

# SAFETY DATA SHEET

Product: Lithium Manganese Dioxide Button Cell

Model/type reference: CR2032

Nominal Voltage: 3.0V

Rated Capacity: 210mAh

Applicant: DONGGUAN LARGE ELECTRONICS CO., LTD.

Address: No. 8 Jingyi Road, Dongcheng District, Dongguan City,  
Guangdong Province.

Report No: PN20211213138901

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## Section 1- Identification of the Substance/Preparation and of the Company/Undertaking

### Product Identifier

**Product Name:** Lithium Manganese Dioxide Button Cell

**Model No.:** CR2032

### Other means of identification

**Synonyms:** None

### Recommended use of the chemical and restrictions on use

**Recommended Use:** LITHIUM PRIMARY/METAL BATTERIES

**Uses advised against:** No information available

### Details of the supplier of the safety data sheet

**Manufacturer's/ Supplier Name:** DONGGUAN LARGE ELECTRONICS CO., LTD.

**Address:** No. 8 Jingyi Road, Dongcheng District, Dongguan City, Guangdong Province.

**Telephone number of the manufacturer/supplier:** +86-769-28055192

**Emergency Telephone Number (24h):** +86-769-28055192

**E-mail address:** sunfeilin@juda.cn

**Version number:** V2.0

## Section 2 – Hazards Identification

### Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) this product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Carcinogenicity	Category 1A
Serious eye damage/eye irritation	Category 2
Skin corrosion/irritation	Category 2
Skin sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Acute toxicity(Oral)	Category 3
Acute Inhalation(Gases)	Category 2
Acute Inhalation(Dusts/Mists)	Category 2
Acute toxicity-Inhalation(Vapors)	Category 2
Reproductive Toxicity	Category 1A

### GHS Label elements, including precautionary statements

#### Emergency Overview

**Signal word:** Danger

#### **Hazard Statements**

Toxic if swallowed

Fatal if inhaled

Causes skin irritation

Causes serious eye damage  
 May cause an allergic skin reaction  
 May cause cancer  
 May damage fertility or the unborn child  
 May cause respiratory irritation. May cause drowsiness or dizziness



This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold.

Intended use of the product should not result in exposure to the chemical substance This is a battery. In case of rupture: the above hazards exist.

**Appearance** Silvery

**Physical State** Solid

**Odor** Odorless

<b>Precautionary Statements - Prevention</b>	Obtain special instructions before use Do not handle until all safety precautions have been read and understood Use personal protective equipment as required Wash face, hands and any exposed skin thoroughly after handling Contaminated work clothing should not be allowed out of the workplace Wear protective gloves Do not breathe dust/fume/gas/mist/vapors/spray Do not eat, drink or smoke when using this product Use only outdoors or in a well-ventilated area Wear eye/face protection
<b>Precautionary Statements - Response</b>	IF exposed or concerned: Get medical advice/attention Specific treatment (see supplemental first aid instructions on this label) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention IF ON SKIN: Wash with plenty of soap and water Take off contaminated clothing and wash before reuse If skin irritation or rash occurs: Get medical advice/attention
<b>Precautionary Statements - Storage</b>	Store locked up
<b>Precautionary Statements - Disposal</b>	Dispose of contents/container to an approved waste disposal plant
<b>Hazards not otherwise classified (HNOC)</b>	Not applicable

<b>Unknown Toxicity</b>	-
<b>Other information</b>	May be harmful if swallowed Very toxic to aquatic life with long lasting effects Repeated or prolonged skin contact may cause allergic reactions with susceptible persons
<b>Interactions with Other Chemicals</b>	Use of alcoholic beverages may enhance toxic effects.

