



Material Safety Data Sheet

MSDS Code: EBO16XXXXX-MXXX
3V LITHIUM MANGANESE DIOXIDE CELL

Date of Issue: February 19, 2016
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1. Identification Of Substance

Product Details

Product Name: 3V LITHIUM MANGANESE DIOXIDE CELL
Product Model: /
Manufacturer/Supplier By: XXXXXX
XXXXXX, XXXXXX, XXXXXX
Tel & Emergency Tel: +86-755-XXXXXX
Fax: +86-755-XXXXXX

2. Composition/Data On Components

COMPONENT	CAS #	% by wt.
Positive Stainless Iron 430	/	28.98%
Negative Stainless Iron 430	/	21.52%
Polypropylene	9003-07-0	3.42%
Electrolytic Manganese Dioxide	1313-13-9	30.99%
Carbon Black	1333-86-4	2.17%
Graphite	7782-42-5	2.17%
Litium	7439-93-2	1.91%
Lithium Perchlorate	7791-03-9	4.00%
Propylene Carbonate	108-32-7	3.00%
1,2-Dimethoxyethane	110-71-4	1.50%
Polypropylene	9003-07-0	0.34%

3. Hazards Identification

Do not short circuit, recharge, puncture, incinerate, crush, immerse, force discharge or expose to temperatures above the declared operating temperature range of the product. Risk of fire or explosion. The Lithium-Manganese dioxide batteries described in this Product Safety Data Sheet are sealed units which are not hazardous when used according to the recommendations of the manufacturer.

Under normal conditions of use, the electrode materials and electrolyte they contain are not exposed to the outside, provided the battery integrity is maintained and seals remain intact. Risk of exposure only in case of abuse (mechanical, thermal, electrical) which leads to the activation of safety valves and/or the rupture of the battery containers. Electrolyte leakage or battery vent/explosion/fire may follow, depending upon the circumstances.



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4. First aid Measures

Eyes:	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin:	Get medical aid at once. Immediately remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Discard contaminated clothing in a manner which limits further exposure.
Inhalation:	Get medical aid immediately. Remove from exposure and move to fresh air immediately. Use oxygen if available. Use oxygen device such as mask or bag.
Ingestion:	Do not induce vomiting. Get medical aid immediately.
Note to Physician:	May be toxic to the body. Wash out the solution with water promptly in an emergency. Treat symptomatically and supportively.

5. Fire Fighting Measures

CO₂ extinguishers or, even preferably, copious quantities of water or water-based foam can be used to cool down burning Li-MnO₂ cells and batteries, as long as the extent of the fire has not progressed to the point that the lithium metal they contain is exposed (marked by deep red flames).

Do not use for this purpose sand, dry powder or soda ash, graphite powder or fire blankets.

Use only metal (Class D) extinguishers on raw lithium.

Extinguishing Media Use water or CO₂ on burning Li-MnO₂ cells or batteries and class D fire extinguishing agent only on raw lithium

6. Accidental Release Measures

Do not breathe vapours or touch liquid with bare hands.

If the skin has come into contact with the electrolyte it should be washed thoroughly with water.

Earth or sand should be used to absorb the exudation, seal leaking battery and earth in a heavy duty polythene bag and dispose of as Special Waste in accordance with local regulations.

7. Handling And Storage

Handling	Do not short circuit or expose to temperatures above the temperature rating of battery. Do not recharge, over-discharge, force discharge, immerse, puncture or crush.
Storage	Store in a cool place but prevent condensation on cells and batteries. Elevated temperatures can result in shortened battery life and degrade performance. Do not store batteries in high humidity environments for long periods of times.
Other	Lithium-Manganese dioxide batteries are not rechargeable and should not be tentatively charged.



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Follow Manufacturers recommendations regarding maximum recommended currents and operating temperature range.

Applying pressure on deforming the battery may lead to disassembly.

8. Exposure Controls And Personal Protection

Respiratory protection:	In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting batteries. Respiratory Protection is not necessary under conditions of normal use.
Ventilation:	Not necessary under conditions of normal use.
Protective Gloves:	Not necessary under conditions of normal use.
Other Protective Clothing or Equipment:	Not necessary under conditions of normal use.
Personal Protection is recommended for venting batteries:	Respiratory protection, protective gloves, protective clothing and safety glass with side shields.

9. Physical And Chemical Properties

Appearance	Cylindrical shape
Color:	Silver
Odor:	Odorless
Nominal Voltage:	3.0V

10. Stability And Reactivity

Product is stable under conditions described in Section 7.

Conditions to avoid	Heat above 70°C or incinerate. Deform. Mutilate. Crush. Pierce. Disassemble. Recharge. Short circuit. Expose over a long period to humid conditions.
Materials to avoid	Oxidising agents, alkalis, water.
Hazardous reactions	Lithium metal reacts with water to produce highly flammable gasses.
Hazardous decomposition reactions	Toxic Fumes, and may form peroxides

11. Toxicological Information

Inhalation, skin contact and eye contact are possible when the battery is opened.

Exposure to internal contents, the corrosive fumes will be irritation to skin, eyes and mucous membranes.



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Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

12. Ecological Information

When promptly used or disposed the battery does not present severe environmental hazard. When disposed, keep away from water, rain and snow.

13. Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Dispose of the battery in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

14. Transport Information

According to IATA DGR 55th edition for transportation, or the special provision 188 of IMDG, or «recommendations on the transport of dangerous goods model regulations» .

UN-Number: UN3090

Lithium ion batteries in compliance with Section II of PI968

Equal to or less than 0.3g = 2.5 kg; or Greater than 0.3 g but equal to or less than 1 g = 8 cells; or Greater than 0.3 g but equal to or less than 2 g = 2 batteries

Each cell is of a type proved to meet the Requirements of each test in the UN MANUAL PF TESTS AND CRITERIA, part III, sub-SECTION 38.3, Each package is labeled with lithium battery handling label

Each consignment is accompanied with a document with an indication that:

the package contains lithium ion cells;

the package must be handled with care, and that a flammability hazard exists if the package is damaged;

special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary; and a telephone number for additional information.

15. Regulations

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)



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«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.