# Products Information Data Sheet

These products are hermetically sealed state in a vessel, and are exempted from Safety Data Sheet regulations. However, this manual provides you with referential information to safety use the products.

## Section 1 - Products and Company Identification

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|---|---|---|
| Products name | : | Alkaline Dry Batteries (LR) |
| Products sizes | : | LR20 LR14 LR6 LR03 LR1 |
| Company | : | TOSHIBA LIFESTYLE PRODUCTS & SERVICES CORPORATION |
| Address | : | 25-1, Ekimae-honcho, Kawasaki-ku, Kawasaki, Kanagawa 210-8543, Japan |
| Telephone | : | +81-44-577-0142 |
| Fax | : | +81-44-222-6264 |

## Section 2 - Composition/ Information on Ingredients

| Ingredients | CAS# | PRTR | Weight/Content |
|---|---|---|---|
| Manganese dioxide ($MnO_2$) | 1313-13-9 | 1-412 | 50 wt% |
| Graphite (C) | 7782-42-5 | Not regulated | 5 wt% |
| Potassium hydroxide (KOH) | 1310-58-3 | Not regulated | 10 wt% |
| Zinc (Zn) | 7440-66-6 | Not regulated | 35 wt% |

## Section 3 - Summary of Danger and Toxicity

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| Fatal danger and toxicity | : | No information available |
| Danger and toxicity | : | Chemical ingredient is hermetically sealed in a vessel, so the product is neither dangerous nor toxic as a cell. Potassium hydroxide which is the contents of cell is an acute toxic substance and so corrosive. If adhering to skin, it ulcerates skin. If getting into eyes, cornea and conjunctiva are acutely attacked, causing poor eyesight and blindness. If inhaled, bronchi, lung and throat are attacked, resulting possibly in pulmonary edema. |
| Effect to environment | : | Although no information is available as a cell. Potassium hydroxide is reported as $LC_{50}$ (24 hours): 80 mg/L in mosquito fish as a result of a fish toxicity survey. |
| Overview of prospective emergency | : | A cell may break or be shorted by an external mechanical or electrical stress. |

## Section 4 - First Aid Measures

There is no problem in the normal state. But take the following measures when the contents have begun to leak by the destruction of the battery.

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| Inhalation | : | If a person inhaled steam, move to the place where air is fresh immediately. If he/her feels ill, immediately call a doctor for therapy and treatment. |
| Skin | : | If the content adheres to skin, immediately wash it with a large amount of clean water and soap promptly. If irritating, consult a doctor. |
| Eyes | : | If the content enters eyes, rinse eyes with a large amount of clean water for more than 15 minutes, and consult a doctor. |

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| Ingestion | : | If a cell is swallowed, immediately call a doctor for therapy and treatment. |

## Section 5 - Fire Fighting Measures

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| Fire extinguishers | : | Powder extinguisher, foam extinguisher, carbon dioxide gas extinguisher, large amount of dry sand |
| Specific firefighting method | : | In the initial state of a fire, move cells/batteries from near the fire source, to a safe location. At that time, work at a windward location, as far as possible, and be sure to put on a protective breathing mask. |
| Protection of firefighting personnel | : | Be wear protective breathing masks, gloves, glasses and helmet for the keeping safe. (Preferably, use a self-feeding type mask.) |

## Section 6 - Action upon Leakage and Removing Method

A cell hermetically contains constituents in a vessel, so contents normally may not leak out. However, if the contents leaks because of a mechanical or electrical stress, wipe with liquid-boric to absorb it, and collect in a vessel. After that, flush the site with a large amount of water. At that time, be sure to put on protective-gloves, glasses and mask. (Preferably, use a self-feeding type mask.)

## Section 7 - Handling and Storage

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| Handling | : | Never solder a cell body.<br>Do not contact cell terminals between each other, or with another conductor. Neither throws into fire, decompose, heat, dent, deform, charge nor drop a battery. Do not dip a cell in water or seawater. |
| Storage | : | Store cells without direct sunlight, high temperature, high humidity, rain, dew, etc., and select a storage location with a temperature as low as possible (preferable temperature 10-25°C and relative humidity 70% or less). In addition, keep cells away from dangerous matter such as combustible or ignitable materials. Absolutely never place a cell in contact with a combustible or conductive substance. Prepare appropriate firefighting equipment. |
| Note | : | See handling and storing precautions described in the product catalog, specification, etc. |

## Section 8 - Prevention from Exposure

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| Protection of respiratory organs | : | Not required in a normal operating state |
| Protection of eyes | : | Not required in a normal operating state |
| Other protective tools etc. | : | Not required in a normal operating state |

## Section 9 - Physical and Chemical Properties

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|---|---|---|
| Shape | : | Cylindrical. Contents are sealed in a stiff stainless steel vessel. |
| PH | : | Not applicable because a cell is not soluble with water. |
| Boiling point/boiling range | : | No information |
| Melting point | : | No information |
| Decomposition temperature | : | No information |

Flash point : No information

## Section 10 - Stability and Reactivity

Conditions to be avoided : If a number of cells are mixed up without insulating terminals, they may short and possibly heat, break and ignite. When a cell is charged, possibly in bursting the electrolyte etc. Or, it may possibly burst or fire. If a cell is heated or thrown into fire, it may explode or fire with the electrolyte etc. bursting from inside of the cell.
If decomposed, there is a possibility of overheating or fire due to short circuit, and ignition of some material around etc.

## Section 11 - Information on Toxicity

There is no toxicity because chemical substances are hermetically sealed in a metal vessel.

As a reference, chemical substances composing a cell are described below.

Manganese dioxide

Acute toxicity : $L_DL_O$:45mg/kg (Intravenous injection, rabbit)
$L_D$:422mg/kg (Hypodermic injection, mouse)

Irritation : Irritating eyes, nose, throat and skin.

Chronic toxicity : If a person is exposed to powder for a long time or repeatedly, the lung and the nervous system may be affected, possibly causing bronchitis, pneumonia, nervous disease or mental disease.

Procreation toxicity : $TCL_O$:49mg/m$^3$ (Inhalation, mouse)

Graphite

Chronic toxicity : If inhaled for a long time without protective tools, local ventilation, etc., graphite lung may result.

Breathing toxicity : If inhaled for a long time without protective tools, local ventilation, etc., graphite lung may result.

Potassium hydroxide

Acute toxicity : $L_{D50}$:273mg/kg (rat, oral)

Acute and chronic toxicity : If skin repeatedly contacts a dilute solution, various tissues on the skin surface are attacked, causing dermatitis due to direct irritation or chronic eczema.

Mutagenesis : Hamster, ovary, positive

Zinc powder

Acute toxicity : $LC_{50}$:2500mg/m$^3$(rat, Inhalation)
$TCL_O$:124 mg/m$^3$/50min (Human, via respiratory tract)

## Section 12 - Ecological Information

No information as batteries.

## Section 13 - Disposal Precautions

Disposal of the substance should be done according to the laws and regulations.

Although used cells can be discarded basically as “nonflammable refuse,” some local governments sort and collect them at their own discretion. Therefore, observe instructions of the government you belong to, to dispose of the substance.

Keep the following discarding precautions：

- Even a used cell sometimes stores electric energy. Therefore, to prevent the battery from short-circuit, isolate cells from each other by a method such as taping +, - terminals of cells, or using the individual housing case of a cell, used when you bought the battery, and orderly encasing batteries in a box, then submit an application of disposal to the local government of your residence, using the designated form.
- Packing cells so that they are not shorted, and prevent the package from being wetted.
- If cells must be discarded in a country other than Japan, observe the instructions of the country and local government.

## Section 14 - Transportation Precautions

TOSHIBA Alkaline Dry Batteries are considered to be “dry cell” batteries and are not regulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO), International Air Transport Association (IATA) and International Maritime Dangerous Goods Regulations (IMDG). Shipping these batteries is subject to the only requirements by DOT is Special Provision 130 i.e.”Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals)”. Shipping these batteries is subject to the only requirements by ICAO and IATA is 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) is forbidden from transportation.” The International Maritime Dangerous Goods Code (IMDG) regulate them for ocean transportation under Special Provision 304 which says: “Batteries, dry, containing corrosive electrolyte which will not flow out of the battery case is cracked are not subject to the provisions of this Code provided the batteries are securely packed and protected against short-circuits. Examples of such batteries are: alkali-manganese, zinc carbon, nickel metal hydride and nickel-cadmium batteries.

## Section 15 - Applicable Laws and Regulations

The laws and ordinances about the battery shall obey the latest laws and ordinances.

## Section 16 - Other Information

The Alkaline dry cells/batteries fall in the category of “Article” defined by EPA (U.S. Environment Protection Agency), and chemical substances used in a battery satisfy the application exemption conditions (40.crf.720.3.c) as part of “Article,” so the batteries are not regulated by TSCA.

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| Revised Day | : | January 01, 2021 |
| Preparation This Sheet | : | TOSHIBA LIFESTYLE PRODUCTS & SERVICES CORPORATION<br>Engineering Group<br>Planning & Procurement Dept.<br>Battery Business Div. |