### Section 3 – Composition/Information on Ingredients

Chemical Name	CAS Number	Weight-%	Trade Secret
Lithium	7439-93-2	1.8-2.5	-
Manganese dioxide	1313-13-9	32-36	-
Graphite	7782-42-5	2.5-3.5	-
Aluminum	7429-90-5	5-7	-
Lithium perchlorate	7791-03-9	1.5-2	-
1,2-Dimethoxyethane	110-71-4	9.5-10.5	-
Propylene carbonate	108-32-7	11-12	-
Iron	7439-89-6	19-21	-
Chromium	7440-47-3	4.5-5.5	-
Nickel	7440-02-0	2-2.5	
Polypropylene	9003-07-0	4-5	

\* The exact percentage (concentration) of composition has been withheld as a trade secret.

### Section 4 – First-aid Measures

<b>General Advice</b>	<p>First aid is upon rupture of sealed battery.</p> <p><b>Eye contact:</b> If symptoms persist, call a physician. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area.</p> <p><b>Skin contact:</b> Wash off immediately with soap and plenty of water for at least 15 minutes. In the case of skin irritation or allergic reactions see a physician. May cause an allergic skin reaction.</p> <p><b>Inhalation:</b> Remove to fresh air. If symptoms persist, call a physician. Get medical attention immediately if symptoms occur.</p> <p><b>Ingestion:</b> Do NOT induce vomiting. Rinse mouth immediately and drink plenty</p>
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	<p>of water. Never give anything by mouth to an unconscious person. Call a physician.</p> <p><b>Self-protection of the first aider:</b> Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8).</p>
<b>Most important symptoms and effects, both acute and delayed</b>	<b>Most important symptoms and effects:</b> Itching. Coughing and/ or wheezing. Itching
<b>Indication of any immediate medical attention and special treatment needed</b>	<b>Notes to Physician:</b> Treat symptomatically. May cause sensitization of susceptible persons.

## Section 5 – Fire-fighting Measures

<b>Suitable extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable extinguishing Media</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Specific Hazards arising from the chemical</b>	Product is or contains a sensitizer. May cause sensitization by skin contact.
<b>Hazardous Combustion Products</b>	Carbon oxides.
<b>Explosion Data</b>	<b>Sensitivity to Mechanical Impact:</b> No. <b>Sensitivity to Static Discharge:</b> No.
<b>Protective Equipment and precautions for firefighters</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## Section 6 – Accidental Release Measures

<b>Personal Precautions, protective equipment, and emergency procedures</b>	<p><b>Personal Precautions:</b> Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.</p> <p><b>Other Information:</b> Refer to protective measures listed in Sections 7 and 8.</p>
<b>Environmental Precautions</b>	Refer to protective measures listed in Sections 7 and 8.
<b>Methods and material for containment and</b>	<b>Methods for Containment:</b> Prevent further leakage or spillage if safe to do so.

<b>cleaning up</b>	<b>Methods for cleaning up:</b> Pick up and transfer to properly labeled containers.
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## Section 7 – Handling and Storage

<b>Precautions for safe handling</b>	<b>Handling:</b> In case of rupture. Use personal protection equipment. Avoid contact with skin, eyes or clothing.
<b>Conditions for safe storage, including any incompatibilities</b>	<b>Storage:</b> Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. <b>Incompatible Products:</b> Strong acids. Strong oxidizing agents. Strong bases.

## Section 8 – Exposure Controls and Personal Protection

### Control parameters

#### Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Manganese dioxide 1313-13-9	TWA: 0.02 mg/m <sup>3</sup> Mn TWA: 0.1 mg/m <sup>3</sup> Mn	(vacated) Ceiling: 5 mg/m <sup>3</sup> Ceiling: 5 mg/m <sup>3</sup> Mn	IDLH: 500 mg/m <sup>3</sup> Mn TWA: 1 mg/m <sup>3</sup> Mn STEL: 3 mg/m <sup>3</sup> Mn
Graphite 7782-42-5	TWA: 2 mg/m <sup>3</sup> respirable fraction all forms except graphite fibers	TWA: 15 mg/m <sup>3</sup> total dust synthetic TWA: 5 mg/m <sup>3</sup> respirable fraction synthetic (vacated) TWA: 2.5 mg/m <sup>3</sup> respirable dust natural (vacated) TWA: 10 mg/m <sup>3</sup> total dust synthetic (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m <sup>3</sup> TWA: 2.5 mg/m <sup>3</sup> respirable dust
Chromium 7440-47-3	TWA: 0.5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 250 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>
Nickel 7440-02-0	TWA: 1.5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> TWA: 0.015 mg/m <sup>3</sup>

