

## Product Safety Data Sheet

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This battery is an exempt article and is not subject to the 29 CFR 1910.1200 OSHA requirements for the preparation of a material safety data sheet. The information and recommendations set forth herein are made in good faith and are believed to be accurate as of the date of preparation. HOWEVER, SOLICORE INC. MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM RELIANCE ON IT.

### SECTION I: IDENTIFICATION

Product name: **Lithium-Manganese Dioxide Cell**  
 Sizes: Flexion SF-2529; SF-4823  
 Chemistry System: Manganese Dioxide/Lithium Metal  
 Nominal Voltage: 3 volts

### SECTION II: LIST OF CHEMICALS

Chemical Name	CAS #	Exposure Limits	Amount
Manganese Dioxide (MnO <sub>2</sub> )	1313-13-9	See Section VII D	>0.10 g
Lithium Metal (Li)	7439-93-2	None Listed	>0.01 g
Lithium bis-trifluoromethanesulfonimide (LiTFSI)	90076-65-6	See Section VII D	>0.03 g
γ-butyrolactone (GBL)	96-48-0	None Listed	>0.04 g
N-methylpyrrolidinone (NMP)	872-50-4	See Section VII D	>0.01 g

**Important Note:** The materials in this section may only represent a hazard if the integrity of the battery is compromised by severely breaching the individual packaging. Only potentially hazardous chemicals are listed.

### SECTION III: HAZARDS IDENTIFICATION

Under normal conditions of use, the battery is sealed and does not pose a physical/chemical, human health or environmental hazard.

### SECTION IV: PRECAUTIONS FOR SAFE STORAGE, HANDLING AND USE

- Keep out of reach of children.
- Do not ingest the battery.
- Should a battery unintentionally be opened, avoid contact with the skin or eyes. In the event of skin or eye exposure to the electrolyte and/or internal battery contents and components, refer to Section V, HEALTH HAZARD MEASURES.
- Do not disassemble or deform. Do not use a battery that appears to be damaged or deformed in any way.
- This battery is manufactured in the charged state and is not designed for recharging. Recharging may result in heating of the battery.
- Storage at elevated temperatures for longer periods of time may result in reduced battery service life. For best results, store in a cool, dry area.
- Do not store batteries in a manner that allows terminals to short circuit. Extended short circuiting may create high temperatures in the battery. Short circuiting may also reduce battery service life.
- Avoid reversing battery polarity within the battery assembly. Reverse polarity can cause heating and shorten battery life.
- Do not subject the battery to temperatures over 135° C, including fire.
- Do not expose the battery to water.

### SECTION V: HEALTH HAZARD MEASURES

If the packaging material of the battery is breached and the internal materials are exposed, the following may apply:

- **Skin Contact:** Contents of an open battery can cause skin irritation and/or chemical burns. Wash hands and contacted area immediately and thoroughly after exposure. If irritation occurs, seek medical attention.
- **Eyes:** Contents of an open battery can cause severe irritation and possibly chemical burns. Immediately flush eyes thoroughly with plenty of water for at least 15 minutes until no evidence of the chemical remains. Seek medical attention immediately.
- **Ingestion:** Swallowing a battery can be harmful. If battery or open battery is ingested, do not induce vomiting or give food. Rinse mouth with several glasses of water. Seek medical attention immediately. CALL NATIONAL BATTERY INGESTION HOTLINE for advice and follow-up (202-625-3333) collect, day or night.



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### SECTION VI: DISPOSAL PROCEDURES

- Disposal in accordance with all applicable federal, state, and local regulations.

### SECTION VII: TRANSPORT INFORMATION

**DOT:** Meets the requirements for the US Department of Transportation listed in 49 CFR 173.185.

#### **Air: (as regulated by ICAO and IATA)**

Proper Shipping Name: Lithium metal batteries  
UN / ID no.: 3090  
Class: 9  
Hazard Labels(s): Miscellaneous  
Packing Group: II  
Packaging Inst: 968

In general, the transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment:

1. For air shipments, meet the International Air Transport Association Dangerous Goods Regulations for Primary Lithium Batteries.
2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185.
3. With limited exceptions, the transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to December 15, 2004 Federal Register (Hazardous Materials; Prohibition on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule) for additional rules that became effective on December 29, 2004.
4. Lithium Batteries manufactured, packaged and shipped by Solicore, Inc. meet the requirements specified above. Any Lithium Batteries subsequently repackaged or reshipped are required to meet all of the requirements specified above.

### SECTION VIII: REGULATORY INFORMATION

- UN Manual of Tests and Criteria: Solicore, UN T1-T6, T8, TP022-05, C07T1-031 (January 2007)
- SARA/TITLE III – As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right-To-Know Act.
- Batteries packed with or installed in equipment are not subject to the label requirement listed in section A. Bulk battery shipment

### SECTION IX: FIRE AND HAZARD DATA

- In case of a fire where lithium batteries are present, Class D media such as Lith-X, METL-X, sand, dry ground dolomite, soda ash or copper powder may be used, but should be applied with a long handled tool. Such smothering agents will extinguish burning lithium batteries. If left unattended and in an area away from other flammable material, burning batteries will burn out. In a confined space, hydrogen gas can form an explosive mixture. In this situation smothering agents are recommended.
- Do not use CO<sub>2</sub> or Halon type extinguishing material as the exposed surface of the contained lithium may react with these materials.
- Water may be used to extinguish packaging fires if batteries have not ruptured. Water is NOT an effective extinguishing media for a battery fire. Water may not extinguish burning batteries but will cool the adjacent batteries and CONTROL the spread of fire. For larger fires involving lithium batteries, copious amounts of water may be applied, from a safe distance, to control the fire and protect adjacent materials and facilities. **PLEASE NOTE: Water is not an extinguishing media – it is a CONTROLLING media.**

### SECTION X: SUPPLIER INFORMATION

The information contained herein is furnished without warranty of any kind. Users should consider this data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers. This document is subject to change without notice.