

Reference No. MHK 180103T

PRODUCT SAFETY DATA SHEET

IDENTITY (As used on Label and List) Alkaline Button Battery (No Mercury Added) LR44, LR41, LR1130, LR626	Note: Blank spaces are not permitted. If any items is not applicable, or no information is available, the space must be marked to indicate that.
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Section I

Manufacturer's Name MITSUBISHI ELECTRIC HOME APPLIANCE CO., LTD.	Telephone Number (81)47-712-7500
Address (Number, Street, City, State, and ZIP Code) 3-12,SHIOHAMA,ICHIKAWA,CHIBA.272-0127 JAPAN	Fax Number (81)47-307-6010
	Date of preparation: January. 15. 2018

Section II — Hazardous Ingredients/Identity Information

Hazardous components:		
Description:	CAS#	Approximate % of total weight
Manganese Dioxide	1313-13-9	<30 wt%
Zinc	7440-66-6	<12 wt%
Potassium Hydroxide	1310-58-3	<4.0 wt%
Graphite	7782-42-5	<3.5 wt%
Cadmium	7440-43-9	<0.001 wt%
Mercury	7439-97-6	<0.0001 wt%
Lead	7439-92-1	<0.001 wt%

Section III — Physical/Chemical Characteristics

Boiling Point KOH aqua solution = 140°C	Specific Gravity (H ₂ O = 1) MnO ₂ = 4.4, Zn = 7.1, KOH = 2.0
Vapor Pressure (mm Hg) KOH aqua solution = 3mmHg at 20°C	Melting Point MnO ₂ decompose at 535°C Zn = 420°C, KOH aqua = -35°C
Vapor Density (Air = 1)	Evaporation Rate (Butyl Acetate=1)
Solubility in Water KOH—complete	
Appearance and Color	

MnO₂ is a black powder, Graphite is also a black powder, Zinc is a Silver metal.
 KOH aqua is a colorless liquid with stimulative order.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used) Incombustible	Flammable Limits Not Available	LEL	UEL
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Extinguishing Media: See Special Fighting Procedure

Special Fire Fighting Procedure: In case of fire in an adjacent area, use water CO₂ or dry chemical extinguishers if cells are packed in their original container since the fuel of the fire is basically paper products. For bulk quantities of unpackaged cell use LITH-X(Graphite Base). In this case, do not use water.

As with any fire, wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products.

Unusual Fire and Explosion Hazards

Section V — Reactivity Data

Stability Yes=(X)	Unstable ()	Conditions to Avoid Do not short circuit, charge or dispose of in fire.
	Stable (X)	

Incompatibility (Materials to Avoid)

Hazardous polymerization will not occur.

Hazardous Decomposition or Byproducts

Not Available

Hazardous Polymerization Yes=(X)	May Occur ()	Conditions to Avoid
	Will Not Occur (X)	

Section VI — Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	Yes	Yes	Yes

Health Hazards (Acute and Chronic)

These chemicals are contained in a sealed can. Risk of exposure occurs, only if 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 eyes. Contact of electrolyte with skin and eyes should be avoided.

Section VII — Ecological Information

Cardnogenicity	NTP?	IARC Monographs?	OSHA Regulated?
	Not Available	Not Available	Not Available

Signs and Symptoms of Exposure

KOH can cause chemical burn upon contact with skin.

Medical Conditions

Generally Aggravated by Exposure

An acute exposure will not generally aggravate any medical help.

Section VIII — Emergency and First Aid Procedures

In case of skin contact with content of battery, flush immediately with water.

For eye contact, flush with copious amount of water for 10 minutes. If imitation persists, get medical help.

Section IX — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled

Wipe out by wet duster.

Section X — Waste Disposal Method

General abandonment

Section XI — Precautions to Be Taken in Handling and Storing

Avoid mechanical or electrical abuse.

Section XII — Other Precautions

Do not short circuit, charge or dispose of in fire. Battery may explode or leak.

Section XIII — Control Measures

Respiratory Protection (Specify Type)		Not Available	
Ventilation	Local Exhausts	Special	Not Available
	Mechanical (General)	Other	Not Available
Protective Gloves		Eye Protection	Safety Glasses
Other Protective Clothing or Equipment		Not Available	
Work/Hygienic Practices		Not Available	

Section XIV — Regulatory Information

Not Available.

Section XV — Other Information

Not Available

Section XVI — Transportation Information

Mitsubishi Alkaline button cell are considered to be “dry cell” batteries and are not listed as dangerous goods under below regulations:

1. Batteries, dry fulfills the requirement of U.S. Department of Transportation (DOT), Special provision 130, i.e. they are offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals or batteries to be packed in such a way to prevent short circuits or generation of a dangerous quantity of heat.)”.
2. International Civil Aviation Administration (ICAO) and International Air Transport Association (IATA), Special Provision A123, i.e. "An electrical battery or battery powered device having the potential of dangerous evolutions of heat that is not prepared so as to prevent a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals or batteries to be packed in such a way to prevent short circuits or generation of a dangerous quantity of heat.) is forbidden from transportation."
3. International Maritime Dangerous Goods Regulations (IMDG) 2012 edition does not regulate these batteries.

Example of such batteries include alkali-manganese, silver oxide, zinc carbon, nickel metal hydride and nickel-cadmium batteries.