WUXI NORAN BATTERY CO., LTD

Material Safety Data Sheet for Dry Batteries

Ref.No.:NL2024010101

Section Ⅰ - Information of Manufacturer

Manufacturer's Name: Wuxi Noran Battery Co.,Ltd
Address:: NO.10 Yanyu Middle Road , Qianzhou Town, Wuxi City, Jiangsu Province, China
Telephone number/FAX number: TEL:0086-0510-83381858
Battery type: LR6/LR03/LR14/LR20/6LR61/3LR12/LR1/4LR20/4LR25
MSDS Creation Date:2024-01-01

Section Ⅱ - Hazardous Ingredients / Identity Information

Description	CAS No.	% of Total Weight
Manganese Dioxide	1313-13-9	40 Wt%
Zinc Metal	7440-66-6	16 Wt%
Potassium hydroxide	1310-58-3	8 Wt%
Water	7732-18-5	10 Wt%
Iron	7439-89-6	17 Wt%
Paper	RR-01108-	1 Wt%
Copper	7440-50-8	3 Wt%
Nylon	9008-75-7	2 Wt%
Graphite	7782-42-5	3 Wt%

Section III - Physical / Chemical Characteristics

Boiling Point: N.A	Specific Gravity(H_2O=1): N.A
Vapor Pressure(mm Hg): N.A	Vapor Density (AIR=1): N.A
Solubility in Water: N.A	Melting Point : N.A
Appearance and Odor	Cylindrical Shape, odorless

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used): N.A	Flammable Limits : N.A.
LEL: N.A	UEL: N.A

Extinguishing Media: . Carbon Dioxide, Dry Chemical or Foam extinguishers.

Do not dispose of battery in fire - may explode.

Special Fire Fighting Procedures: N.A.

Do not short-circuit battery - may cause burns.

Section Ⅴ - Reactivity Data

Stability：
Incompatibility (Materials to Avoid)： Hazardous Decomposition or Byproducts
Polymerization： Will Not Occur

Section VI - Health Hazard Data

Route(s) of Entry: Inhalation? N.A ； Skin? N.A；
Ingestion? N.A

Health Hazard (Acute and Chronic) / Toxic logical information

- In case of electrolyte leakage, skin will be itchy when contaminated with electrolyte. In contact with electrolyte can cause severe irritation and chemical burns.

Section VII - First Aid Measures

First Aid Procedures：

- If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately.
- If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) minutes, and contact a physician.

Section VIII - Accidental Release or Spillage

Steps to Be Taken in Case Material is Released or Spilled

- Batteries that are leakage should be handled with rubber gloves.
- Avoid direct contact with electrolyte.

Section IX - Handling and Storage

Safe handling and storage advice

- Batteries should be handled and stored carefully to avoid short circuits.
- Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries
- Never disassemble a battery.
- Do not touch internal material with bare hands.
- Keep batteries between -30° C and 35° C.

SectionX - Ecological Information

- **Ecological Information** ： N.A

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Section XI - Exposure Controls / Person Protection

- ◆Occupational Exposure Limits: LTEP N.A.
- ◆Respiratory Protection (Specify Type): N.A.
- ◆Ventilation Local Exhausts: N.A.
- ◆Eye Protection: N.A.
- ◆Other Protective Clothing or Equipment: N.A.

Section XII - Disposal Method

- ◆Dispose of batteries according to government regulations.

Section XIII - Regulation Information

Regulation Information

- ◆Special requirement be according to the local regulations

Section XIV - Transportation Information

Kendal primary Dry cylindrical batteries are considered tobe "dry cell" batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civic Aviation Administration(ICAO), International Air Transport Association (IATA), the International Maritime Organization (IMO), the "Accord Europeén Relatif au Transport International des Marchandises Dangereuses par Route" (ADR)) and the "Règlement concernant le transport international ferroviaire de marchandises Dangereuses" (RID).

Kendal batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions.

Regulatory Body	Special Provisions
ADR	Not regulated
IMDG	Not regulated
UN	Not regulated
US DOT	49 CFR 172.102 Special Provision 130
IATA	A123
ICAO	Not regulated

IATA DGR: Special Provision A123: "Examples of such batteries are: alkali-manganese, zinc-carbon,, nickel-metal hydride and nickel-cadmium batteries. Any electrical battery ... having the potential of a dangerous evolution of heat must be prepared for transport as to prevent (a) a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals...) is forbidden from transport; and (b) accidental activation. The words "Not Restricted" and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6,when an Air Waybill is issued."

EU: As primary Dry cylindrical cells/batteries are not explicitly mentioned in RID/ADR, there are no special Dangerous Goods shipment requirements for these products.

USA: 49 CFR § 172.102 Special Provision 130: "For other than a dry battery specifically covered by another entry in the § 172.101 Table, "Batteries, dry" are not subject to the requirements of this subchapter when they are securely packaged and offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals) and protects against short circuits."

Code of practice for packaging and shipment of primary batteries given in IEC 60086-1: The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture. Shock and vibration shall be kept to a minimum. For instance, boxes should not be thrown off trucks, slammed into position or piled so high as to overload battery containers below. Protection from inclement weather should be provided.

Section XV-Other Information

◆The data in this Material Safety Data Sheet relates only to the specific material designated herein。

Section XVI - Measures for fire extinction

◆In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.
◆Fire fighters should wear self-contained breathing apparatus.