

MATERIAL SAFETY DATA SHEET

In Accordance with Directive 2001/58/CE

Date: 01/01/2011

1. Chemical Product

MSDS Name: Alkaline Battery

Manufacturer: **SICHUAN CHANGHONG NEWENERGY TECHNOLOGY CO., LTD.**

Address: No.35, East Mianxing Road, High-Tech Park, 621000, Mianyang, Sichuan, China.

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2. Composition /Information on Ingredients:

Chemical Nature: Chemical power source

CAS-No/EINECS NO.: Not applicable.

INCI CTFA-Description: Alkaline Zinc-Manganese Dry Battery

Tariff No.: "W" 85.06

IMPORTANT NOTE: The battery shall not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

Chemical Name	Molecular Formula	CAS No.	Weight (%)
Zinc	Zn	7440-66-6	17~25
Manganese Dioxide	MnO ₂	1313-13-9	35~43
Graphite	C	7782-42-5	3~4
Potassium hydroxide (liquid)	KOH	1310-58-3	9~12.5
Copper	Cu	7440-50-8	1
Iron	Fe	7439-89-6	15~18
Water	H ₂ O	7732-18-5	10~12
Nylon	---	24937-16-4	2~3

* PNOR: Particulates not otherwise regulated

** PNOC: Particulates not otherwise classified

3. Hazards identifications

General: Alkaline battery --- The Common known rules for handing of chemical power source should be obeyed. Do not heat, recharge, disassemble the product or dispose of in fire.

Physical-Chemical Hazards: The chemical materials concluded in the Product is sealed up, thus being stable, safe and eco-friendly under common conditions, may not cause physical-chemical hazards.

Hazards to Human being: Disassemble the product without a professional basis, may cause leakage of the electrolyte and irritation to skin; or cause Hg/ Cd/ Pb (micro trace) poisoning.

Hazards to environment: Dispose the product without separate collection, may lead to pollution caused by Hg/ Cd/ Pb (micro trace), or the electrolyte of alkali solution.

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4. First-aid measures

Inhalation: Not applicable.

Skin Contact: Wash with clear water immediately once leakage happens and the inner liquid splashes onto skin.

Eye contact: Rinse eyes immediately with running water for at least ten minutes. Consult an ophthalmologist.

Ingestion: Rinse mouth with water; Give plenty of water to drink. Obtain medical advice.

5. Fire-fighting measures

Suitable extinguishing media: Carbon dioxide (CO₂), foam, dry chemical powder.

Extinguishing media not to be used: Never use a direct water jet, may pollute the water system.

Exposure hazards from combustion products: In case of fire, carbon monoxide or other toxic organic substances may be generated.

Do not inhale fumes and smoke.

Personal protective equipments: Wear full protective clothing. Use self contained breathing apparatus.

*** Remark: It can be extinguished by car extinguisher as well.**

6. Accidental release measures

Personal precautions: Wear protective clothing. Keep unprotected persons away.

Environmental precautions: Avoid discharge and penetration into sewerage systems, waterways, pits, and cellars.

Methods for cleaning up: Collect spilled material with an insert standard absorbent like sand or silica. Care for well-Ventilated conditions. Recycle or dispose of the materials in an appropriate way.

7. Handling and storage

General: Obey the common known rules and precautions for handling with chemical power sources.

Fire/Explosion protections: Explosion may happen if short-circuit; collect spilled material with an insert standard absorbent like sand or silica.

Storage: Store product in clean, cool and ventilated place with a temperature between 10°C and 30°C (no higher than 40°C in the ordinary course of events) and a relative humidity no higher than 65%; the storage time should not be too long; the batteries should be well-arranged, and do avoid short-circuit caused by the contact of the positive and negative electrodes.

8. Exposure controls/Personal protection

Exposition/ Technical measures: Not applicable.

Protection of hands, eyes and skin: To protect hands, eyes and skin, do not disassemble the product without professional basis.

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9. Physical and chemical properties

Physical state	Solid	Solubility in water	not applicable
Color	not applicable	Vapor pressure	not applicable
Odor	not applicable	Explosion limit	not applicable
pH value	not applicable	Oxidizing properties	not applicable
Specific gravity	not applicable	Flashpoint	not applicable

Refractive index	not applicable	Auto flammability	not applicable
Solubility in ethanol	not applicable	Partition coefficient	not applicable
Melting Point	not applicable	Boiling Point	not applicable
Freezing Point	not applicable		

10. Stability and Reactivity

The chemical materials concluded in the Product are sealed up, thus being stable, safe and eco-friendly under common conditions.

11. Toxicological information

The product is multi component mixture for which no toxicological data exists.

Precautions avoid disassembling the product without a professional basis.

12. Ecological information

In general, no ecological data is available for preparations.

Precautions avoid disposing into drainage systems and into the environment.

13. Disposable considerations

Precautions avoid disposing waste products into environment, sewerage, landfills or by incineration.

Obey the rules and precautions for separate collection and recycling of the waste products.

14. Transport Information

Road	(ADR/RID)	: not regulated
Air	(ICAO/IATA)	: not regulated
Sea	(IMDG)	: not regulated

* Remark: Avoid high-temperature, high-humidity condition.

15. Regulatory Information

Symbol: for transportation, collection, or environment protection (stipulated respectively by each contract).

Contains: transportation marks;

“separate collection” symbol;

“RoHS” symbol (maybe), etc.

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16. Other information

The information on this Material Safety Data Sheet (MSDS) was obtained from current and reputable sources. For any other question, please contact the manufacturer for further information.