

Safety Data Sheet

The content and format of this SDS is accordant with 29 CFR 1910.1200 (OSHA standard)

1. Identification of the substance/preparation and of the company/undertaking

Product details:

Product name: ALKALINE BATTERY

Recommended use of the chemical and restrictions on use: Provide power. Restrictions on use: Do NOT use it in an application which may contaminate food or do harm to human health.

Manufacturer/Supplier: Wuxi noran battery co.,ltd

NO.10 of Middle Yanyu Road,Wuxi, Jiangsu, China

Tel.: +86-510-83381858

Fax: +86-510-83399778

Email: 269938716@qq.com

Further information obtainable from: Wuxi noran battery co.,ltd

Information in case of emergency: +86-510-83381858

2. Hazards identification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

(for contact with leakage from rupture):

Physical hazards: not classified

Health hazards: Acute toxicity (Oral)- 5

Skin corrosion/irritation- 1

Serious eye damage/eye irritation-1

Specific target organ toxicity, Single exposure - 1 (respiratory system)

Environmental hazards: not classified

Signal Word: Danger

Symbol:



Note: This product is generally not hazardous under normal conditions. But like any sealed container, battery may rupture when exposed to excessive heat and this could result in the release of hazardous materials. The information below is given to minimize any possible hazard during handling, storage and disposal.

Hazard Statements *(for contact with leakage from rupture):*

H303: May be harmful if swallowed.

H314: Causes severe skin burns and eye damage.

H318: Causes serious eye damage.

H370: Causes damage to organs (respiratory system).

Precautionary Statements *(for contact with leakage from rupture):*

P260: Do not breathe dust.

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response Precautionary Statements (for contact with leakage from rupture):

P312: Call a POISON CENTER/doctor/physician if you feel unwell.

P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363: Wash contaminated clothing before reuse.

P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P310: Immediately call a POISON CENTER or doctor/physician.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P307 + P311: IF exposed: Call a POISON CENTER or doctor/physician.

Storage precautionary statements :

P405: Store locked up.

Disposal precautionary statements :

P501: Dispose of contents/container according to relevant local and national regulations.

3. Composition/information on ingredients

Product description: substance () ; preparation/mixture (√)

Ingredient (s)	CAS No.	EC No.	% by weight
Manganese dioxide	1313-13-9	215-202-6	40%
Iron	7439-89-6	231-096-4	17%
Zinc	7440-66-6	231-175-3	16%
Water	7732-18-5	231-791-2	10%
Potassium hydroxide	1310-58-3	215-181-3	8%
Copper	7440-50-8	231-159-6	3%
Graphite	7782-42-5	231-955-3	3%
Nylon	9008-75-7	--	2%
Paper	RR-01108-	--	1%

4. First aid measures

As a general rule, in case of doubt of if symptoms persist, always call a doctor: (for contact with leakage from rupture)

In the event of splashes or contact with eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor/physician.

In the event of splashes or contact with skin: Immediately take off contaminated clothes. Wash with soap and water. Wash contaminated clothes before reuse. If irritation occurs, get medical attention.

In the event of exposure by inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a doctor/physician if you feel unwell.

In the event of swallowing: Rinse mouth. Do not induce vomiting without doctor's instruction. Call a doctor/physician if you feel unwell.

Acute effect and delayed effect: Acute effect: May be harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. Causes damage to organs (respiratory system).

Delayed effect: not found.

Personal protective equipment: Wear protective gloves/protective clothing/eye protection/face protection when necessary.

Indication of immediate medical attention and treatment needed, if necessary: Treat according to symptoms and exposure Dose.

5. Fire-fighting measures

Extinguishing Media: Use dry chemical, CO₂ for extinction. Do not use direct water stream. Discharging cylinder shape water from fire hose may lead to spread fire to the surroundings.

Unsuitable Extinguishing Media: Discharging cylinder shape water from fire hose may lead to spread fire to the surroundings.

Special Fire Fighting Procedures: Structural firefighters must wear self-contained breathing apparatus and full protective equipment.

.Unusual Fire and Explosion Hazards: Cell may vent when subjected to excessive heat-exposing battery contents.

.Special Fire-Fighting Method (This is for fire caused by other ignition sources):

Fire-fighters must wear self-contained breathing apparatus and full protective equipment (e.g. fire-retardant clothing).

For initial fire, use dry powder, carbon dioxide, etc.

For large fire, it is effective to use fire foam, etc. to shut off air supply.

Deny unnecessary entry to the place around the fire.

Remove containers from fire area if it can be done without risk.

Cool surrounding facilities, etc. with water spray.

Extinguish fire from upwind, and the fire extinguishing method should be appropriate to the situation in the surroundings.

6. Accidental release measures

Personal precautions: Use proper personal protective equipment as indicated in Section 8.

