Ascent Battery Supply, LLC
1325 Walnut Ridge Drive
Hartland, Wisconsin 53029

Safety Data Sheet (SDS) — Lithium Manganese Dioxide (CR Coin)

The information and recommendations below are believed to be accurate at the date of document preparation. Ascent Battery Supply makes no warranty or merchantability or any other warranty, express or implied, with respect to this information and assumes no liability resulting from its use. This SDS provides guidelines for safe use and handling of product. It does not, and cannot, advise all possible situations. All specific uses of this product must be evaluated by the end user to determine if additional safety precautions should be taken.

The following information is provided as a courtesy to Ascent customers.

SECTION 1 - IDENTIFICATION

Product Name	Lithium Manganese Dioxide Battery		
Common Name(s) Synonyms	Lithium Manganese Dioxide Primary Battery, CR Coin, Lithium Manganese Dioxide Non-Rechargeable Battery		
DOT Description	Dry Battery		
Chemical Name	Lithium Manganese Dioxide		
Distributed By	Ascent Battery Supply, LLC	**Emergency Number**	INFOTRAC (800) 535-5053
Address	1325 Walnut Ridge Drive Hartland, Wisconsin 53029	**International Emergency Number**	INFOTRAC (352) 323-3500 (Collect)

SECTION 2 – HAZARD(S)

Intact Batteries	No specific health hazard. If battery exhibits signs of leaking avoid contact without proper protection. The chemical content of these batteries is contained in a sealed case. Risk of exposure occurs only if the battery is mechanically, thermally, or electrically abused. Battery cells may rupture when exposed to excessive heat, which may result in the release of corrosive materials.
Eyes & Skin	Severe irritation or chemical burns if contact with internal material
Inhalation	Irritation of respiratory system if exposed to fumes
Ingestion	Harmful if swallowed; internal battery chemicals will cause severe chemical burns to mouth, esophagus and GI system

SECTION 3 – COMPOSITION

Ingredients	Content by Weight	CAS No.
Manganese Dioxide	18-52%	1313-13-9
Lithium (Li)	1-3%	14809-39-3
Graphite (C)	2-5%	7782-42-5
Electrolyte (organic solvent)	8-12%	n/a
Packaging	Balance	n/a

SECTION 4 – FIRST AID MEASURES

Eyes	For exposure to internal chemicals: rinse immediately with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove contact lenses, if easily possible. Seek medical attention immediately.
Skin	For exposure to internal chemicals: flush immediately with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing and shoes before re-use. Seek medical attention immediately.
Inhalation	For exposure to vapors of internal chemicals: Remove from exposure and move to fresh air immediately. Rinse mouth and nose with water. Do not use mouth-to-mouth resuscitation. If breathing has ceased, apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask. Seek medical attention immediately.

Ingestion	Do not induce vomiting. Do not give anything by mouth to an unconscious person. Seek medical attention immediately.

SECTION 5 – FIRE-FIGHTING MEASURES

Extinguishing Media	Class D dry chemical powder, CO_2.
Hazardous Properties and Combustion Products	Cells or batteries may flame or leak potentially hazardous organic vapors if exposed to excessive heat or fire. Damaged or opened cells or batteries can result in rapid heating and the release of flammable vapors. Vapors may be heavier than air and may travel along the ground or be moved by ventilation to an ignition source and flash back. During water application, caution is advised as burning pieces of flammable particles may be ejected from the fire.
Extinguishing Methods	Promptly isolate the scene by removing all persons from the vicinity of the incident. No action should be taken involving personal risk without suitable training. Approach fire from upwind to avoid hazardous vapors. Move containers from fire area if this can be done without risk. Prevent run-off from entering streams or drinking water supply. Do not re-enter scene until thoroughly ventilated.
Firefighter PPE	Firefighters should wear fire-fighting suits with self-contained breathing apparatus

SECTION 6 – ACCIDENTAL RELEASE MEASURES

General Information	See Section 8
Personal Safety Precautions	No action should be taken involving personal risk without suitable training. Review Sections 5 and 7 before proceeding with spill clean-up. Use proper PPE as indicated in Section 8. Ventilate area adequately. If electrolyte leaks or spills, do not touch or walk through the spill material.
Environmental Protection	In the event of battery rupture, capture all released material in a plastic lined container. Dispose of the container in accordance with local laws and regulations. Do not allow leached substances to seep into the earth or waterways.
Cleaning/Collecting	Pack the battery, including all battery materials, as described above. Clean the affected area with water (diluted acetic acid may also be helpful).

