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Safety Data Sheet

Note : SDS is not applicable to the products hermetically sealed. Under normal conditions of use, the battery is contained in a hermetically-sealed case, therefore the information herein contained is provided for your information only.
The information and recommendations set forth herein are made in good faith and are believed to be accurate as of the date of preparation. However, Tohoku Murata Manufacturing Co., Ltd. MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM RELIANCE ON.

1. Product and company Identification

Product Name	Alkaline manganese batteries
Model Name	LR1120, LR1130, LR41, LR43, LR44, LR44R
Brand	murata
Company Name	Tohoku Murata Manufacturing Co., Ltd.
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Date Revised	January 1, 2026
Issued Department	Quality Assurance Department Tohoku Murata Manufacturing Co., Ltd.
Issuing person	Shun Sato

2. Hazard 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	Hazard	Chemical contents are contained in sealed can. Therefore, risk of exposure occurs if the battery is mechanically or electrically abused. The most likely risk is acute exposure when a cell vents KOH is caustic alkali and attack the skin and eye.
	Toxicity	When battery is burned, generated vapor may cause eyes, skin and respiratory irritation.

3. Composition/information on ingredients

Portion	Ingredient	CAS No.	Content ratio wt%
Cathode	Manganese Dioxide	1313-13-9	18 ～ 33 wt%
	Graphite	7782-42-5	1 ～ 4 wt%
Anode	Zinc	7440-66-6	6 ～ 11 wt%
Electrolyte	Potassium Hydroxide (KOH)	1310-58-3	2 ～ 7 wt%

4. First aid measures

Swallowing	Ingestion of a battery can be harmful. Contents of an opened battery can cause serious chemical burns of mouth, esophagus and gastrointestinal tract. In either case, do not induce vomiting nor give food or drink. Seek medical attention immediately.
Skin Contact	Contents of an opened battery can cause skin irritation. Wash skin with soap and water. If inflammation was caused on the skin, seek the medical attention.
Eye Contact	Contents of an opened battery can cause eye irritation. Immediately flush eyes thoroughly with water for several minutes. Seek medical attention.
Inhalation	Contents of an opened battery can cause respiratory irritation. Provide fresh air and call a doctor.

5. Fire fighting measures

Extinguishing Media	In case of fire, it is permissible to use any class of extinguishing medium or water. In the initial state of fire, move batteries from near the fire source to the safety location. Cool exterior of batteries to prevent rupture. Put on protective glasses, mask, gloves, etc.

6. Accidental release measures (In the case that electrolyte is leaked from battery.)

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. In this case, wipe off with cloth soaked with boric acid or water and wash skin with large amount of water.
Environmental Precautions	Wipe off with dry cloth and keep away from fire.

7. Precautions for safe handling and use

Handling	Since improper battery handling may cause leakage, overheating or explosion of the battery, the following precautions shall be observed. (1) Do not short. (2) Insert batteries with positive (+) and negative (-) terminals correctly oriented. (3) Do not mix different type batteries or mix new and old ones together. (4) Do not directly heat, solder or throw into fire. (5) Do not modify, deform or disassemble the battery. (6) Do not have children replace batteries unsupervised by adults. (7) In case of swallowed battery, seek medical attention immediately. (8) This battery is not designed for recharging. To do so can cause leakage or explosion.
Storage	Store in a cool, well-ventilated area. Do not store batteries at high-temperatures or high-humidity. Proper storage temperature is +10℃~+25℃. It is preferable not to exceed +30℃. Avoid extremely higher or lower humidity (85% or more, 45% or less). Avoid exposure to sunlight to prevent performance deterioration, swelling or leakage. Elevated temperature can result in shortened battery life. Since short circuit can cause burn hazard and leak or explode hazard, do not batteries jumbled in containers. Avoid to contact water, metallic chain or metallic chip which may result in short-circuit.

8. Exposure controls/personal protection

N/A

9. Physical and chemical properties

Condition	Solid
Appearance	Button Shape
Nominal voltage	1.5V

10. Stability and reactivity

Stability : Stable under normal conditions of use.
Condition to avoid : See Section 7.

11. Toxicological information

Under normal conditions of use, there is no risk to life and health, because ingredients of battery is hermetical sealed with metal case.

12. Ecological information

When exhausted battery is buried in the ground, it is confirmed that outflow of metal contained in the battery has been seldom found. But we have no ecological information.

13. Disposal considerations

When battery is disposed, isolate positive (+) and negative (-) terminals of the battery to avoid those terminals from touching each other.
Batteries may be short-circuited when piled up or mixed with the other batteries in disorder.
Dispose in accordance with applicable federal, state and local regulations.

14. Transport information

Alkaline manganese batteries are considered as “dry cell” battery and not to subject to hazardous materials (dangerous goods) regulations for the purpose of transportation by the U.S. Department of Transportation (DOT), the International Civil Organization (ICAO), the International Air Transport Association (IATA) or the International Maritime Organization (IMO) and also is not classified as dangerous under the current edition of the IATA DANGEROUR GOODS REGULATIONS (IATA DGR 67th Edition) Special Provision A123 and all applicable carrier and governmental regulations.
Our Alkaline manganese batteries are packed in such a way to prevent short circuits or accidental activation.
During the transportation of a large amount of batteries by ship, trailer or railway, do not leave them in the places of high temperature, do not allow them to be exposed to condensation and do not allow packages to be fallen down or damaged.

15. Regulatory information

・REGULATION（EU）2023/1542

16. Other information

If you need further information, please contact your local sales representative.

For product quotations and sales inquiries, please contact the dedicated form on the Murata Manufacturing website.
Contact to：<https://www.murata.com/en-global/contactform>