\*ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

#### Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 968 F.2d 962 (11th Cir., 1992) See section 15 for national exposure control parameters

<b>Appropriate engineering controls</b>	<b>Engineering Measures:</b> Showers Eyewash stations
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	Ventilation systems.
<b>Individual protection measures, such as personal protective equipment</b>	<p><b>Eye/Face Protection:</b> If splashes are likely to occur: Wear safety glasses with side shields (or goggles). None required for consumer use.</p> <p><b>Skin and Body Protection:</b> Wear protective gloves and protective clothing. Long sleeved clothing. Impervious gloves.</p> <p><b>Respiratory Protection:</b> No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.</p> <p><b>Hygiene Measures:</b> Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product.</p>

## Section 9 - Physical and Chemical Properties

<b>Physical Properties</b>	<b>Physical state:</b> Solid	
	<b>Appearance:</b> Silvery and Button	
	<b>Color:</b> Silvery	
	<b>Odor:</b> Odorless	
	<b>Odor Threshold:</b> No information available	
<b>Chemical Properties:</b>		
<b>Property</b>	<b>Values</b>	<b>Remarks/ Method</b>
pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air Upper flammability limit Lower flammability limit	No data available No data available	-
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Insoluble in water	None known

<b>Solubility in other solvents</b>	No data available	None known
<b>Partition coefficient: n-octanol/water</b>	0.00001	None known
<b>Autoignition temperature</b>	130°C	None known
<b>Decomposition temperature</b>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	0.00001	None known
<b>Explosive properties</b>	No data available	-
<b>Oxidizing Properties</b>	No data available	-

#### Other Information

<b>Softening Point</b>	No data available
<b>VOC Content (%)</b>	No data available
<b>Particle Size</b>	No data available
<b>Particle Size Distribution</b>	No data available

## Section 10 - Stability and Reactivity

<b>Reactivity</b>	No data available.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of Hazardous Reactions</b>	None under normal processing.
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	None known based on information supplied.
<b>Incompatible materials</b>	Strong acids. Strong oxidizing agents. Strong bases.
<b>Hazardous Decomposition Products</b>	Carbon oxides.

## Section 11 - Toxicological Information

#### Information on likely routes of exposure

<b>Product Information</b>	Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:.
<b>Inhalation</b>	Specific test data for the substance or mixture is not available. Corrosive by inhalation.(based on components).
<b>Eye Contact</b>	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to eyes. May cause redness, itching, and pain. May cause temporary eye irritation.
<b>Skin Contact</b>	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to eyes. May cause redness, itching, and pain. May cause temporary eye irritation.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Ingestion may



	cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.(based on components).
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### Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Iron 7439-89-6	= 984 mg/kg ( Rat )	-	-
Manganese dioxide 1313-13-9	= 9000 mg/kg ( Rat )	-	-
Propylene carbonate 108-32-7	= 29000 mg/kg ( Rat )	> 20 mL/kg ( Rabbit )	-
Graphite 7782-42-5	> 10000 mg/kg ( Rat )	-	-
Nickel 7440-02-0	> 9000 mg/kg ( Rat )	-	-

<b>Information on toxicological effects</b>	<b>Symptoms:</b> Erythema (skin redness). May cause redness and tearing of the eyes. Itching. Rashes. Hives.
<b>Delayed and immediate effects as well as chronic effects from short and long-term exposure</b>	<b>Sensitization:</b> May cause sensitization of susceptible persons. May cause sensitization by inhalation. <b>Mutagenic Effects:</b> No information available. <b>Carcinogenicity:</b> The table below indicates whether each agency has listed any ingredient as a carcinogen

