No.: GJW2018-4411

Material Safety Data Sheet

Name of Sample: Alkaline manganese button battery

Commissioner: Huizhou Winpow Electronic Co., Ltd.

Vkan Certification & Testing Co., Ltd.

Material Safety Data Sheet

1. Chemical product and company identification	
Name of Sample	Alkaline manganese button battery
Type/Mode	LR44 1.5V 145mAh
Commissioned by	Huizhou Winpow Electronic Co., Ltd.
Commissioner address	Huling Industrial Zone 18#, Xiao Jinko Town, Huizhou, Guangdong,P.R. China
Manufacturer	Huizhou Winpow Electronic Co., Ltd.
Manufacturer address	Huling Industrial Zone 18#, Xiao Jinko Town, Huizhou, Guangdong,P.R. China
Inspection according to	UN “Recommendations on the TRANSPORT OF DANGEROUS GOODS” ST/SG/AC.10/1/Rev.20 IATA Dangerous Goods Regulations 60th Edition IMDG CODE（Amdt.38-16）2016 Edition
Emergency telephone call	0752-5805898
-	Receiving date:：2018-12-18 Date of issue:2018.12.29

Approved by: Reviewed by: Tested by:

2. Composition information

Chemical Composition	Chemical Formula	CAS No.	Weight (%)
Manganese Dioxide	MnO_2	1313-13-9	23.04
Zinc	Zn	7440-66-6	10.18
Iron	Fe	7439-89-6	50.45
Potassium Hydroxide	KHO	1310-58-3	3.48
Carbon	C	7440-44-0	4.01
Water	H_2O	7732-18-5	4.38
Nylon	-	24937-16-4	2.19
Other	-	-	2.27

3. Hazards identification

The sample Alkaline Zinc-Manganese Dioxide Battery listed in this report is primary batteries. According to the relevant provision of UN “Recommendations on the TRANSPORT OF DANGEROUS GOODS” ST/SG/AC.10/1/Rev.20, IATA Dangerous Goods Regulations 60th Edition and IMDG CODE（Amdt.38-16）2016 Edition, the sample doesn’t belong to Dangerous Goods.

4. First aid measures

Eye: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

Ingestion: Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician

5. Fire-fighting measures

Flash Point: N/A.

Auto-Ignition Temperature: N/A.

Extinguishing Media: Water, CO_2.

Special Fire-Fighting Procedures： Self-contained breathing apparatus.

Unusual Fire and Explosion Hazards

Cell may vent when subjected to excessive heat-exposing battery contents.

Hazardous Combustion Products： Metal oxide fumes.

6. Accidental release measures

Steps to be taken in case of Material is Released or Spilled

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous fumes. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of fumes. Remove spilled liquid with absorbent and incinerate.

Waste Disposal Method

It is recommended to discharge the battery to the end and pass to professional department for treatment.

7. Handling and storage

The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

Precautions to be taken in handling and storing

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, where is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

Other Precautions

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

8. Exposure controls/personal protection

Respiratory Protection

Respiratory Protection is not necessary under conditions of normal use.

Ventilation

Not necessary under conditions of normal use.

Protective Gloves

Not necessary under conditions of normal use.

Other Protective Clothing or Equipment

Not necessary under conditions of normal use.

Personal Protection is recommended for venting battery

Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

9. Physical and chemical properties

Appearance: Cylindrical Shape

Odour: None.

pH: Not applicable under conditions of normal use.

Flash Point: NA.

Flammability: NA.

Solubility (water): Insoluble in water under conditions of normal use.

Solubility (other): Not applicable unless individual components exposed.

10. Stability and reactivity

Stability: Product is stable under conditions described in Section 7.

Conditions to Avoid : Heat above 70°C or incinerate. Deform. Mutilate. Crush. Disassemble. Charge. Short circuit. Expose over a long period to humid conditions.

Materials to avoid: Oxidizing agents, acid, alkalis, water.

Hazardous Decomposition Products: Toxic Fumes, and may form peroxides.

Hazardous Polymerization: N/A.
If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

11. Toxicological information

Signs & symptoms: None, unless battery ruptures.
In the event of exposure to internal contents, electrolyte will cause chemical burn and irritating to the eyes and skin.
Inhalation: NA.
Skin contact: Skin irritant.
Eye contact: Eye irritant
Ingestion: Poisoning if swallowed..
Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to server irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

12. Ecological information

Mammalian effects: None known at present.
Eco-toxicity: None known at present.
Bioaccumulation potential: Slowly Bio-degradable.
Environmental fate: None known environmental hazards at present.

13. Disposal consideration

Do not incinerate, or subject cells to temperature in excess of 70°C, Such abuse can result in loss of seal leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations.

14. Transport information

Label for conveyance: Not Applicable.
UN Number: Not Applicable.
Marine pollutant: No
The samples are properly protected so as to prevent short circuits and accidental activation in the package.
According to the IATA Dangerous Goods Regulations 60th Edition special provisions A123, the sample list in this report can be considered as a "dry cell" and transport as ordinary goods.
According to IMDG CODE（Amdt.38-16）2016 Edition， the sample list in this report can be transport as ordinary goods.

15. Regulation information

Law information
《Dangerous Goods Regulations》
《Recommendations on the Transport of Dangerous Goods Model Regulations》
《International Maritime Dangerous Goods》

《Technical Instructions for the Safe Transport of Dangerous Goods》
《Classification and code of dangerous goods》
《Occupational Safety and Health Act》(OSHA)
《Toxic Substance Control Act》(TSCA)
《Consumer Product Safety Act》(CPSA)
《Federal Environmental Pollution Control Act》(FEPCA)
《Resource Conservation and Recovery Act》(RCRA)
《Safety Drinking Water Act》(CWA)

16. Other information

This file is only effective to the primary batteries (alkaline battery：LR44), which manufactured provided by commissioner (Huizhou Winpow Electronic Co., Ltd.). The commissioner provides the composition information of batteries, and promises its integrity and accuracy. Users should read this file carefully, and use the batteries in correct method. Vkan Certification & Testing Co., Ltd. (CVC) doesn't assume responsibility for any damage or loss because of misuse of batteries.

Important

1. The test report is invalid without the official stamp of CVC.
2. Nobody is allowed to photocopy or partly photocopy this test report without written permission of CVC.
3. The test report is invalid without the signatures of Ratifier, Reviewer and Testing engineer.
4. The test report is invalid if altered.
5. Objections to the test report must be submitted to CVC within 15 days.
6. The test report is valid for the tested samples only.
7. This report is only used for internal quality controlling of the client.

Address: No.3,Tiantaiyi Road,Kaitai Avenue,Science City,Guangzhou China

(Tel)：020 32293888

(FAX)：020 32293889

(Post Code)：510663

E—mail： office@cvc.org.cn

http：//www.cvc.org.cn