



中国认可  
检验  
INSPECTION  
CNAS IB0071



NO.2622060078

# SAFETY DATA SHEET

Product Name: CR2025 LiMnO<sub>2</sub> 3V 150mAh

Effective Date: 2022-06-21

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Shanghai Institute of Chemical Industry Testing Co., Ltd.



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# AN YUAN XIAN KAI WEN KE JI YOU XIAN GONG SI

## SAFETY DATA SHEET

### CR2025 LiMnO<sub>2</sub> 3V 150mAh

#### SECTION1 PRODUCT AND COMPANY IDENTIFICATION

**Product name:** CR2025 LiMnO<sub>2</sub> 3V 150mAh  
**Company:** AN YUAN XIAN KAI WEN KE JI YOU XIAN GONG SI  
**Address:** Factory No. 4, Original Food Industrial Park (now Jiangxi Qian Yi Electronics Industrial Park), Chancheng New District, Anyuan County, Ganzhou City, Jiangxi Province, 342100, P. R. China  
**Email:** cr20321625@126.com  
**Fax:** 86-797-3785199  
**Emergency Phone:** 86-797-3785199  
**Recommend use of the chemical and restrictions on use:** /  
**SDS Number:** 2622060078  
**Effective Date:** 2022-06-21

#### SECTION2 HAZARDS IDENTIFICATION

The product is outside of the scope of GHS system.

##### Main Hazards:

##### Fire or Explosion Hazards:

Lithium metal emits spontaneously flammable gas in contact with water, and the electrolyte may contain flammable liquid.

##### Health Hazards:

Lithium metal is corrosive to eyes and skin, and may cause burns or corrosion in contact. The electrolyte in the battery causes skin irritation and eye irritation.

#### SECTION3 INFORMATION ON INGREDIENTS

**Product name:** CR2025 LiMnO<sub>2</sub> 3V 150mAh

Ingredient	Concentration	CAS No.	EC No.
430 Stainless steel	52.35%	12597-68-1	/
Electrolytic manganese dioxide	30%	1313-13-9	215-202-6
Graphite	4.6%	7782-42-5	231-955-3



Polypropylene	4.4%	9003-07-0	618-352-4
Propylene carbonate	3%	108-32-7	203-572-1
Ethylene glycol dimethyl ether	2%	110-71-4	203-794-9
Lithium metal	1.65%	7439-93-2	231-102-5
1,3-Dioxolane	1.3%	646-06-0	211-463-5
Lithium perchlorate	0.7%	7791-03-9	232-237-2

#### SECTION4 FIRST-AID MEASURES

##### Skin Exposure:

If in contact with the internal materials of battery, remove the contaminated clothing and footwear, immediately flush with plenty of water for at least 20 minutes. Call a physician.

##### Eye Exposure:

If in contact with the internal materials of battery, lift your eyelids immediately and rinse them with running water for more than 20 minutes. Call a physician.

##### Inhalation Exposure:

If the internal materials of battery are inhaled, immediately remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician.

##### Oral Exposure:

Do not induce vomiting if the internal materials of battery are swallowed. Call a physician immediately.

##### Most Important Symptoms/Effects, Acute and Delayed:

No data available.

##### Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:

No data available.

#### SECTION5 FIRE FIGHTING MEASURES

##### Suitable Extinguishing Media:

Suitable: Dry graphite powder, dry sand.

##### Specific Hazards Arising from the Chemical:

Lithium metal can ignite spontaneously in the air when heated to a molten state. It can release hydrogen and energy when reacting with water or acids, which causes fire or even explosion. A molten stream is generated immediately after burning and will disperse and emit thick white smoke, which will shade the fire scene.

##### Special Protective Action for Fire-fighters:

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Fire-extinguishing work is done from the windward. Uninvolved persons should evacuate to a safe place.

#### SECTION6 ACCIDENTAL RELEASE MEASURES

##### Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Entry to noninvolved personnel should be controlled around the leakage area by roping off. Remove all sources of ignition. Water treatment is strictly prohibited. Cut off the source of leakage as much as possible.

