

Product: ZeniPower ZINC AIR BATTERIES

Date / released: 1/Jan./2021

Ref #: PSDS/ZABA/V9/2021

1. Identification of the substance/preparation and company

ZeniPower Zinc Air Button Cells: A675P; A675;A13; A312;A10 (1.45V)

Company:**ZhuHai Zhi Li Battery CO., LTD.**

7/F, Block 10, XiangZhou North Ind. Park,ZhuHai, China

Company: contact number:

+86 756 2526620

2. Composition/information on ingredients

Chemical nature:	Wt. %	CAS No.	TWA/TLV
Zinc	30-40	7440-66-6	5.0 mg/m ³ (ZnO as Fume)
Potassium Hydroxide	1-3	1310-58-3	Not Listed (for solution)
Manganese Dioxide	< 0.5	1313-13-9	0.2 mg/m ³ (as Mn, TWA)
Carbon	1-3	1333-86-4	3.5 mg/m ³ Respirable (TWA)
Steel	30-40	7439-89-6	---
SS*-Nickel plating	3-7	7440-02-0	1.0 mg/m ³ (Elemental, TWA)
SS-Copper plating	1-5	7440-50-8	1.0 mg/m ³ (TWA)
Water, paper, plastic, surfactant, Lead	Balance	---	---

*SS:Stainless Steel

3. Hazards identification

Critical hazards to man: If battery leaking, exposure to caustic ingredients may occur.**Critical hazards to the environment:** Not applicable**Other Information:** Keep batteries away from small children.

4. First aid measures

General advice: For consumer use, adequate hazard warnings are included on both the package and on the battery. Potential for exposure should not exist unless the battery leaks, is exposed to high temperatures, is accidentally swallowed or is mechanically, physically, or electrically abused. Contains concentrated (35%) potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 0.01 to 0.2 ml, depending on battery size.**If inhaled:** Not anticipated. Respiratory and eye irritation may occur if fumes are released due to heat or an abundance of leaking batteries. Remove to fresh air. Contact physician if irritation persists.**On skin contact:** Irritation, including caustic burns/injury, may occur following exposure to a leaking battery. Irrigate exposed skin with copious amounts of clear, tepid water for at least 15 minutes. If irritation, injury or pain persists, consult a physician.**On contact with eyes:** Irritation, including caustic burns/injury, may occur following exposure to a leaking battery. If battery is leaking and material contacts eyes, flush with copious amounts of clear, tepid water for 30 minutes. Contact physician at once.

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4. First aid measures (continued)

On ingestion: Consult a physician. Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as 4-6 hours after ingestion. Irritation, including caustic burns to the internal/external mouth areas, may occur following exposure to a leaking battery. An initial x-ray should be obtained promptly to determine battery location. Published reports recommend removal from the esophagus be done endoscopically (under direct visualization). Batteries beyond the esophagus need not be retrieved unless there are signs of injury to the GI tract or a large diameter battery fails to pass the pylorus. If asymptomatic, follow-up x-rays are necessary only to confirm passage of larger batteries. Confirmation by stool inspection is preferable under most circumstances. If mouth area irritation/burning has occurred, rinse the mouth and surrounding area with clear, tepid water for at least 15 minutes. If irritation injury or pain persists, consult a physician.

Notes to Physician: 1) The primary acutely toxic ingredient is concentrated (35%) potassium hydroxide.
2) Anticipated potential leakage of potassium hydroxide is 0.01 - 2.5 ml. depending on battery size.

5. Fire fighting measures

Suitable extinguishing media: As appropriate for adjacent fire.

Special protective equipment: In fires involving large quantities of product, use self-contained breathing apparatus and full protective clothing.

Further information: Hazardous decomposition products may be produced. (Sec. 10).

6. Accidental release measures

Personal precautions: Notify safety personnel of large spills. Caustic potassium hydroxide may be released from leaking or ruptured batteries. Avoid eye or skin contact and inhalation of vapours. Increase ventilation. Clean-up personnel should wear appropriate protective gear.

Environmental precautions: Not applicable

Methods for cleaning up: Not applicable

7. Handling and storage

Handling

Avoid mechanical or electrical abuse. **DO NOT** short or install incorrectly. Batteries may explode, pyrolyze or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. Replace all batteries in equipment at the same time. Do not carry batteries loose in pocket or bag.

Storage

Store at room temperature.

8. Exposure controls/personal protection

8-Hour TWAs: Manganese Dioxide (as Mn) - 5 mg/m³ (U.K.), (Ceiling) (OSHA);

0.2 mg/m³ (ACGIH/Duracell)

Potassium Hydroxide - 2 mg/m³ (Ceiling) (ACGIH); 2 mg/m³ (STEL) (U.K.)

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8. Exposure controls/personal protection (continued)

These levels are not anticipated under normal consumer use conditions.

Personal protective equipment**Respiratory equipment:** None required under normal use conditions.**Hand protection:** None required under normal use conditions. Use neoprene, rubber or latex gloves when handling leaking batteries.**Eye protection:** None required under normal use conditions. Wear safety glasses when handling leaking batteries.**General safety and hygiene measures:** Use only as directed.**9. Physical and chemical properties****Form and Colour:** Button cell batteries. Contents dark in colour.**Odour:** Not applicable**Change in physical state****Melting point/melting range:** Not available**Boiling point/boiling range:** Not available**Flash point:** Not applicable**Explosion limits:** Not available**Ignition temperature:** Not available**Vapour pressure:** Not available**Specific Gravity:** Not available**% Volatiles:** Not available**Solubility in water:** Not applicable**Solubility in other solvents:** Not applicable**pH value:** Not applicable**Octanol/water partition coefficient (log POW):** Not available**Viscosity:** Not available**10. Stability and reactivity****Thermal decomposition:** Batteries may burst and release hazardous decomposition products when exposed to a fire situation.**Substance(s) to avoid:** Strong oxidisers**Hazardous reactions:** Contents incompatible with strong oxidising agents.**Hazardous decomposition products:** Thermal degradation may produce hazardous fumes of zinc and manganese; hydrogen gas; caustic vapours of potassium hydroxide and other toxic by-products.

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11. Toxicological information

Toxicity information is available on the battery ingredients noted in Section 2, but, generally not applicable to intact batteries as used by customers.

Chronic Health Effects: Not applicable to intact batteries.

12. Ecological information

None available regarding product.

13. Disposal considerations

Product: Dispose in accordance with appropriate regulations. If in doubt, contact your national authorities for information. Do not incinerate, since batteries may explode at excessive temperatures.

14. Transport information

UN Number: None

IMO Classification: None

ADR Classification: None

IATA Classification: None

IMDG Classification: None

The product is not classified as dangerous under the current edition of the IATA/IMDG dangerous goods regulations and all applicable carrier and government regulations. They are complying with **Special Provisions A123 under the 62nd edition 2021 of the IATA Dangerous Goods Regulations** and are complying with **Special Provisions 304 under IMDG code** and all applicable carrier and governmental regulations and can be transported as not restricted cargo. A shipping name of ' Batteries Dry - Non-hazardous' may be used on all domestic and international bills of lading.

The product is safe for air / ocean transportation and not regulated by IATA DGR / IMDG"

15. Regulatory information

EC Labeling: None

Risk Phrases: None

Safety Phrases: None

Labeling is not required because batteries are classified as "articles" under the Dangerous Preparations Directive and as such are exempt from the requirements of the Directive.

16. Other information: Revised: according to 2001/58/EC

Prepared by: ZhuHai Zhi Li Battery CO.,LTD

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