FDK

Issued date: January 1, 2026

SAFETY DATA SHEET (SDS)

1. Product and Company identification

Product Category : Manganese Dioxide Primary Lithium Battery
Nominal Voltage : 3V
Product name

Model	Lithium (g)
CR17335E-R	0.57
CR17450E-R	0.86
CR17335E-N	0.63
CR17450E-N	0.96
CR17335EF	0.50
CR17335HEF	0.59
CR17335EG	0.63
CR17335EL	0.50

Model	Lithium (g)
CR17450HE-N	0.87
CR17450ENS	0.87
CR17450EG	0.83
CR17450ES	0.83
CR17450ESK	0.96
CR17500EP	0.99
CR2	0.34
CR123A	0.60

Supplier's Name : FDK CORPORATION
Supplier's Address : Shibaura Crystal Shinagawa, 1-6-41 Konan, Minato-ku, Tokyo 108-8212 Japan
Telephone +81-3-5715-7400
Emergency Contact : CHEMTREC at (800)424-9300

Note: SDS is not applicable to the product hermetically sealed as dry battery. The battery has no risk to life and health under normal use or transportation because ingredients of battery are not leaked out by virtue of hermetical sealing with metal case.
This SDS notify possible risk of our battery under abnormal use but mainly aims to provide information about ingredients, notification of handling and transportation regulations as a useful reference.

2. Hazards identification

Important hazards and adverse effects of the chemical product	No information available
Chemical products - specific hazards	No information available
Outline of an anticipated emergency	Chemical contents are sealed in metal can. Therefore, risk of exposure never occurs unless battery is mechanically or electrically abused. Risk of explosion by fire is anticipated if batteries are disposed of in fire or heated above 100 degrees Celsius. If the batteries are extremely short circuited or charged, the batteries may generate heat and explosion or fire.

Note) Our battery is not classified in accordance with the GHS classification.

3. Principal Composition/ information on Ingredients

Part	Material	CAS No.	Contents
Positive electrode	Manganese Dioxide	1313-13-9	30 ～ 45 wt%
Negative electrode	Lithium metal	7439-93-2	3 ～ 4 wt%
Electrolyte	1,2-Dimethoxyethane	110-71-4	6 ～ 8.5 wt%
	Mixture of organic solvent	N/A	3 ～ 10 wt%

4. First-aid measures

Inhalation	If battery contents leak and are inhaled, move to a place with fresh air and seek medical attention.
Skin contact	If battery contents leak and meet the skin, rinse immediately with soap and water. It may cause skin soreness. Seek medical attention if necessary.
Eye contact	If battery contents leak and enter the eyes, flush immediately with plenty of water for at least 15 minutes without rubbing. Use medical treatment as it may cause eye irritation.
Swallowing	In case of battery ingestion, seek medical attention immediately.

5. Fire-fighting measures

Fire extinguishing agent:

Dry chemical, alcohol-resistant foam, powder, atomized water, carbon dioxide and dry sand are effective.

Extinguishing method:

Move the batteries to a safe place to prevent fire spreading.

Because packaging material of battery is paper, use water extinguisher, CO_2 extinguisher or powder extinguisher as normal extinguisher.

Since vapor, generated from burning batteries may make eyes, nose and throat irritate, be sure to extinguish the fire on the windward side. Wear respiratory protection equipment if necessary.

6. Accidental release measures

Chemical contents are sealed in metal can. But if the battery is mechanically or electrically abused, contents may leak out. In such cases, act as shown below.

Personal precautions: Temporary inhalation of odor and attaching of electrolyte to skin does not cause serious health hazard. Be sure of the ventilation and wash out of electrolyte quickly.

Environmental precautions: Clean up quickly. Specific environmental precautions are not necessary.

Method and materials for containment and methods and materials for cleaning up:

Contain and collect spillage and place in container for disposal according to local regulations.

7. Handling and storing

Handling	Do not short-circuit, disassemble, deform, heat or incinerate. Do not place battery on metal case, metal plate or antistatic material. In case of multi cell application, replace all batteries to new at once when replacing used batteries. Do not mix the different types of batteries, the new and old batteries of the same type, or the different manufacture of the same type batteries. Do not use batteries for unspecified purposes.
Storage	Be sure to store batteries in well-ventilated, dry and cool conditions. Keep away from water, rain, snow, frost or dew condensation. Do not store batteries near source of heat or nozzle of hot air. Do not store batteries in direct sunshine. Take care not to get wet packed by dew condensation when packing is removed from cold to warm and humid condition. Enough number of fire fighting apparatuses should be installed in warehouse. Keep batteries out of reach of children.

8. Exposure controls and personal protection

There is no need for personal protective equipment for regular handling and storage. In the event, however, a large amount of electrolyte should be released by mechanical or electrical abuse, use the protections as shown below.

Respiratory protection : Mask (with a filter preferably)
Hand protection : Synthetic rubber gloves
Eye protection : Goggles or glasses

9. Physical and chemical properties

State : Solid
Shape : Cylindrical

10. Stability and reactivity

Stability: Stable on regular handling
Conditions to avoid: External short circuit of battery, deformation by crush, exposure at high temperature of more than 100 degree C (may cause heat generation and ignition), direct sunlight, high humidity
Materials to avoid: Substances that cause short circuits.

11. Toxicological information

Since chemicals are contained in a sealed can, there are no hazards.

12. Ecological information

Persistence and degradability	No information available
Mobility in soil	No information available

13. Disposal considerations

Dispose of batteries in accordance with applicable federal, state and local regulations.
For safety precaution, batteries should be insulated in proper manner; covering both terminals by tape, wrapping batteries in insulation bag or packing batteries in original package is recommended in order to prevent ignition or explosion due to short-circuit.

14. Transportation Information

Lithium metal cells and batteries are classified as Class 9 Dangerous Goods in the United Nations Recommendations and given UN numbers as shown in the below table. In case of transport of lithium metal cells and batteries, compliance with all the relevant UN regulations in addition to the requirements of the United Nations Recommendations is required.
This battery (as described in Chapter 1) is manufactured in a factory certified to the ISO 9001 quality program and meets all test requirements specified in the United Nations Manual of Tests and Criteria, Part III, subsection 38.3.
Furthermore, the packaging used when shipping from our company meets the standards required for each mode of transport.

＜Air Transport＞

This battery falls under the category of single cells containing 1g or less of lithium, or battery packs containing 2g or less of lithium. Therefore, it complies with Packing Instruction 968, Section IB of the IATA Dangerous Goods Regulations (IATA-DGR). Consequently, it can be transported without requiring a Packaging Group II container.
However, if the limits specified in Section IB are exceeded, transportation using the packaging specifications of Section IA is permissible.
Our products can be transported by cargo aircraft only since our products are classified into lithium metal batteries.

＜Maritime Transport＞

This battery qualifies as a single cell containing 1g or less of lithium, or a battery pack containing 2g or less of lithium. Therefore, it can be transported as an exempted dangerous goods item by fully meeting all the transport conditions specified in Special Provision 188 of the International Maritime Dangerous Goods Code (IMDG Code).

Important Notes
When customers (individuals, companies, or organizations) transport our lithium batteries, the responsibility for packaging lies with the shipping customer.
Therefore, regardless of the shipping method (batteries shipped alone, shipped with equipment, or shipped as part of equipment), you must prepare packaging that complies with all applicable regulations. Furthermore, as countries, regions, and shipping companies may have their own specific regulations, we recommend confirming the packaging method and required documentation with your chosen shipping company.

Shipping names / Packing requirements

Proper Shipping Name	UN ID No.	Air transport	Maritime transport
Lithium metal batteries	3090	Packing Instruction 968	Special Provision 188
Lithium metal batteries packed with equipment	3091	Packing Instruction 969	Special Provision 188
Lithium metal batteries contained in equipment	3091	Packing Instruction 970	Special Provision 188

Related regulations: Following regulations shall be cited and considered.

	Organization / Issue documents
UN	UN / Recommendations on the Transport of Dangerous Goods ・Model Regulations ; 23rd revised edition ・Manual of Tests and Criteria: Subsection 38.3; 8th revised edition Amendment 1
Air transport	IATA（International Air Transport Association）/ IATA Dangerous Goods Regulations ; 67th Edition *1
Maritime transport	IMO（International Maritime Organization）/ IMDG Code ; 2024 Edition *2
Land transport (Intra-European)	RID（International Carriage of Dangerous Goods by Rail）, ADR（International Carriage of Dangerous Goods by Road）
USA	USDOT（US Department of Transportation）/ DOT 49 CFR（US law）

Each country, region, or shipping company may have its own regulations, so please check with the shipping company in advance.

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15. Applicable legislation
EU Regulation 2023/1542

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16. Other information
Reference
- IATA Dangerous Goods Regulations, latest edition *1

Notes on this sheet
*1 Dangerous Goods Regulations – 67th Edition: International Air Transport Association (IATA)
*2 IMDG Code – 2024 Edition: International Maritime Organization (IMO)

This sheet refers to normal use of the product in question. FDK Corp. makes no warranty expressed or implied.