

PRODUCT SAFETY DATA SHEET

Manufacturer

Name of Company : Matsushita Battery Industrial Co., Ltd. Primary Battery Company
Address : 1-1 Matsushita-cho, Moriguchi-shi, Osaka, 570-8511 Japan
Division : Lithium and Micro Battery Business Unit
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For emergency in USA : Call CHEMTREC at (800) 424-9300
Outside the USA : Call CHEMTREC at (703) 741-6524 (Collect)

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Name of Product

Polycarbonmonofluoride lithium battery
Model name : BR-C

Substance Identification

Substance : Lithium battery

CAS number : N/A

UN Class : Class 9 UN No. 3090, Lithium battery, PG II

Composition : Positive electrode ; Polycarbonmonofluoride (CF)_n 23% wt
: Negative electrode ; Lithium metal Li 4% wt
: Electrolyte ; Organic electrolyte 26% wt

Hazardous and Toxicity Class

Class name : N/A

Hazard : Electrolyte is highly flammable and the lithium metal cathode is highly waste reactive. (When lithium metal contacts water, flammable hydrogen gas is liberated.) Risk of explosion by fire if batteries are disposed in fire or heated above 100 degree C.

Stacking or jumbling batteries may cause external short circuits, heat generation, fire or explosion.

Toxicity : Vapor generated from burning batteries, may cause eye, skin and throat irritation.

First Aid Measures

The product contains organic electrolyte. In case of electrolyte leakage from the battery, take the following precautions:

- Eye contact : Immediately flush the eyes with plenty of clean water for at least 15 minutes, without rubbing. Seek medical treatment. If appropriate procedures are not taken, electrolyte may cause eye irritation.
- Skin contact : Immediately flush the affected skin with plenty of water and soap. If appropriate procedures are not taken, this may cause skin sores.
- Inhalation : Immediately remove to fresh air. Seek medical treatment.
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Fire Fighting Measures

Extinguishing method : Since vapor generated from burning batteries may irritate eyes, nose and throat, be sure to use self-contained breathing apparatus when fighting any fire. The lithium metal in batteries reacts with water and generates flammable hydrogen gas. There is a risk of explosion by fire fighting using water.

Fire extinguishing agent : Smother the fire with a Class D fire extinguisher containing a material such as Lith-X, copper powder or dry sand. The goal is to totally isolate the burning batteries from the atmosphere.

Measures for electrolyte leakage from the battery

Handling leakage : Take up with absorbent material and disposed of in a non-combustible container.

Handling and Storage

- Handling : When packing the batteries, do not allow battery terminals to Contact each other, or contact with other metals. Be sure to pack batteries by providing partitions in the packaging box, or in a separate plastic bag so that the batteries are not mixed together.
- : Use strong material for packaging boxes so that they will not be damaged by vibration, impact, dropping and stacking during their transportation.
- : Do not recharge batteries. Do not deform batteries.
- : Do not mix different type of batteries or batteries of different ages.
- : Do not solder directly onto batteries.
- Storage : Do not let water penetrate into packaging boxes during their storage and transportation.
- : Do not store the battery in places of the high temperature exceeding 35 degree C or under direct sunlight or other high temperature areas. Also avoid areas of high humidity and do not allow the batteries to freeze.
- : Appropriate fire fighting apparatus should be available at any storage area.

Exposure Control (in case of electrolyte leakage from the battery)

- Acceptable exposure : Not specified by ACGIH.
Facilities : Provide appropriate ventilation system such as local ventilator in the storage place.
Protective clothing : Gas mask for organic gases, safety goggle, and safety glove.
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Physical and Chemical Properties

- Appearance : Cylindrical shape (Height: 50 mm Diameter: 26 mm)
Voltage : 3 volts
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Stability and reactivity

Since batteries utilize a chemical reaction battery performance will deteriorate over time even if they are only stored for a long period of time without being used. In addition, if the various usage conditions such as discharge, ambient temperature, etc. are not maintained within a specified range, the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage.

Lithium batteries contain metallic lithium that is water reactive. Exposing lithium metal to water will result in the generation of flammable hydrogen gas.

Toxicological information (in case of electrolyte leakage from the battery)

- Acute toxicity : Oral (rat) LD50 > 2,000mg/kg (estimated)
Irritation : Irritating to eye and skin.
Mutagenicity : Not specified.
Chronic toxicity : Not specified.
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Transport Information

During the transportation of a large amount of batteries by ship, truck or railway, do not leave them in the places of high temperatures or high humidity.

If the packaging of these batteries is damaged, batteries must be quarantined, inspected and repacked. For emergency information, call CHEMTREC at (800) 424-9300.

For international air and ocean transportation BR-C lithium batteries are regulated as a UN 3090, Class 9, PG II hazardous material. The US DOT does not consider these batteries to a Class 9 hazardous material because they meet the requirements of 49 CFR 173.185 (c)

Regulatory Information

- IATA – International Air Transport Association, Dangerous Goods Regulations, 44th Edition

 - ICAO – International Civil Aviation Association, Technical Instructions for the Safe Transport of Dangerous Goods by Air, 2001-2002 Edition

 - IMO – International Maritime Organization, International Maritime Dangerous Goods Code, 2002 Edition

 - DOT – US Department of Transportation, 49 CFR 173.185, October 1, 2002

 - UN – Recommendations on the Transportation of Dangerous Goods Model Regulations, (ST/SG/AC.10/1/Rev.12)
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