ or chemical burns.

Eye Contact: Contents of an open battery can cause severe irritation and chemical burns.

SECTION 3:Composition/Information on Ingredients

Information about the chemical nature of product:

| Substance Name | Chemical Identification CAS# | Approx % Weight |
|---------------------|------------------------------|-----------------|
| Lithium Steel | 7439 - 93 - 2 | 2.0% |
| Propylene Carbonate | 108 - 32 - 7 | 3.2% |
| Manganese Dioxide | 1313 - 13 - 9 | 31.2% |
| 1,2Dimethoxymethane | 110-71-4 | 1.0 % |
| Lithium Perchlorate | 7791 - 03 - 9 | 1.28% |
| Graphite | 7782 - 42 - 5 | 6% |
| Steel | 65997-19-5 | 48% |
| Teflon | 9002-84-0 | 1.73% |
| Polypropylene | 9003-07-0 | 2.8% |
| Carbon Black | 1333-86-4 | 2.79% |



SECTION 4:First Aid Measures

Ingestion: Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential of the esophagus. IMMEDIATELY SEE DOCTOR; Do not induce vomiting or give food or drink.

Inhalation :Provide fresh air and seek medical attention.

Skin Contact: Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

Eye Contact: Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

SECTION 5:Fire-Fighting Measures

In case of fire where lithium batteries are present, flood area with water or smother with a Class D fire extinguishant appropriate for lithium metal, such as lith-X. Water may not extinguish burning batteries but will cool the adjacent batteries and control the spread of fire. Burning batteries will burn themselves out. Virtually all fires involving lithium batteries can be controlled by flooding with water. However, the contents of the battery will react with water and form hydrogen gas. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended. A smothering agent will extinguish burning lithium batteries. Emergency Responders should wear self-contained breathing apparatus. Burning lithium manganese dioxide battery produce toxic and corrosive lithium hydroxide fumes.

SECTION 6:Accidental Release Measures

Ventilation Requirements: Room ventilation may be required in areas where there are open or leaking batteries.

Respiratory Protection : Avoid exposure to electrolyte fumes from open or leaking batteries.

Eye Protection: Wear safety glasses with side shields if handling an open or leaking battery.

Gloves: Use neoprene or natural rubber gloves if handling an open or leaking battery. Battery materials should be collected in a leak-proof container.

SECTION 7:Handling and storage

Storage : Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life. In locations that handle large quantities of lithium batteries, such as warehouse, lithium batteries should be isolated from unnecessary combustible.

Mechanical Containment: If potting or sealing the battery in an airtight or watertight container is required, consult your Tuobu Battery Limited representative for precautionary suggestions. Do not obstruct safety release vents on batteries. Encapsulation of batteries will not allow cell venting and can cause high pressure rupture.

Handling: Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy, generate significant heat and can cause the safety release vent to open. Source of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices. Damaging a lithium battery may result in an internal short circuit.

The contents of an open battery, including a vented battery, when exposed to water, may result in a fire and/or explosion. Crushed or damaged batteries may result in a fire.



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If soldering or welding to the battery is required, consult us for proper precaution to prevent seal damage or short circuit.

Charging: This battery is manufactured in a charged state. Its is not designed for recharging. Recharging can cause battery leakage or in some case, high pressure rupture. Inadvertent charging can occur if a battery is installed backwards.

SECTION 8:Exposure Controls/Personal Protection

Ventilation Requirements : N.A.

Respiratory Protection : N.A.

Eyes Protection : N.A.

Gloves : N.A.

*SECTION 9:Physical and Chemical Properties*

Boiling Point : N.A.

Specific Gravity (H₂O = 1) : N.A.

Melting Point : N.A.

Vapor Pressure (mm Hg) : N.A.

Vapor Density (AIR = 1) : N.A.

Evaporation Rate (Butyl Acetate) : N.A.

Solubility in Water : N.A.

Appearance and Odor:Cylindrical Shape, Odorless

SECTION 10:Stability and Reactivity

Stability:stable.

Conditions to Avoid : Stable

Incompatibility : Materials to Avoid

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

SECTION 11:Toxicological Information

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

SECTION 12:Ecological Information

N.A.

SECTION 13:Disposal Considerations

Dispose of the batteries according to government regulations.

SECTION 14:Transport Information

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

The Batteries in all forms of transportation must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in (Strong Carton / Packaging) that prevents spillage of contents. The lithium button cell are exempt from the classification as dangerous goods as they meet the requirements of the special provisions listed below (Essentially, they are properly packaged and labeled, Contains less than 1 gram of lithium and pass the tests defined in UN model regulation section 38.3).

| Regulatory Parties | Special Provisions |
|--------------------|--|
| 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(section II) |

Ref: Summary of Packing Instruction (2022 IATA Dangerous Goods Regulations **63rd Edition**) the minimum requirements necessary to transport as non-restricted goods are as follows.

- 1.For a lithium metal/lithium alloy cell, the lithium content is not more than 0.3g.
- 2.Each package must be displayed a battery handling label. (Tel no and emergency call must be printed on label)
- 3.Each consignment must be accompanied with a declaration of non-dangerous goods document.

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.

ADR, RID, all batteries are regulated as Hazardous Material by the ADR (road) and RID (rail) 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**".

Ocean Transportation

All DongGuan TuoBu lithium coin cells/batteries can be transported as Non-Dangerous Goods by vessel as these articles satisfy with SP188 of IMO-IMDG Code.

Air Transportation

DongGuan TuoBu Lithium cells/batteries can meet the requirement of IATA Dangerous Goods Regulations 63rd Edition of 2022 Packing Instruction PI 968 - 970.

Proper Shipping Name : Lithium Metal Batteries

UN Number : UN3090 (The package contains only lithium metal batteries or cells)

UN3091(Batteries or cells contained in equipment / Batteries or cells packed with equipment,)

Packing Instruction (PI)

- | | |
|-----------------------|---|
| 1.PI 968 Section IA : | Cells, Cargo Aircraft only; net quantity per package Max. 35kg |
| 2.PI 968 Section IB : | Cells, Cargo Aircraft only; net quantity per package Max. 2.5kg |
| 3.PI 969 Section II : | Cells packed with equipment |
| 4. PI 970 Section II: | Cells contained in equipment, button cell batteries |

SECTION 15:Regulatory Information

Special requirement be according to the local regulations.

SECTION 16:Other Information

A. Special requirement be according to the local regulatory.

B. Date of preparation :01,Jan, 2022

C. Latest revision and changes Date : 01,Jan, 2022

D. Explanation : This MSDS (Material Safety Data Sheets) contains health, safety and environment information, and was written 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.

