FDK

Issued date: January 1, 2024

SAFETY DATA SHEET (SDS)

1. Product and Company identification

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

Type	Lithium (g)
CF042722U	0.01
CF042223	0.01
CF042039	0.01
CF052722U	0.01
CF052039	0.01

Supplier's Name : FDK CORPORATION
Supplier's Address : 1-6-41, Konan, Minato-ku, Tokyo 108-8212 Japan
Telephone +81-3-5715-7420
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 outer case.
This SDS notify possible risk of our battery under abnormal use but mainly aim to provide information about ingredients, notification of handling and transportation regulations as a useful reference.

2. Hazards identification

The important hazards and adverse effects of the chemical product	No information available
Chemical product - specific hazards	No information available
Outline of an anticipated emergency	Chemical contents are sealed in outer case. 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 degree Celsius. If the batteries are extremal 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	15 ～ 25 wt%
Negative electrode	Lithium metal	7439-93-2	0.5 ～ 3.5 wt%
Electrolyte	Mixture of organic solvent	N/A	5 ～ 10 wt%

4. First-aid measures

Inhalation	If ingredient leaked out from inside of a battery and if inhaled it, move to a place where fresh air is provided. Refer for medical attention.
Skin contact	If ingredient leaked out from inside of a battery and stuck on skin, wash the contact areas off immediately with plenty of water and soap. If appropriate procedures are not taken, this may cause sores on the skin. Refer for medical attention.
Eyes contact	If ingredient leaked out from inside of a battery and came into eyes, flush the eyes with plenty of water for at least 15 minutes immediately without rubbing. Take a medical treatment. If appropriate procedures are not taken, this may cause an eye irritation.
Swallowing	In case of swallowing of battery, immediately refer for medical attention.

5. Fire-fighting measures

Fire extinguishing agent:

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

Extinguishing method:

Escape batteries to safe place prevent from ignition by spreading fire.

Because packaging material of battery is paper, use water extinguisher, CO2 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 the respiratory protection equipment in some cases.

6. Accidental release measures

Chemical contents are sealed in outer case. But if the battery is mechanically or electrically abused, contents may leak out. In such case, take action as showing below.

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

Environmental precautions: Clean up it quickly. Specific environmental precaution is 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 type 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 packing 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 of personal protective equipment on 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 : Prismatic（Thin type）

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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 circuit.

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11. Toxicological information

Since chemicals are contained in an outer case, there are no hazards.

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12. Ecological information

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

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13. Disposal considerations

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

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14. Transportation Information

Lithium metal cells and batteries are classified as Class 9 Dangerous Goods in the United Nations Recommendation, 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 United Nations Recommendation is required.
Our battery (listed on section 1) and its shipping package complies with the requirement of UN Manual of Test and Criteria, Part III, subsection 38.3 as well as the requirements described below, so it is permitted to transport.

＜Air Transport＞

Our battery is applicable to IATA Dangerous Goods Regulations (IATA-DGR) Packing Instruction 968 section IB because it corresponds to either case that the cell – lithium content is not more than 1g or the battery – lithium content is not more than 2g, so it is permitted to transport without using the Packing Group II package when it complies with all requirements of the transport conditions for Section IB.
Our products can be transported by cargo aircraft only since our products are classified into lithium metal batteries.

＜Maritime Transport＞

Our battery is applicable to the International Maritime Dangerous Goods Code (IMDG-Code) Special provision 188 because it corresponds to either case that the cell – lithium content is not more than 1g or the battery – lithium content is not more than 2g, so it is permitted to transport as Exempted Dangerous Goods when it complies with all requirements of the transport conditions.

Sipping 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 ; 22nd revised edition ・Manual of Tests and Criteria: Subsection 38.3; 7th revised edition Amendment 1
Air transport	IATA（International Air Transport Association）/ IATA Dangerous Goods Regulations ; 65th Edition *1
Maritime transport	IMO（International Maritime Organization）/ IMDG Code ; 2022 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 Directive 2006/66/EC
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 – 65th Edition: International Air Transport Association (IATA)
*2 IMDG Code –2022 Edition: International Maritime Organization (IMO)

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