**Environmental Precautions:**

Avoid leakage getting into the earth, ditches or waters.

**Methods and Materials for Containment and Cleaning Up:**

In case of small leakage, use dry sand or other non-combustible materials to cover the leakage, and then cover with plastic cloth to reduce scattering and avoid rain. In case of powder leakage, cover the leakage with plastic cloth or canvas to reduce scattering. Keep it dry, and remove it under the guidance of an expert.

**SECTION7 HANDLING AND STORAGE****Precautions for Safe Handling:**

Operators should be trained and strictly abide by operating procedures. Wear appropriate protective clothing and safety gloves. Keep away from ignition sources, heat and flame. No smoking at working site. Handling is performed in an explosion-proof ventilation system and equipment. Do not let the lithium metal contact with water. Avoid disassembling the battery at will and reversing battery polarity within the battery assembly. The battery must be firmly packed in inner packaging so as to effectively prevent short circuits and short circuits caused by movement. In case of leakage of the materials in the battery, avoid directly contact with eyes and skin. Avoid inhalation. Incompatibilities: Acids. Halogens, Combustible materials and Corrosive substances.

**Conditions for Safe Storage, Including Any Incompatibilities:**

Store in a cool, dry, and well-ventilated area. Keep away from ignition sources, heat and flame. Avoid exposure to moisture. Incompatibilities: Acids. Halogens, Combustible materials and Corrosive substances. The battery must be firmly packed in inner packaging so as to effectively prevent short circuits and short circuits caused by movement. Storage place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.

**SECTION8 EXPOSURE CONTROL/PPE****Control Parameters:**

GBZ 2.1-2019 Occupational Exposure Limits for Hazardous Agents in the Workplace - Part 1: Chemical Hazardous Agents:

Manganese and its inorganic compounds (calculated by  $MnO_2$ ): PC-TWA 0.15 mg / m<sup>3</sup>

Polypropylene: Polypropylene dust PC-TWA 5mg / m<sup>3</sup> (total dust)

Graphite dust: PC-TWA 4 mg/m<sup>3</sup> (Total dust) ; PC-TWA 2 mg/m<sup>3</sup> (Respirable dust)

ACGIH:

Manganese dioxide TLV-TWA 0.02mg/m<sup>3</sup> (calculated by manganese, respirable particles) TLV-STEL 0.1mg/m<sup>3</sup> (calculated by manganese, respirable particles)

Graphite: TLV-TWA 2 mg/m<sup>3</sup>

**Appropriate Engineering Controls:**

Mechanical exhaust required. Safety shower and eye bath.

**Individual Protection Measures:****Eye/Face Protection:**

Wear chemical safety glasses.

**Skin Protection:**

Hand Protection: Wear safety gloves.

Body Protection: Wear appropriate protective clothing.

**Respiratory Protection:**

Wear government approved respirator if needed.

**Thermal hazards:**

No data available.



**Other Protect:**

No smoking, drinking and eating at working site. Wash thoroughly after handling.

**SECTION9 PHYSICAL/CHEMICAL PROPERTIES**

<b>Appearance:</b>	Silvery button metal shell
<b>Odor:</b>	Odorless
<b>pH Value:</b>	8-9
<b>Solubility:</b>	Partial soluble in water
<b>Boiling Point, Initial Boiling Point and Boiling Range:</b>	No data available
<b>Melting Point/Freezing Point:</b>	>300°C
<b>Flash Point (Closed Cup):</b>	No data available
<b>Density/Relative Density:</b>	No data available
<b>Kinematic Viscosity:</b>	No data available
<b>Lower/Upper Explosion Limit/Flammabili ty Limit:</b>	No data available
<b>Vapour Pressure:</b>	No data available
<b>Relative Vapor Density: Partition Coefficient N-Octanol/Water( Log Value):</b>	No data available
<b>Autoignition Temperature: Decomposition Temperature:</b>	No data available
<b>Particle characteristics:</b>	No data available
<b>Flammability (Solid, Gas):</b>	No data available

**SECTION10 STABILITY AND REACTIVITY****Reactivity:**

No data available.