Chemical Name	ACGIH	IARC	NTP	OSHA
Chromium 7440-47-3	-	Group 3	-	-
Nickel 7440-02-0	-	Group 2B Group 1	Reasonably Anticipated	X

<p><b>ACGIH (American Conference of Governmental Industrial Hygienists)</b>  A1 - Known Human Carcinogen  A3 - Animal Carcinogen</p> <p><b>IARC (International Agency for Research on Cancer)</b>  Group 1 - Carcinogenic to Humans  Group 2B - Possibly Carcinogenic to Humans  Group 3 - Not Classifiable as to Carcinogenicity in Humans</p> <p><b>NTP (National Toxicology Program)</b>  Known - Known Carcinogen</p> <p><b>OSHA (Occupational Safety and Health Administration of the US Department of Labor)</b>  X - Present</p>
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<b>Reproductive Toxicity</b>	Contains a known or suspected reproductive toxin.
<b>STOT - single exposure</b>	No information available.

<b>STOT - repeated exposure</b>	Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).
<b>Chronic Toxicity</b>	No known effect based on information supplied. Contains a known or suspected carcinogen. Contains a known or suspected reproductive toxin. Possible risk of irreversible effects. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse effects on the bone marrow and blood-forming system. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons.
<b>Target Organ Effects</b>	Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Reproductive System. Blood. Central Nervous System (CNS). Central Vascular System (CVS). Kidney. Lungs. Nasal cavities. Cardiovascular system. Systemic Toxicity. Liver.
<b>Aspiration Hazard</b>	No information available.

#### Numerical measures of toxicity Product Information

<b>The values which are on the right are calculated based on chapter 3.1 of the GHS document.</b>	<b>ATEmix (oral)</b> <b>ATEmix (dermal)</b> <b>ATEmix (inhalation-dust/mist)</b>
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## Section 12 - Ecological Information

### Ecotoxicity

Very toxic to aquatic life with long lasting effects.

<b>Chemical Name</b>	<b>Toxicity to Algae</b>	<b>Toxicity to Fish</b>	<b>Toxicity to Microorganisms</b>	<b>Daphnia Magna (Water Flea)</b>
Iron 7439-89-6	–	96h LC50: 13.6 mg/L (Morone saxatilis)	–	–
Propylene carbonate 108-32-7	72h EC50: > 500mg/L (Desmodesmus subspicatus)	96h LC50: > 1000 mg/L (Cyprinus carpio) 96h LC50: 5300 mg/L (Leuciscus idus)	EC50 > 10000 mg/L 17 h	48h EC50: > 500 mg/L
Nickel 7440-02-0	72h EC50: 0.18 mg/L (Pseudokirchneriella subcapitata) 96h EC50: 0.174 - 0.311 mg/L	(Brachydanio rerio) 96h LC50: 1.3mg/L (Cyprinus carpio) 96h LC50:	–	48h EC50: > 100 mg/L 48h EC50: 1mg/L

	(Pseudokirchneriella subcapitata)	10.4mg/L (Cyprinus carpio)		
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<b>Persistence and Degradability</b>	No information available.
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Bioaccumulation

Chemical Name	California Proposition 65
<b>Manganese dioxide</b> 1313-13-9	<0
<b>Propylene carbonate</b> 108-32-7	0.48
<b>Other adverse effects</b>	No information available.

## Section 13 – Disposal Considerations

### Waste treatment methods

**Disposal methods:** Should not be released into the environment.

**Contaminated Packaging:** Dispose of in accordance with federal, state and local regulations.

### US EPA Waste Number D007

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Chromium 7440-47-3	–	Included in waste streams: F032, F034, F035, F037, F038, F039	5.0 mg/L regulatory Level	–
Nickel 7440-02-0	(hazardous constituent – no waste number)	Included in waste streams: F006, F039	–	–

### California Hazardous Waste Codes 181

Chromium 7440-47-3	Toxic Corrosive Ignitable
Nickel 7440-02-0	Toxic powder Ignitable powder
Lithium 7439-93-2	Corrosive Ignitable Reactive
Manganese 7439-96-5	Ignitable powder

## Section 14 – Transport Information

The Lithium Manganese Dioxide Button Cell (CR2032) as stated in Appendix is made in compliance to the requirements stated in the latest edition of the IATA Dangerous Goods Regulations Packing Instruction 968 section I B or 969 section II or 970 section II.