SECTION 7 – HANDLING AND STORAGE

Precautions to be Taken when Handling and Storing	Do not charge, short-circuit, disassemble, deform, heat above 100°C, or incinerate. Do not stack or combine with other types of batteries. Do not store on or near conductive surfaces. Do not mix old and new batteries. Store batteries in well-ventilated, dry, and cool conditions. Keep away from moisture of any kind. Do not store near a heat source or hot air flow.
Other Precautions	Do not store in direct sunlight. Do not allow packaging materials to become wet.

SECTION 8 – EXPOSURE/PERSONAL PROTECTION

PPE: Facilities	Facilities storing or utilizing this product should be equipped with an eyewash station and safety shower
PPE: Eyes	Under normal use, no protection is required. Safety glasses and/or face shield should be used in the event of leakage or battery case rupture.
PPE: Clothing	Under normal use, no special clothing is required. Gloves, boots, apron or other protective clothing should be used in the event of leakage or battery case rupture.
PPE: Respiration	Under normal conditions, no special gear is required. Use appropriate respirator if excessive airborne dust or mist concentrations are present.

SECTION 9 – PHYSICAL/CHEMICAL PROPERTIES

Appearance	Button/Coin Cell	**Boiling Point**	n/a	**Vapor Density**	n/a
Physical State	Solid	**Melting Point**	n/a	**Relative Density**	n/a
Odor	odorless	**Vapor Pressure**	n/a	**Solubility in Water**	Insoluble

SECTION 10 – STABILITY & REACTIVITY

Chemical Stability	Stable under normal conditions and handling
Hazardous Reaction Conditions	External short circuit, crushing, high temperature, open flames, incompatible material contact, direct sunlight, and high humidity may case heat generation and ignition or fire.
Material Incompatibility	Not compatible with conductive materials, water, seawater, strong oxidizers, and acids

SECTION 11 – TOXICOLOGICAL INFORMATION

Relevant Toxicological Limits

	Toxicity
Manganese Dioxide	Rabbit: LDL_0 (blue pipe): = 45mg/kg
	Mouse: $LD5_0$ (subcutaneous): = 422mg/kg
	Chronic exposure: inhalation of dust for prolonged time may cause central nervous system disorder, such as Parkinson's disease
Lithium Metal	Local exposure may cause thermal/chemical burns on skin or in eyes

SECTION 12 – ECOLOGICAL INFORMATION

Discarded batteries may be harmful to the environment.

SECTION 13 - DISPOSAL

To prevent short circuit, prior to disposal, terminals should be taped and/or capped with a protective insulting material. Disposal of large quantities of Lithium Ion batteries or cells may be subject to Local, State or Federal regulations. Consult your Local, State and Federal regulations regarding disposal of these batteries. Do not incinerate.

SECTION 14 – TRANSPORT

This product complies with the UN Recommendations on the Transport of Dangerous Goods; IATA Dangerous Goods regulations, and applicable U.S. DOT regulations for the safe transport of Li-Ion Battery.
This product has been tested under the provisions of the UN Manual of Tests and Criteria, Part III, sub-section 38.3 and is classified as a non-dangerous good.

Air transport
IATA-DGR Packaging Instruction 968, Section IB - it may be transported as Class 9 Dangerous Goods but without using packing group II packaging when it complies with all requirements of the transport conditions of Section IB.
Sea transport
IMDG Code Special provision 188 –permitted to transport as Exempted Dangerous Goods when in compliance with shipping conditions:
UN3090 – Lithium metal batteries
UN3091 – Lithium metal batteries contained in or packed with equipment
Land transport
DOT Code of Federal Regulations (USA) DOT 49 CFR

SECTION 15 – REGULATORY INFORMATION

No additional

SECTION 16 - OTHER

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