



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

SAFETY DATA SHEET (SDS)

**LITHIUM MANGANESE DIOXIDE (CR
 CYLINDRICAL & PRISMATIC)**

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, Lithium Manganese Dioxide Primary Battery, CR Cylindrical & Prismatic, Lithium Manganese Dioxide Non-Rechargeable Battery
Common Name(s)	
Synonyms	
DOT Description	Dry Battery
Chemical Name	Lithium Manganese Dioxide
Distributed By	Ascent Battery Supply, LLC
Address	1325 Walnut Ridge Drive, Hartland, WI 53029
Emergency number	CHEMTREC 1-800-424-9300
International Emergency Number	CHEMTREC +1 703-741-5970 (Collect)

SECTION 2 – HAZARD(S)

Hazard Statements	
Intact Batteries	No specific health hazard. If battery exhibits sign of leaking avoid contact without proper protection. The chemical content of these batteries is contained in a sealed can. 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	Severe irritation or chemical burns if contact with internal material.
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
Acute Effects	NA
Chronic Effects	NA

SECTION 3 – COMPOSITION

Ingredients	CAS No.	Content by Weight
Manganese Dioxide	1313-13-9	20-40%
Lithium Metal	7439-93-2	1-6%
1,2- dimethoxyethane	110-71-4	3-5%
Carbon black	1333-86-4	0-1%

1,3 - Dioxolane	646-06-0	0-8%
Graphite	7782-42-5	0-3%
Steel	7439-89-6	0.5-45%
Polypropylene	9003-07-0	1-10%
Propylene Carbonate	108-32-7	0-8%
Lithium Trifluoromethanesulfonate	33454-82-9	0-3%
Lithium Trifluoromethanesulfonimide	90076-65-6	0-3%

SECTION 4 – FIRST AID MEASURES

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

SECTION 5 – FIRE-FIGHTING MEASURES

Hazardous Properties – 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.

Hazardous Combustion Products - NA

Firefighter PPE - Firefighters should wear fire-fighting suits with self-contained breathing apparatus

Extinguisher Media - Class-D dry chemical powder, sand is suitable; do not use water.

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.

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

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.

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

Boiling Point	NA	Melting Point	NA
Vapor Pressure	NA	Vapor Density	NA
Appearance	Cylindrical & Prismatic	Solubility in Water	Insoluble
Physical State	Solid	Odor	Odorless
Relative Density	NA		

SECTION 10 – STABILITY & REACTIVITY

Chemical Stability - Stable under normal conditions and handling

INCOMPATIBILITY (MATERIALS TO AVOID) –

Not compatible with conductive materials, water, seawater, strong oxidizers, and acids.

Hazardous Reaction Conditions: External short circuit, crushing, high temperature, open flames, incompatible material contact, direct sunlight, and high humidity may cause heat generation and ignition or fire.

Hazardous Decomposition Products: NA

Hazardous Polymerization: NA

SECTION 11 – TOXICOLOGICAL INFORMATION

Relevant Toxicological Limits:

Acute Toxicity	
Manganese Dioxide	Rabbit: LD ₅₀ (blue pipe): = 45mg/kg
	Mouse: LD ₅₀ (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 insulating 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.

Lithium ion cell/battery = UN3480 with Packing Instructions 965

Lithium ion cell/battery packed with equipment = UN3481 Packing Instructions PI966

Lithium ion cell/battery contained in equipment = UN3481 Packing Instructions PI967

Land transport: DOT Code of Federal Regulations (USA) DOT 49 CFR

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

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.

SECTION 15 – REGULATORY INFORMATION

No additional

SECTION 16 – OTHER INFORMATION

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