With regard to transport, the following regulations are cited and considered:

- The International Civil Aviation Organization (ICAO) Technical Instructions, Packing instruction 968 section I B or 969 section II or 970 section II (2021-2022 Edition).
- The International Air transport Association (IATA) Dangerous Goods Regulations, Packing instruction 968 section I B or 969 section II or 970 section II (63<sup>rd</sup> Edition, 2022).
- Special provision 188 of the International Maritime Dangerous Goods (IMDG) Code (Amendment 40-20 Edition).
- The US Hazardous Materials Regulation 49 CFR (Code of Federal Regulations), sections 173-185 Lithium batteries and cells.
- The UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria 38.3 Lithium batteries.

These products are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to all the applicable international and national governmental regulations, not limited to the above mentioned. We further certify that the enclosed products have been tested and fulfilled the requirements and conditions in accordance with UN Recommendations (T1 – T8) on the Transport of Dangerous Goods Model Regulations and the Manual of Tests and Criteria.

### Test results of the UN Recommendation on the Transport of Dangerous Goods

Manual of Test and Criteria (38.3 Lithium battery)			
No.	Test items	Test results	Remark
T1	Altitude simulation	Pass	-
T2	Thermal test	Pass	-
T3	Vibration	Pass	-
T4	Shock	Pass	-
T5	External short circuit	Pass	-
T6	Impact / Crush	Pass	-
T7	Overcharge	Pass	Not applicable
T8	Forced discharge	Pass	-

### Additional Requirements for air transport:

1. Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
2. Cells and batteries must be manufactured under a quality management program.
3. The Lithium content must be marked on the outside of the battery case except those manufactured before 1 January 2009.
4. Cells and batteries must be packed in strong outer packagings. (Applicable to PI 968 only)
5. Cells and batteries must be packed in inner packagings that completely enclose the cell or battery. To

provide protection from damage or compression to the batteries, the inner packagings must be placed in a strong rigid outer packaging of one of the packaging types shown below.

6. Each consignment must be accompanied with a document with an indication that:
  - the package contains lithium metal cells or batteries;
  - the package contains a flammability hazard exists;
  - Place for UN number(s), i.e. UN 3090, UN 3091,
  - a telephone number for additional information..
7. Each package must be labelled with a lithium battery handling label in addition to the Class 9 hazard label and Cargo Aircraft Only label.

Each package must be marked in accordance with the requirements of 7.1.4.1(a) and (b) and in addition the net weight when required by 7.1.4.1(c) must be marked on the package.  
(applicable to PI 968 only)
8. Each package must be capable of withstanding a 1.2 m drop test in any orientation without (Applicable to PI 968 and 969 only):
  - damage to cells or batteries contained therein;
  - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
  - release of contents.
9. Each package must be labelled with a lithium battery handling label (Figure 7.4.H). (Applicable to PI 969 and 970 only)
10. A Shipper's Declaration for Dangerous Goods is not required. (Applicable to PI 969 and 970 only)
11. Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.
12. The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation. (Applicable to PI 969 only)
13. The maximum number of batteries in each package must be the minimum number required to power the equipment plus two spares. (Applicable to PI 969 only)
14. The words "lithium metal batteries in compliance with Section II of PI 969" must be included on the air waybill, when an air waybill is used. The information should be shown in the "Nature and Quantity of Goods" box of the air waybill. (Applicable to PI 969 only)
15. Maximum net quantity of lithium ion cells must not be more than 5 kg. (Applicable to PI 969 and 970 only)
16. Equipment must be equipped with an effective means of preventing accidental activation. (Applicable to PI 970 only)
17. The equipment containing the cells or batteries must be secured against movement within the outer packaging and be packed so as to prevent accidental operation during air transport. (Applicable to PI 970 only)
18. The equipment must be packed in strong outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the cell or battery is afforded equivalent protection by the equipment in which it is contained. (Applicable to PI 970 only)
19. Where a consignment includes packages bearing the lithium battery handling label, the words "lithium metal batteries in compliance with Section II of PI 970" must be included on the air waybill, when an air waybill is used. The information should be shown in the "Nature and Quantity of Goods" box of the air waybill. (Applicable to PI 970 only)