Measures for Cleaning/Collection:

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. 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 vapors. Remove spilled liquid with absorbent and incinerate.

Environmental Precautions: Keep cleaning run-offs out of municipal sewers and open bodies of water. Comply with local and national laws and regulations.

7. Handling and storage

The regulations relating to storage remises apply to workshop where the product is handled :

Handling: *(for contact with leakage from rupture)*

Do not breathe dust.

Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing/eye protection/face protection.

Storage:

Requirements to be met by storerooms and receptacles:

NOTE: STOW AWAY FROM SOURCES OF HEAT.

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which 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.

Packing material: Plastic.

Information about storage in one common storage facility: The storeroom should be equipped with proper facilities for accidental fire.

Further information about storage condition: None.

8. Exposure controls/personal protection

Control parameters: *(for contact with leakage from rupture)*

Ingredients	OSHA PEL-TWA	ACGIH TLV-TWA
Manganese dioxide (CAS: 1313-13-9)	5 mg/m ³ (Ceiling limit)	0.1mg/m ³
Copper (CAS: 7440-50-8)	1 mg/m ³ (Dusts and mists)	1 mg/m ³ (Dusts and mists)
Graphite (CAS: 7782-42-5)	15 mg/m ³ (Total dust) 5 mg/m ³ (Respirable fraction)	2mg/m ³

Engineering Control *(for contact with leakage from rupture):*

Use this product only in closed systems fully or with local exhaust ventilation.

Install washer eyes and safety showers near to the handling and storage area.

Shows the location of these facilities, with a clear and prominent warning board.

Personal Protective Equipment (for workers):

Protection of Hands:

Not necessary under conditions of normal use.

Recommend wearing protective gloves for industrial hygienic purpose *(for contact with leakage from rupture)*.



Protection of Eyes:

Not necessary under conditions of normal use.

Wear safety glasses when working in a dusty environment or liquid may splash (*for contact with leakage from rupture*).



Respiratory Protection:

Not necessary under conditions of normal use.

Wear appropriate respirators when vapour or fume is generated from processing (*for contact with leakage from rupture*).



Protection of Body:

Recommend wearing general working clothing.



General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Avoid contact with eyes and broken skin.

9. Physical and chemical properties

General Information	
Form	Battery
Colour	No data available
Odour	No data available
pH Value	No data available
Boiling Range	No data available
Melting point/Melting range	No data available
Flash point	No data available
Flammable/Explosive Limits-Lower Vol %	Not applicable
Flammable/Explosive Limits-Upper Vol %	Not applicable
Density	No data available
Relative vapour density	No data available
Vapour pressure	No data available
Solubility	Not applicable
n-octanol/Water Partition Coefficient	No data available
Self-igniting Temperature	No data available

Decomposition Temperature	No data available
Odour Threshold Value	No data available
Evaporation Rate	No data available
Flammability (solid, gas, etc.)	This product is not classified as flammable solid.

10. Stability and reactivity

Chemical stability: Stable under normal temperatures and pressures.

Possibility of hazardous reactions: If leaked, the electrolyte may react violently with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

Conditions to Avoid: Heating, mechanical abuse and electrical abuse.

Incompatible materials: If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

Hazardous decomposition products: It may release hazardous fume (e.g. Carbon monoxide, carbon dioxide, lithium oxide fumes) from thermal decomposition.

11. Toxicological information

Product Toxicity Data (for contact with leakage from rupture):

Ingredients	CAS number	LD 50/ LC50
Manganese dioxide	1313-13-9	Acute toxicity (Oral) LD ₅₀ > 2,197mg/kg (rat) Data source: SIDS (2012) Acute toxicity (Dermal) LD ₅₀ > 2,000mg/kg (rabbit) Data source: SIDS (2012)
Potassium hydroxide	1310-58-3	Acute toxicity (Oral) LD ₅₀ : 284mg/kg (rat) Data source: Priority 1
Copper	7440-50-8	Acute toxicity (Oral) LD ₅₀ > 2,500mg/kg (rat) Data source: ECHA Registered substances Acute toxicity (Dermal) LD ₅₀ > 2,000mg/kg (rabbit) Data source: ECHA Registered substances

Serious eye damage/eye irritation (for contact with leakage from rupture): This product is classified as Category 1.

This product contains potassium hydroxide (CAS: 1310-58-3) (Data source: SIDS (2001)) which is classified as Category 1. Considering the percentage of this ingredient exceeds the classification criteria, the whole product is classified as Category 1.

Skin corrosion/irritation (for contact with leakage from rupture): This product is classified as Category 1.

This product contains potassium hydroxide (CAS: 1310-58-3) (Data source: SIDS (2001)) which is classified as Category 1. Considering the percentage of this ingredient exceeds the classification criteria, the whole product is classified as Category 1.