**Chemical Stability:**

Stable under normal temperatures and pressures.

**Possibility of Hazardous Reactions:**

No data available.

**Conditions to Avoid:**

Avoid misoperation, exposure to heat and open flame. Avoid mechanical or electrical abuse and overcharge. Prevent short circuits. Prevent movement which could lead to short circuits. Avoid exposure to moisture.

**Incompatible Materials:**

Acids, Halogens, Combustible materials and Corrosive substances.

**Hazardous Decomposition Products:**

Carbon oxides, metal oxides, etc.

**SECTION11 TOXICOLOGICAL INFORMATION**

**Acute Toxicity:**

No data available.

**Skin Corrosion/Irritation:**

Lithium metal is corrosive to skin, and may cause burns or corrosion in contact. The electrolyte in the battery causes skin irritation.

**Serious Eye Damage/Irritation:**

Lithium metal is corrosive to eyes, and may cause burns or corrosion in contact. The electrolyte in the battery causes eye irritation.

**Respiratory Sensitization:**

No data available.

**Skin Sensitization:**

No data available.

**Carcinogenicity:**

No data available.

**Germ Cell Mutagenicity:**

No data available.

**Reproductive Toxicity:**

No data available.

**Specific Target Organ Toxicity -Single Exposure:**

No data available.

**Specific Target Organ Toxicity -Repeated Exposure:**

No data available.

**Aspiration Hazard:**

No data available.

**SECTION12 ECOLOGICAL INFORMATION**

**Toxicity:**

No data available.

**Persistence and Degradability:**

No data available.

**Bioaccumulative Potential:**

No data available.

**Mobility in Soil:**

No data available.

**Other Adverse Effects:**

No data available.

**SECTION13 DISPOSAL CONSIDERATION**

**Disposal Methods:**

The disposal of discarded battery shall comply with the requirements of relevant laws, regulations, policies and standards such as the "Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste" and "Technical Policy for the Prevention and Control of Waste Battery Pollution". Contact a licensed professional waste disposal service to dispose of wastes. Used battery being transported for disposal or reclamation should be carefully checked prior to shipment to ensure the integrity of each battery and its suitability for transport.

## SECTION14 TRANSPORT INFORMATION

Only Lithium  
Metal Battery  
During Transport:

The product has passed the test items of UN Model Regulations, Manual of Test and Criteria Section 38.3 and UN Model Regulations, SP188, 1.2m drop test. The net weight of the lithium batteries in the package is more than 2.5 kg. The content of Lithium is less than 1 g. The product is not subject to the other provisions of RID/ADR according to special provision 188.

**RID/ADR (2021 Edition):**  
According to 2.2.9.1.7 (g) of RID/ADR(2021 Edition), Manufacturers and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

**IATA DGR (63<sup>rd</sup> Edition):**  
Proper Shipping Name: Lithium metal batteries UN Number: UN3090 Hazard Class: 9 The product shall meet the General Requirements and section IA of Packaging Instruction 968. According to 3.9.2.6.1(g) of IATA DGR (63<sup>rd</sup> Edition), Manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

**IMO IMDG CODE (2020 Edition):**  
The product is not subject to the other provisions of IMO IMDG Code according to special provision 188. According to 2.9.4.7 of IMO IMDG Code(2020 Edition), Manufacturers and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

## SECTION15 REGULATORY INFORMATION

Domestic Regulations:

Only Lithium Metal Battery During Transport:

**Regulations Concerning Road Transportation Of Dangerous Goods(JT/T 617-2018):**

UN Number: 3090 Name and Description: Lithium metal batteries

The product has passed the test items of UN Model Regulations, Manual of Test and Criteria Section 38.3. The product is not subject to JT/T 617-2018 according to special provision 188.

**List Of Dangerous Goods(GB 12268-2012):**

UN Number: 3090 Proper Shipping Name: Lithium metal batteries The product has passed the test items of UN Model Regulations, Manual of Test and Criteria Section 38.3, The product is not subject to GB 12268-2012 according to special provision 188.

**List of Dangerous Goods by Rail(2009 Edition):**

Number: 91013 Name of Product: Lithium batteries

International Regulations:



**Directive 2006/66/EC and 2013/56/EU:**

The label, disposal and recycling of the battery shall meet the requirements of EU Directive 2006/66/EC and 2013/56/EU.

**ICAO TI:**

1. Unless be exempted according to ICAO TI, the lithium ion cell/batteries (UN 3480, PI 965) and lithium metal cell/batteries (UN 3090, PI 968) are forbidden for carriage on passenger aircraft.
2. Unless be approved according to ICAO TI, Lithium ion cells/batteries (UN 3480, PI 965) must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity.
3. A shipper is not permitted to offer for transport more than one (1) package prepared according to Section II of PI 965 and PI 968 in any single consignment. Not more than one (1) package prepared in accordance with Section II of PI 965 and PI 968 may be placed into an overpack.
4. Packages prepared according to Section II of PI 965 and PI 968 must be offered to the operator separately from other cargo and must not be loaded into a unit load device (ULD) before being offered to the operator.

**SECTION16 OTHER INFORMATION****Preparation Date:**

2022-06-21

**Preparation Department:**

Shanghai Research Institute of Chemical Industry Testing Co., Ltd.  
Tel (Fax) :+86-21-52815377/31765555

**Revision:**

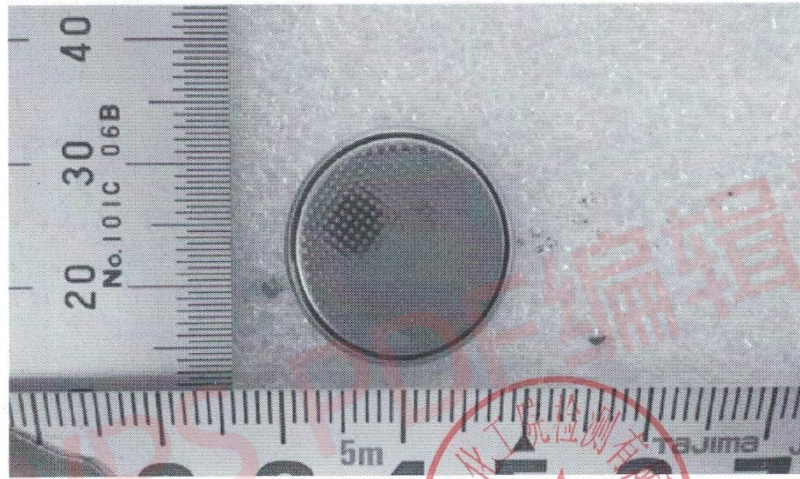
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**Abbreviations and Acronyms:**

CAS: Chemical Abstracts Service EC: European Commission ACGIH: American Conference of Governmental Industrial Hygienists PC-TWA: Permissible concentration-time weighted average TLV-TWA: Threshold limit value-time weighted average PC-STEL: Permissible concentration-short term exposure limit Skin: The substance causes systemic effects through entire skin absorption TLV-STEL: Threshold limit value-short term exposure limit ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road RID: Regulations concerning the International Carriage of Dangerous Goods by Rail IMO IMDG CODE: International Maritime Organization International Maritime Code for Dangerous Goods IATA DGR: International Air Transport Association Dangerous Goods Regulations EU: European Union ICAO TI: International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air PI: Packaging Instruction

**Other Information:**

This SDS is only compiled for battery and based on the information such as ingredients provided by the applicant and our current knowledge. This SDS shall be used only as a guide. If the battery is used as a component in another product, the information in this SDS may not be applicable. The users of this SDS must make independent judgments on the correctness and completeness and then decide its suitability according to the actual situation. The users should take the relevant legal responsibilities for the consequences of use.



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