## Section 15 - Regulatory Information

**International Inventories**

TSCA: Complies

DSL: All components are listed either on the DSL or NDSL.

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Manganese dioxide	1313-13-9	32-36	1.0
Chromium	7440-47-3	4.5-5.5	1.0
Ethylene glycol dimethyl ether	110-71-4	9.5-10.5	1.0
Nickel	7440-02-0	2-2.5	0.1

**SARA 311/312 Hazard Categories**

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Chromium 7440-47-3	-	X	X	-
Nickel 7440-02-0	-	X	X	-

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Chromium 7440-47-3	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Nickel 7440-02-0	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

**US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

Chemical Name	California Proposition 65
Nickel - 7440-02-0	Carcinogen

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Manganese dioxide (MnO <sub>2</sub> ) 1313-13-9	-	-	X	X	X
Graphite 7782-42-5	X	X	X	-	-
Litium 7439-93-2	X	X	X	-	-
Polytetrafluoroethylene (PTFE) 9002-84-0	-	-	X	-	-

**International Regulations**

**Mexico**

**National occupational exposure limits**

Component	Carcinogen Status	Exposure Limits
Manganese dioxide (MnO <sub>2</sub> ) 1313-13-9 (27.9%)	-	Mexico: TWA= 2 mg/m <sup>3</sup>
Graphite 7782-42-5 (2.7%)	-	Mexico: TWA= 2 mg/m <sup>3</sup>
Stainless steel, powder, -150 mesh 12597-68-1(52.0%)	A3 A2	Mexico: TWA 0.15 mg/m <sup>3</sup> Mexico: TWA 0.002 mg/m <sup>3</sup> Mexico: TWA 0.2 mg/m <sup>3</sup> Mexico: TWA 5 mg/m <sup>3</sup>

Mexico - Occupational Exposure Limits – Carcinogens

A2 - Suspected Human Carcinogen

A3 - Confirmed Animal Carcinogen

**Canada**

**WHMIS Hazard Class**

D2A - Very toxic materials

**Section 16 - Other Information**

<b>NFPA</b>	<b>Health Hazards 1</b>	<b>Flammability 0</b>	<b>Instability 1</b>	<b>Physical and Chemical Hazards - Personal Protection X</b>
<b>HMS</b>	<b>Health Hazards 4</b>	<b>Flammability 0</b>	<b>Physical Hazard 1</b>	

Chronic Hazard Star Legend \*=Chronic Health Hazard

Shenzhen NTEK New Energy Technology Co., Ltd.

