

# MATERIAL SAFETY DATA SHEET

## 1. Chemical Product and Company Identification

Brand: Vinnic

Product Name: Manganese Dioxide Lithium Battery

Item No.: CR123A、CR2

Manufacturer: CHUNG PAK BATTERY WORKS LIMITED

CHUNG PAK (GUANG DONG) BATTERY INDUSTRIAL CO., LTD

CHUNG PAK INTERNATIONAL DEVELOPMENT LIMITED

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Effective Date: 2025/01/01

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

## 2. Composition/Information on Ingredients

Designation	Manganese Dioxide Lithium Battery	
Hazardous Components	CAS No.	wt%
Lithium	7439-93-2	3.0~4.0
Carbon	7782-42-5	2.0~3.0
Manganese Dioxide	1313-13-9	35.0~45.0
Aluminum	7429-90-5	2.0
1,2-Dimethoxyethane	110-71-4	7.0
Propylene Carbonate	108-32-7	7.0
Lithium perchlorate	7791-03-9	1.0-1.5
Polypropylene	9003-07-0	3.0
Polytetrafluoroethene	9002-84-0	5.0
Ferrum	7439-89-6	25-30
Nickel	7440-02-0	1.0

## 3. Hazards Identification

Fatalness grade:

In accordance with Regulation (EC) No 1272/2008, the sample is divided into dangerous article.

Invasion route:

Skin contact: Contact with battery electrolyte may cause burns and skin irritation.

Eyes contact: Contact with battery electrolyte may cause burns. Eye damage is possible.

Inhalation: Inhalation of vapors or fumes released due to heat or a large number of leaking batteries may cause respiratory and eye irritation.

Ingestion: Ingestion of battery contents may cause mouth, throat and intestinal burns and damage.

**Health hazards:**

The chemical are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused.

**Environment hazards:**

Don't abandon the battery into environment, may cause water or soil pollution.

**Burn & burst danger:**

Do not dispose of battery in fire -may explode. Do not short-circuit battery—may cause burns.

**4. First-aid Measures**

**Eye:**

If the battery is leaking and the contained material contact the eyes, flush the eyes with plenty of water or saline water at least 15 minutes, get medical aid at once.

**Skin:**

If the battery is leaking and the contained material contact the skin, Remove contaminated clothes quickly and rinse the skin with plenty of water at least 15minutes, if irritation or pain persist ,get medical aid at once.

**Inhalation:**

If the battery is leaking, remove to fresh air immediately, Keep the respiratory tract smooth. Use oxygen if available .Get medical aid.

**Ingestion:**

If the battery is leaking and the contained material is ingest, rinse mouth and surrounding area with clear water at once .Get medical at once.

**5. Fire Fighting Measures**

**Danger characteristic:**

Exposure to excessive heat can cause venting of the liquid electrolyte. Battery may burst and release hazardous decomposition products when exposed to a fire situation.

Hazardous combustion products: CO, CO<sub>2</sub>, metal oxides, irritating fumes.

**Fire-Fighting method& media:**

The stuff must equip with filter mask (full mask) or isolated breathing apparatus. The stuff must wear the clothes which can defense the fire in the upwind direction. Remove the container to the open space as soon as possible .Spray water on the containers in the fireplace to keep them cool until finish extinguishment Media: hazy water, foam power, CO<sub>2</sub>, sandy clay.

**6. Accidental Release Measures**

**Emergency treatment:**

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the batteries 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 waste.

**7. Handling and Storage**

**Handling:**

① Do not allow battery terminates to contact each other, or contact with other metals.

- ② Pack batteries in separate plastic bags so that the single batteries are not mixed together.
- ③ Do not expose the battery to excessive physical shock or vibration.
- ④ Do not immerse, throw, and wet a battery in water.
- ⑤ Short-circuiting should be avoided. Short circuit will reduce the life of the battery and can lead to ignition of surrounding materials. Physical contact with short-circuited battery can cause skin burn.
- ⑥ The batteries should not be opened, destroyed or incinerated, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.
- ⑦ Place the cell beyond the child packing and container.
- ⑧ Never apply battery into airtight compartment or sealed container.
- ⑨ Be sure to use the specified charger for battery, and follow the charging instructions correctly.
- ⑩ Do not mix old and new batteries together, neither with Ni-Cd, dry batteries or another manufacturer batteries or product.

**Storage:**

- ① Batteries should be separated from other materials and stored in a noncombustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks.
- ② Keep the sample in the cool, dry and well-ventilated place. Do not exposure to direct sunlight for long periods. Keep away from fire and heating sources. Don't keep the samples with oxidizer and acid.
- ③ Keep batteries in original package until use and do not jumble them.
- ④ Equip with relevant types and quantities of the extinguishment instruments. The storage place should be equipped with suitable shelter materials for divergence handling.

**8. Exposure Control/Personal Protection**

Maximum admissible concentration: No standard yet

Monitoring Method: /

Engineering Control:

Keep away from heat and open flame. Supply with sufficient partial air exhaust. Store in a cool, dry place.

Respiratory Protection:

Not necessary under conditions of normal use. Wear self-contained breathing filter mask if the density exceed in the air. Wear breathing apparatus under the condition of emergency rescue or evacuation.

Eyes Protection:

Not necessary under conditions of normal use. Wear protective glasses if handling a leaking or ruptured battery.

Body Protection:

Not necessary under conditions of normal use. Wear fireproofing, gas defense clothes in case of handling a leaking or ruptured battery.

Hands Protection:

Not necessary under conditions of normal use. Wear chemical resistant rubber.

Other Protections:

No smoking, dining and drinking water in the workplace. Keep good habit of hygiene. Respiratory.

## **9. Physical and Chemical Properties**

Appearance: Physical shape and color as supplied.

Odor: Odorless.

Flash Point: N/A;

Boiling Point: N/A;

Melting Point: N/A;

Proportion: N/A;

Acid Value: N/A;

PH Value: N/A;

Density: N/A

Permission of solvent inhalation: No specific data.

Ignition temperature: No specific data.

Solubility: Insoluble in water.

## **10. Stability and Reactivity**

Stability: Stable under normal temperature and pressure.

Distribution of Ban: strong oxidizer, strong acid and corrosives.

Conditions to Avoid:

Fire source, heating source, disassemble, short circuit, immerse in water or overcharge.

Hazardous Polymerization: No specific data.

Hazardous Decomposition Products:

The battery may release irritative gas once the electrolyte leakage.

## **11. Toxicological Information**

Acute Toxicity: No information is available.

Sub-acute and Chronic Toxicity: No information is available.

Irritation: The liquid in the battery may irritate eyes and skin with any contact.

Sensitization: The liquid in the battery may cause sensitization to some person.

Mutagenicity: No information is available.

Carcinogenicity: No information is available.

Others: Since the materials in this battery are sealed in the can, the potential for exposure to the components of the battery is negligible, when the battery is used as directed. However technical or electrical abuse of the battery may result in the release of battery contents.

## **12. Ecological Information**

Eco-toxicity: No information is available.

Biodegradable: No information is available.

Non-biodegradable: No information is available.

Bioconcentration or biological accumulation: No information is available. Other harmful effects:

Don't abandon the battery into environment, may cause water or soil pollution.

### **13. Disposal Consideration**

Waste disposal methods:

Refer to National or Local regulations before handling. Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in National or Local regulations of hazardous waste treatment and hazardous waste transportation.

Attention abandoned:

The battery should be completely discharged prior to disposal in order to prevent short circuit. The battery contains recyclable materials. It is suggested recycle.

### **14. Transport Information**

The Manganese Dioxide Lithium Battery has passed the test UN38.3.

IATA Proper Shipping Name: Lithium Metal Batteries.

Hazard Class: 9

UN No.: UN3090

Packaging group: II

Weight exceeds the standards, so it belongs to dangerous goods. Cargo only. The goods are packaged according to the packing instruction 968 Section I B of DGR.

When the weight no-exceeds the standard. According to PACKING INSTRUCTION 968 section IB of IATA DGR 66<sup>th</sup> Edition of 2025 for transportation, or the special provision 188 of IMDG (41-22), or the 《Recommendations On The Transport Of Dangerous Goods-Model Regulations》 (23<sup>rd</sup>), the goods are not subject to dangerous goods.

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

Separate Lithium Metal batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles and wet by rain.

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

### **15. Regulatory Information**

Law Information:

《Dangerous Goods Regulation》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《International Maritime Dangerous Goods》

《Technical Instructions for the Safe Transport of Dangerous Goods》

《Classification and code of dangerous goods》

《Occupational Safety and Health Act》 (OSHA)

《Toxic Substances Control Act》 (TSCA)

《Consumer Product Safety Act》 (CPSA)

《Federal Environmental Pollution Control Act》 (FEPCA)

《The Oil Pollution Act》 (OPA)

《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》 (SARA)

《Resource Conservation and Recovery Act》 (RCRA)

《Safety Drinking Water Act》 (CWA)

《California Proposition 65》

《Code of Federal Regulations》 (CFR)

In accordance with all Federal, State and Local laws.

**16. Other information**

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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