FDK

SAFETY DATA SHEET

Alkaline Manganese Battery

FILE NO.:AC2014E2

SDS DATE: 08/07/2014

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Alkaline Manganese Battery
SYNONYMUS: Dry Battery
PRODUCT CODES: LR20, LR14, LR6, LR03, LR1, 6LR61(6LF22)

MANUFACTURER: FDK CORPORATION
DIVISION: Battery Quality Assurance Dept.
ADDRESS: 5-36-11 Shimbashi, Minato-ku, 105-8677, Tokyo, Japan

EMERGENCY PHONE: +81-33434-2238
CHEMTREC PHONE: 800-424-9300
OTHER CALLS: +81-53-576-5141
FAX PHONE: +81-53-576-4183

CHEMICAL NAME: Not chemical/ Article
CHEMICAL FAMILY: N/A
CHEMICAL FORMULA: N/A

PRODUCT USE: Supplying electricity (1.5V or 9V/DC) to many applications
PREPARED BY: FDK CORPORATION

SECTION 1 NOTES:
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 metal case. Under OSHA regulations, batteries are considered "articles" and are not subject to the OSHA Hazard Communication Standard MSDS/SDS requirements which apply for "hazardous chemicals in the workplace." Additionally, batteries are considered "articles" under the Global Harmonized System and are exempted from the GHS labeling and SDS classification criteria.
This SDS notifies 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.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT:

Chemical Name	CAS No.	Composition Range	LD50/LC50	Exposure Linits
Manganese Dioxide	1313-13-9	40 – 60 %	LD50 oral rat>3478 mg/kg	5 mg/m3 Ceiling OSHA PEL 0.2 mg/m3 TWA ACGIH TLV
Graphite	7782-42-5	1 – 5 %		Natural: 15 mppcf TWA OSHA PEL
Zinc	7440-55-6	10 – 25 %		None established for zinc metal
Sodium Hydroxide	1310-58-3	5 – 10 %	LD50 oral rat 273 mg/kg	2 mg/m3 Ceiling ACGIH TLV

OSHA PEL-TWA: N/A
OSHA PEL STEL : N/A
OSHA PEL CEILING: N/A

SECTION 2 NOTES:
The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Hazardous Ingredients as defined by OSHA, 29 CFR 1910.1200. and/or WHMIS under the HPA:

SECTION 3: HAZARDS IDENTIFICATION

CAUTION:
Batteries may explode or leak, and cause burn injury, if recharged, disposed of in fire, mixed with a different battery type, inserted backwards in equipment or disassembled. Replace all used batteries at the same time. Do not carry batteries loose in your pocket or purse. Do not remove the battery label. Keep small batteries (i.e., AAA) away from children. If swallowed, consult a physician at once. For information on treatment, call (202) 625-3333 collect.

SECTION 4: FIRST AID MEASURES

Inhalation:	Inhalation of fume of released electrolyte may stimulate respiratory organ. Provide fresh air. Refer for medical attention.
Skin contact:	Released contents from battery may cause skin irritation and/or chemical burns. Remove contaminated clothes and rinse skin with plenty of water. If chemical burn occurs or if irritation persists, get medical assistance.
Eyes contact:	If released content from battery is attached on eyes, severe irritation and chemical burns occur. Immediately rinse with plenty of water for several minutes (remove contact lenses if possible), get medical assistance.
Ingestion:	Do not induce vomiting. Seek medical attention immediately. **CALL NATIONAL BATTERY INGESTION HOTLINE at (202)-625-3333 collect, day or night.**

SECTION 4 NOTES:
Chemical contents are sealed in metal can. Risk of exposure never occurs unless battery is mechanically or electrically abused. First aid shown above may need in such abnormal case only.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR: N/A
FLASH POINT: N/A

EXTINGUISHING MEDIA:
Because packaging material of battery is paper, use water extinguisher, CO2 extinguisher or powder extinguisher as normal extinguisher.

SPECIAL FIRE FIGHTING PROCEDURES: Protective Equipment and Precautions for Firefighters
Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS: N/A

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal degradation may produce hazardous fumes of zinc and manganese; hydrogen gas, caustic vapors of potassium hydroxide and other toxic by-products.

SECTION 5 NOTES:
Since vapor, generated from burning batteries may make eyes, nose and throat irritates, be sure to extinguish the fire on the windward side. Wear the respiratory protection equipment in some cases.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Be sure the ventilation and washing out of attached 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:
Not applicable. Clean up and dispose of it according to section 13

Prevention of secondary hazards: No need.

SECTION 6 NOTES:
Chemical contents are sealed in metal can. But if the battery is mechanically or electrically abused, contents may leak out. In such case, take clean up measure.