Tel: +86(0)-755-3699 5529 <http://www.ntekbat.org.cn>

RE-037 A/1

**Revision Note:** No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**--End of Safety Data Sheet--**





仅限货机  
CAO



NO.212200007786517



# 货物运输条件鉴定书

## Certification

### for Safe Transport of Chemical Goods

## 危险品

样品名称 : 锂-二氧化锰扣式电芯 CR2032 3.0V 210mAh

Sample name: Lithium Manganese Dioxide Button Cell CR2032 3.0V 210mAh

委托单位 : 东莞市钜大电子有限公司  
Dongguan Large Electronics Co., Ltd

生产单位 : 东莞市钜大电子有限公司  
Dongguan Large Electronics Co., Ltd



Witness Better Life

## SICIT 上海化工院检测有限公司

Shanghai Institute of Chemical Industry Testing Co., Ltd



## 声 明 Statement

1. 鉴定书无上海化工院检测有限公司检验检测专用章、二维码无效。  
The certification is invalid if it is not affixed the dedicated inspection and testing seal of Shanghai Institute of Chemical Industry Testing Co., Ltd.and QR Code on it.
2. 鉴定书复印件无效。  
Copies of the certification are invalid.
3. 鉴定书无主检、审核、批准签字无效。  
The certification is invalid without the signatures of appraiser, checker and approver.
4. 鉴定书涂改无效。  
The certification is invalid if it is forged or altered.
5. 委托单位必须保证送至本公司的样品及资料与真实的出运货物相一致，如有不符，所涉及的法律责任及其他后果均由委托单位自行承担。  
The client must guarantee that samples and documents provided for appraisal are consistent with the goods to be transported. Otherwise, the client shall bear all legal responsibilities and other consequences due to it.
6. 本鉴定书的鉴定结论仅适用于最终收到的样品。  
The conclusion of this certification only applies to the final sample as received.
7. 本鉴定书当年有效，铁路运输方式除外。特殊情况参见鉴定书备注。  
The certification is valid in the year subscribed on it except when transported by rail. Please refer to the comment of certification on special occasion.
8. 本鉴定书不考虑国家及经营人差异。  
The certification takes no account of the State and Operator Variations.
9. 货物的运输方式应与鉴定结论中的运输方式相一致。不同的运输方式，鉴定结果可能会有差异。  
The transportation mode of the goods shall be consistent with that in the appraisal conclusion. Different transportation modes may lead to different appraisal results.
10. 鉴定书真伪性可登入本公司网站 [www.ghs.cn](http://www.ghs.cn) 或扫描鉴定书中二维码进行查询。  
The authenticity of the certification can be verified by our website([www.ghs.cn](http://www.ghs.cn))or the QR code in the certification.
11. 送检申请可登入本公司网站 [www.ghs.cn](http://www.ghs.cn) 进行网上委托。  
The application of the certification can be done via our website: [www.ghs.cn](http://www.ghs.cn).

地址：上海市光复西路2779号接待大厅

Address: Reception Hall, Shanghai Institute of Chemical Industry Co., Ltd, No.2779  
West Guangfu Road, Shanghai, China.

邮编(Post code): 200062

电话(Tel):(008621)31765555

邮箱(Email): [center@ghs.cn](mailto:center@ghs.cn)

网址(Website): [www.ghs.cn](http://www.ghs.cn)

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## Certification for Safe Transport of Chemical Goods

样品名称 Sample Name	中文 Chinese	锂-二氧化锰扣式电芯 CR2032 3.0V 210mAh				
	英文 English	Lithium Manganese Dioxide Button Cell CR2032 3.0V 210mAh				
委托单位 Consignor	东莞市钜大电子有限公司 Dongguan Large Electronics Co., Ltd					
生产单位 Manufacturer	东莞市钜大电子有限公司 Dongguan Large Electronics Co., Ltd					
检验方法、程序 Inspection method and procedure	国际航空运输协会《危险品规则》63版 IATA Dangerous Goods Regulations (DGR) 63rd Edition					
样品外观 Sample appearance	银色金属外壳 Silvery Metal shell					
包装件信息 Package information	锂电池总净重≤2.5kg。 Lithium batteries total net weight≤2.5kg.					
序号 NO.	电池种类 Battery type	型号 Model	容量Capacity /锂含量Li content	放置方式 Placement	单颗重量kg Unit weight	数量 Quantity
1	不可充电锂金属电池芯 Primary Li-metal cell	CR2032	210mAh / ≤0.3g	电池单独运输 Battery only	0.0030	600
鉴定结论 IDENTIFICATION CONCLUSION	1. 危险性识别 (Hazards identification) 杂项: Miscellaneous.					
	2. 空运按照国际航空运输协会《危险品规则》办理的类项 (Suggestion according to IATA DGR) Shipping name: Lithium metal batteries Class or division: 9 UN Number: UN3090					
鉴定结论 IDENTIFICATION CONCLUSION	3. 包装要求 (Packaging requirements) 按包装说明968第IB部分要求办理。 The goods are packaged according to the Packaging Instruction 968 section IB. 仅限货机 Cargo Aircraft Only					
	检验日期: 2021-12-22 Inspection Date:		签发日期: 2021-12-22 Issue Date:		生效日期: 2022-01-01 Effective Date:	
备注 Comment						