Respiratory sensitizer: No classification for this product.

Skin sensitizer: No classification for this product.

Germ cell mutagenicity: No classification for this product.

Carcinogenicity: No classification for this product.

Reproductive Toxicity: No classification for this product.

Specific target organ toxicity - Single exposure (for contact with leakage from rupture): This product is classified as Category 1 (respiratory system). This product contains potassium hydroxide (CAS: 1310-58-3) (Data source: (SIDS (2001)),

ACGIH (2001) and PATTY (5th, 2001))) which is classified as Category 1 (respiratory system). Considering the percentage of this ingredient exceeds the classification criteria, the whole product is classified as Category 1 (respiratory system).

Specific target organ toxicity - repeated exposure: No classification for this product.

Effects on or via lactation: No classification for this product.

Aspiration hazard: No classification for this product.

12. Ecological information

Ecotoxicity: As for the whole product, there is no relevant data.

Persistence and Degradability: No data available.

Bioaccumulative Potential: No information available.

Mobility in Soil: No information available.

Results of PBT and vPvB Assessment: No information available.

General Notes:

Do not throw used product into ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

13. Disposal considerations

Minimize the hazard of waste by the methods of neutralization and stabilization.

Any disposal practice must be in compliance with country, local, state, and federal laws and regulations.

After contents are completely removed, dispose of its container at hazardous or special waste collection point.

Paste a label on the container indicating the possible hazards of the waste.

14. Transport Information

DOT/ Air-Transportation- IATA/ICAO/Sea-Transportation-IMO/IMDG:

NOTE: STAY AWAY FROM SOURCES OF HEAT

Proper Shipping Name: Not regulated.

Hazard Class: Not classified.

UN Code: Not regulated.

Packing Group: Not classified.

Packing Group Symbol: Not classified.

Marine Pollutant (Yes/No): No

EMS NO.: Not regulated.

Special precautions for user:

Check whether the package is completed or sealed before transporting; make sure no damage of packages and prevent goods from falling down during transporting; the transport vehicle should be equipped with facilities for fire-fighting and accidental release handling; do NOT transport this product together with incompatible substances; stay away from fire and areas of high temperature during stopovers.

15. Regulatory information

United States:

Section 355 (extremely hazardous substances): Not listed.

SARA 313: This product does not contain SARA 313 Toxic Release Chemicals.

Clean Water Act:

Chemical Name	CWA - Reportable Quantities	CWA - Hazardous Substances	CWA - Priority Pollutants	CWA - Toxic Pollutants
Potassium hydroxide (CAS: 1310-58-3)	1000	Listed	Not available	Not available
Zinc Metal (CAS: 7440-66-6)	Not available	Not available	Listed	Listed
Copper (CAS: 7440-50-8)	Not available	Not available	Listed	Listed

Carcinogenicity categories:

Chemical Name	ACGIH	IARC	NTP	OSHA
Not applicable	Not available	Not available	Not available	Not available

Toxic Substances Control Act (TSCA): The ingredients with specific CAS numbers are listed in the TSCA inventory list.

Other relevant laws and regulations:

Canada Domestic Substances List (DSL): Except nylon (CAS: 9008-75-7) and paper, the other ingredients are listed in the Canada DSL.

Canada Non-domestic Substance List (NDSL): Not listed.

Candidate List of Substances of very high concern (SVHC) according to ECHA: Not listed.

REACH Regulation Annex XVII Regulation List: Not listed.

REACH Regulation Annex XIV Authorization List: Not listed.

Germany – WGK: Not classified.

(EC) 1272/2008 Annex VI Table 3.1:

Ingredient(s)	EC No. 1272/2008 Classification	
	CLASS. CODE	HAZARD CODE
Manganese dioxide (CAS: 1313-13-9)	Acute Tox. 4 *	H332
	Acute Tox. 4 *	H302
Potassium hydroxide (CAS: 1310-58-3)	Acute Tox. 4 *	H302
	Skin Corr. 1A	H314

Chemical Safety Assessment: A Chemical Safety Assessment has not been carried out.

16. Other information

DISCLAIMER: Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

References:

GHS Annex II
GHS SDS Instruction
ANSI Z400.1/Z129.1-2010
OSHA Hazard Communication Standard (HCS) 2012

Full description of some acronyms:

CAS-Chemical Abstracts Service
EINECS-European Inventory of Existing Commercial Chemical Substances
IMO-International Maritime Organization
IMDG-International Maritime Dangerous Goods
IATA-International Air Transport Association
ICAO-International Civil Aviation Organization
TSCA-Toxic Substance Control Act
OSHA-Occupational Safety and Health Administration
ACGIH- American Conference of Governmental Industrial Hygienists

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*****The End*****