MATERIAL SAFETY DATA SHEET

Date : Jan/28/2015
File No.: PH-W5-875

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Product name :	Lithium Metal Cell
Chemical System:	Lithium and Manganese Dioxide (Li-MnO2 cells)
Model:	Cylindrical and coin Type Cells_
Designated for 'DO NOT RECHARGE'?	X Yes __ No

Manufacturer/supplier identification

Company :	Guangzhou Great Power Energy & Technology Co., Ltd
Contact for information :	922 Xicun Section, Shiliang Road, Shawan, Panyu, Guangzhou, GD, PRC
Emergency telephone No. :	0086-20-39196888

2. Composition/information on ingredients

Ingredient	Percent	CAS Index No./EC No.	Molar mass	Molecular formula	Symbol
Manganese Dioxide	33%	1313-13-9		MnO2	
Lithium	2.4%	7439-93-2		Li	
Propylene carbonate	6.25%	108-32-7		PC	
Dimethyl ether	6.25%	115-10-6		DME	
Lithium Perchlorate	1.4%	7791-03-9		LiClO4	
Polypropylene	2.1%	9003-07-0		PP	
Steel	47.2%	7439-89-6		Fe	
Aluminum	1.4%	7429-90-5		Al	

Remark: The weight of metallic lithium per cell is <0.3 g.

3. Hazards identification

Routes of Entry:
Inhalation - Yes
Skin - Yes
Ingestion – Yes

Health Hazards (Acute and Chronic):
These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically

abused. The most likely risk is an acute exposure when the gas release vent works. Organic solvent has slight toxicity and can irritate skin and eyes. Lithium salt is irritating to skin, eyes and mucous membranes and should be avoided.

Carcinogenicity:
NTP: None IARC Monograph: None OSHA Regulated: None

Medical Conditions Generally Aggravated by Exposure:
An acute exposure will not generally aggravate any medical condition.

4. First aid measures

After skin contact：	In case of skin contact with contents of battery, flush immediately with water. If irritation persists, get medical help.
After eye contact：	For eye contact, flush with copious amounts of water for 15 minutes. Do not inhale leaked material. If irritation persists, get medical help.

5. Fire-fighting measures

Extinguishing Media: CO2 or dry chemicals
Flammable Limits: Not available

6. Accidental release measures

The preferred response is to leave the area and allow the batteries to cool and the vapors to dissipate. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

7. Handling and storage

Avoid mechanical or electrical abuse. Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

8. Exposure controls/personal protection

Specific control parameter：
Personal protective equipment ：

Respiratory protection (Specify Type)：	Not necessary under conditions of normal use.
Ventilation:	Not necessary under conditions of normal use.
Protective Gloves:	Not necessary under conditions of normal use.
Eye protection:	Not necessary under conditions of normal use.
Other Protective (Clothing or Equipment):	Not necessary under conditions of normal use.

9. Physical and chemical properties

Specific Gravity: (H20=1): MnO2: 5.03
Melting Point: (°C): MnO2 decomposes at 535 deg. C

MnO2 is a black, odorless powder.
Lithium is a soft, silvery metal.
Organic solvent is an odorless, colorless or light yellow liquid.
Lithium salt is a white, crystalline and odorless powder.

10. Stability and reactivity

Stability: Stable
Conditions to Avoid: Do not heat, disassemble or charge.
Hazardous Decomposition or By-products: N/A
Hazardous polymerization will not occur.

11. Toxicological information

Acute toxicity：
Organic solvent

Further toxicological information：
Lithium

12. Ecological information

Ecotoxic effects： N/A
Further ecological data：N/A

13. Disposal considerations

Great Power encourages battery recycling. Our Li-Mn batteries are recyclable through the Rechargeable Battery Recycling Corporation's (RBRC) ***Charge Up to Recycle! Program***. For information call 1-800-8-BATTERY or see their website at www.rbrc.org. Li-Mn batteries must be handled in accordance with all applicable state and federal laws and regulations.

DO NOT RECHARGE, disassemble, short, or subject battery cells to temperatures in excess of 212 F. Do not use in combination with fresh and used lithium batteries neither with other type of battery.

14. Transport information

In general, all batteries in all forms of transportation (ground, air, or ocean) 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 outer packaging" that prevents spillage of contents. All original

packaging for Great Power lithium batteries are compliant with these regulatory concerns.

Great Power lithium manganese dioxide batteries are exempt from the classification as dangerous goods as they meet the requirements of the special provisions listed below. ((Essentially, they accord with 56th DGR and are properly packaged and labeled. Great Power Lithium batteries contain less than 0.3 gram of lithium and pass the tests defined in UN model regulation section 38.3).

International transport regulations	**Special Provisions**
ADR	188, 230, 310, 636, 656
IMDG	188, 230, 310, 957
UN	UN 3090, UN 3091
US DOT	29, A54, A100, A101
IATA, ICAO	Packaging Instructions 968 - 970 Section II

15. Regulatory information

N/A

16. Other information

Make people：Professional post：R&D Engineer　Name(sign)：Jack Wu

Make unit：Name：R&D Department　Phone：0086-20-39196888

Address：R&D Dept., Panyu Plant.,

Date of issue：2015/01/28

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