批准  
Approver: 王泉

审核  
Checker: 董学胜

主检  
Appraiser: 孙清



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序号 No.	检验结果及其他事项 Inspection results and other things
1	<p>本报告所述锂电池按照《危险品规则》(63版)[以下简称DGR] 3.9.2.6.1(e)规定的质量管理体系进行制造。 本报告所述锂电池不属于因安全原因召回的锂电池。 本报告所述锂电池不进行以回收或处置为目的的航空运输, 不属于废弃锂电池。 Lithium cells and batteries listed in this report were manufactured under the quality management program described in IATA DGR 63rd 3.9.2.6.1(e). Lithium cells and batteries listed in this report are not the defective cells or batteries returned to the manufacturer for safety reasons. Lithium cells and batteries listed in this report are not waste lithium cells or batteries, and they will not be shipped for recycling or disposal.</p>
2	<p>本报告所述锂电池已通过《联合国试验和标准手册》第III部分38.3小节相应测试要求。 包装件能够承受1.2m跌落试验。 Lithium cells and batteries listed in this report are of the types proved to meet the requirements of each applicable test in the UN Manual of Tests and Criteria, Part III, sub-section 38.3. The package has passed the 1.2m drop test. UN38.3试验概要编号 The UN38.3 Test Summary No. (s) 811900500264187 详细信息请扫描右侧二维码。 Please scan the QR code on the right for more information.</p> 
3	<p>锂电池完全封装在内包装内, 位于坚固的刚性外包装中。 电池具有适当的防短路措施。 Lithium cells and batteries are packed in inner-packagings that completely enclose the cell or battery and placed in a strong rigid outer packaging. Cells and batteries are properly protected to prevent short circuits.</p>
4	<p>按DGR IB部分托运的电池必须根据第8部分规定在托运人申报单中描述; 并且当使用航空货运单时, 货运单必须包含8.2.1和8.2.2中相关适用要求。 Cells or batteries shipped under the provisions of Section IB in IATA DGR must be described on a Shipper's Declaration, as set out in Section 8, and the air waybill, when used, must contain the applicable information required by 8.2.1 and 8.2.2.</p>
5	<p>除使用9类锂电池危险性标签(DGR图7.3.X)外, 每个包装件必须按DGR图7.1.C所示做耐久清晰的标记。 每个包装件必须按DGR 7.1.4.1(a)和(b)要求标记, 此外当7.1.4.1(c)有要求时还必须标明包装件净重。 每个包装件必须贴有“仅限货机”标签(DGR图7.4.B)。 Each package must be durably and legibly marked with the mark shown in Figure 7.1.C in IATA DGR in addition to the Class 9-Lithium Battery hazard label (Figure 7.3.X in IATA DGR). Each package must be marked in accordance with the requirements of 7.1.4.1(a) and (b) in IATA DGR and in addition the net weight when required by 7.1.4.1(c) must be marked on the package. Each package must be labelled with the "Cargo Aircraft Only" label (Figure 7.4.B in IATA DGR).</p>
6	<p>电池不得与第1类爆炸品(1.4S项除外), 2.1项易燃气体, 第3类易燃液体, 4.1项易燃固体或5.1项氧化性物质等危险品包装在同一外包装或集合包装内。 Cells and batteries must not be packed in the same outer packaging or overpack with dangerous goods classified in Class 1 (explosives) other than Division 1.4S, Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids) or Division 5.1 (oxidizers).</p>
7	/

-验证码: 789754-



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