SECTION 7: HANDLING AND STORAGE

Transportation and freight handling:	(1) Prevent wetting of packing by rain or dew condensation. (2) Do not place packing near source of heat. (3) Do not drop packing from more than 1m height and do not press packing allowing deform it.
Handling :	(1) Do not charge, short-circuit, disassemble, deform or disposed of in fire. (2) Do not pile up or mingle batteries with each other. (3) Do not place battery on metal case, metal plate or antistatic material. (4) In case of multi cell application, replace all battery to new at once when replacement of used batteries.
Storage :	(1) Be sure to store batteries in well-ventilated, dry and cool conditions. (2) Prevent wetting of packing by rain, snow, frost or dew condensation. (3) Do not store batteries near source of heat or nozzle of hot air. (4) Do not store batteries in direct sunshine. (5) Take care of wetting of packing caused by dew condensation when packing is removed from cold to warm and humid condition.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION : Nessessary

RESPIRATORY PROTECTION: Mask (with filter preferably)

EYE PROTECTION: Goggles or glasses

SKIN PROTECTION: Synthetic rubber gloves

SECTION 8 NOTES:
There is no need of personal protective equipment on regular handling and storage, but lot of electrolyte is released by mechanical or electrical abuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Typical appearance of battery as known everyone.

ODOR: No odor

Battery is finished consumer product, pgysical and chemical properties such as pH or boiling point are not applicable.

SECTION 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 85 degree C (may cause leakage and rupture), direct sunlight, high humidity
Materials to avoid: Water, a chain, and a piece of metal that causes short circuit.
Hazardous decomposition product: Emitted acrid or poisonous gases in fire.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

Chronic Effects: No chronic health effects reported.
Target Organs: No target organs reported.
Carcinogenicity: This finished consumer product is not carcinogenic.

SECTION 11 NOTES:
Battery is a finished consumer product. It is classified as an "article" and exempt under the federal OSHA Hazard Communication standard.

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:

Anticipated behavior of chemical product in environment/possible environmental impact/ecotoxicity	No information available
Persistence and degradability	No information available
Bioaccumulative potential	No information available
Mobility in soil	No information available

SECTION 12 NOTES:
Exposure of internal content of battery may occur by corrosion of metal case of battery after batteries are disposed of in ground and kept for long time. But no available information about environmental hazard is reported after evaluation of long term landfill experiment.
Our alkaline batteries do not contain any added mercury, cadmium or lead.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of in compliance with federal, state/provincial and local regulations.

RCRA HAZARD CLASS: Alkaline batteries covered by this SDS, in their original form (finished consumer product), when disposed of as waste, are considered non-hazardous waste according to Federal RCRA regulation (40 CFR 261).

Household Use:
Alkaline batteries can be safely disposed of with normal household. Do not accumulate large quantities used batteries for disposal as accumulation could cause batteries to short-circuit. Do not incinerate. In countries, such as Canada, where there are regulations for the collection and recycling of batteries, consumers should dispose of their used batteries into the collection network at municipal depots, retailers or other appointed place. They should not dispose of them with household waste.

SECTION 14: TRANSPORT INFORMATION

Alkaline batteries (sometimes referred to as "Dry cell" or "household" batteries) are not listed or regulated as dangerous goods under the IATA Dangerous Goods Regulations, ICAO Technical Instructions, IMDG Code, UN Model Regulations or U.S. hazardous regulations (49CFR). However, special regulatory provisions apply that require batteries to be packaged in a manner that prevents the generation of a dangerous quantity of heat by short circuits. Product shipped in its original packaging is compliant with the following packaging special provisions:

Ground Transport (US DOT): 49 CFR172.102 Special Provision 130

Air Transport (IATA)/ICAO: Special Provision A123 (55th Edition – 2014)
The words 'NOT RESTRICTED' and the 'Special Provision A123' must be included on the description of the substance on the Air Waybill, when air waybill is issued.

Sea -Marine/Water Transport (IMDG): NONE (Not Applicable - No Requirements)

SECTION 15: REGULATORY INFORMATION

OSHA: The finished alkaline battery product is considered an article and not covered by the OSHA Hazard Communication Standard, 29 **CFR 1910.1200 CPSIA 2008:** Alkaline batteries are exempt. See CPSC Exemption Letter posted on P&G web site.
EPA Mercury Containing and Rechargeable Battery Management Act of 1996: Compliant
EPA TSCA: All intentionally-added components of this product are listed on the US TSCA Inventory.
EPA SARA 313/302/304/311/312 chemicals: Manganese compounds 40-60%; Zinc 10-25% California: This product has been evaluated and does not require warning labeling under California Proposition 65.
State Right-to-Know and CERCLA: The following ingredients present in the finished product are listed on state right-to-know lists or state worker exposure lists:

Ingredient	CAS No.	Level	CERCLA RQ	State				
				IL	MA	NJ	PA	RI
Manganese Dioxide	1313-13-9	40 – 60 %	None	Y	Y	N	Y	Y
Graphite	7782-42-5	1 – 5 %	1000 lbs	Y	Y	N	Y	Y
Zinc	7440-55-6	10 – 25 %	1000 lbs	Y	Y	Y	Y	N
Sodium Hydroxide	1310-58-3	5 – 10 %	None	Y	Y	Y	Y	Y

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:
Reference; IEC 60086-1(2011), 60086-2 (2011), 60086-5 (2011)
Database on TSCA Inventory(EPA) , Ministry of the Environment Japan.
Dangerous Goods Regulations
International Air Transport Association (IATA)

DISCLAIMER:
The information and the recommendations set forth are made in good faith and believed to be accurate to the best of the Company's knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations.