



Safety Data Sheet (SDS)

Date Prepared/Revised: 4/21/25 Version no.: 05 Supersedes: (11/2/20)

1. Identification of the Mixture and of the Company

Product identifier: **Zinc/Manganese Dioxide Battery**

Product name:

11450 H.D. CLASSIC ROAD FLARE - SINGLE FLARE, AMBER LEDs
11460 H.D. CLASSIC ROAD FLARE - SINGLE FLARE, RED LEDs
11470 H.D. CLASSIC ROAD FLARE 4-FLARE KIT, AMBER LEDs w/ NYLON CASE
11480 H.D. CLASSIC ROAD FLARE 4-FLARE KIT, RED LEDs w/ NYLON CASE

Relevant identified uses of the substance: Use in portable electronics

Uses advised against: Do not dismantle, open or shred secondary cells or battery.

CAS No:	Not Applicable (mixture)
EC No:	Not Applicable (mixture)
Index No:	Not Applicable (mixture)
Manufacturer/Supplier:	Aervoe LLC
Street address/P.O. Box:	1100 Mark Circle
Country ID/Postcode/Place:	Gardnerville, Nevada 89410
Telephone number:	1-775-782-0100
e-mail:	mailbox@aervoe.com
National contact:	Aervoe LLC
For Product Information:	1-800-227-0196
Emergency telephone number:	1-800-424-9300 (CHEMTREC – 24 hrs)

2. Hazards identification

Classifications

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an SDS per the OSHA hazard communication standard unless ruptured.

Physical Hazards:

Health Hazards: This preparation is not classified as dangerous according to the criteria of directive 99/45/EEC. If the battery is leaking, exposure to caustic ingredients may occur. Therefore, this product may cause sensitization by skin contact.

Environmental Hazards: N/AV

Labeling

Signal Word: Danger

Hazard Statements: N/AV



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Precautionary Statements: P101 - If medical advice is needed, have product container or label at hand
 P102 - Keep out of reach of children
 P103 - Read label before use
 P262 - Do not get in eyes, on skin, or on clothing
 P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F
 P501 - Dispose of contents/container in accordance with local/regional/national/international regulation

Symbols/Pictograms: N/AV

3. Composition / Information on Ingredients

Composition

Chemical	CAS Number	Weight Percent (%)	GHS Classification
Manganese Dioxide	1313-13-9	39-46%	H332 H302
Carbon	7440-44-0	2.95-3.45%	-
Barium Sulfate	7727-43-7	0.88-1%	-
Potassium Hydroxide	1310-58-3	8.93-10.15%	H302 H314
Zinc	7440-66-6	13.88-17.06%	H400 H410
Plastic	-	0.98-1.74%	-
Copper	7440-50-8	0.67-3.06%	-
Iron	7439-89-6	13.77-21.75%	-
Paper	-	0.86-0.88%	-
Water	7732-18-5	5.65-7.75%	-

Other Product Information

Chemical Identity: Alkaline zinc-manganese dioxide batteries

4.) First Aid Measures

General Advice: If symptoms persist, always call a doctor.

Inhalation First Aid: Remove victim to fresh air and provide oxygen if breathing is difficult. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention immediately.

Skin Contact First Aid: If skin irritation occurs, rinse affected area with water and remove contaminated clothing. If irritation occurs, consult a physician.

Eye Contact First Aid: If contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids open. Get medical attention immediately.

Ingestion First Aid: If swallowed, wash out mouth with water provided the person is conscious. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Most Important



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Symptoms/Effects: Exposure may cause slight irritation to the skin, eyes, and respiratory tract. Excessive exposure may cause central nervous system effects.

5. Fire Fighting Measures

Suitable extinguishing media: Carbon dioxide, dry chemical, foam.
Unsuitable extinguishing media: Never use a direct water jet
Special hazards arising from the substance or mixture: None known
Hazardous combustion products: Carbon dioxide, Carbon monoxide, and other toxic organic substances will be generated. Do not inhale fumes or smoke.
Precautions for fire-fighters: Use water spray to cool containers exposed to heat or fire to prevent pressure build up. In the event of a fire, wear full protective clothing and NIOSH- approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

PERSONAL PRECAUTIONARY MEASURES:

- 1) Follow personal protective equipment recommendations found in section 8.
- 2) Maintain adequate ventilation.

SPILL CLEAN-UP PROCEDURES:

- 1.) Evacuate unprotected personnel from the area.
- 2.) Remove sources of ignition if safe to do so.
- 3.) Pickup spilled materials using non-sparking tools and place in an appropriate container for disposal.
- 4.) Contain spill to prevent material from entering sewage or ground water systems.
- 5.) Always dispose of waste materials in accordance with all EU, National and Local Regulations.

7. Handling and Storage

Handling: Obey the common known rules and precautions for handling chemicals. Avoid mechanical and electrical abuse. Do not short battery or install incorrectly. Batteries may explode, pyrolize or vent if disassembled, crushed, recharged, or exposed to high temperatures. Install batteries according to equipment instructions. Do not mix battery systems, such as alkaline and zinc-carbon. Replace all batteries in equipment at the same time. Do not carry loose batteries in pocket or bag. Do not remove battery labels.

Conditions for safe storage, including any incompatibilities:

Store product in a well-filled, appropriately coated and tightly closed containers, avoiding the influence of oxygen, air, light, and humidity. Store at room temperature.

8. Exposure Controls / Personal Protection

Appropriate engineering controls: Ensure adequate ventilation. Take precautionary measures against static discharge.



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Personal Protection:

None required under normal use conditions. When handling leaking batteries, use neoprene, rubber, or nitrile gloves and wear safety glasses.

Skin protection:

No protective equipment is needed under normal use conditions.

Respiratory protection:

Use only in an adequately ventilated area.

9. Information on Basic Physical and Chemical Properties

Appearance: Stainless steel top battery contents are dark grey in color.	Odor: N/AV
Odor Threshold: N/AV	pH: Not available
Melting Point: N/AV	Freezing Point: N/AV
Initial Boiling Point: N/AV	Boiling Point Range: N/AV
Flash Point: No flash point	Evaporation Rate: N/AV
Flammability Solid/Gas: Non-flammable	Upper LEL: N/AV Lower LEL: N/AV
Vapor Pressure: N/AV	Vapor Density: N/AV
Relative Density: N/AV	Solubility: N/AV
Partition Coefficient: n-octanol/ water: N/AV	Auto-ignition Temperature: N/AV
Decomposition Temperature: N/AV	Viscosity: N/AV
Explosive Properties: N/AV	Oxidizing Properties: N/AV

10. Stability & Reactivity

Possibility of hazardous reactions: Batteries may burst and release hazardous decomposition products when exposed to fire.

Chemical stability: Stable under normal conditions

Conditions to avoid: Heat and ignition sources

Incompatible materials: Strong Oxidizing Agents

Hazardous decomposition products: Thermal degradation may produce hazardous fumes of zinc and manganese; hydrogen gas; caustic vapors of potassium hydroxide and other toxic by-products.

11. Toxicological Information

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Repeated overexposure can also damage kidneys, lungs, liver, heart and blood

Routes of exposure: Eyes, skin, ingestion, and/or inhalation

Acute toxicological data: N/AV

Eye irritation data: N/AV

Skin irritation/sensitization/absorption data: N/AV



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Reproductive toxicity data: N/AV

Mutagenicity data: N/AV

Symptoms associated with physical contact: N/AV

Acute/chronic effects from short/long term exposure: Irritating to skin. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis. Not expected to be a skin sensitizer.

Known reportable carcinogens via the following agencies:

NTP: N/AV
IARC: N/AV
OSHA: N/AV

12. Ecological Information

Ecotoxicity: **No Data Available**
Persistence and degradability: **No Data Available**
Bioaccumulative potential: **No Data Available**
Mobility in soil: **No Data Available**
Results of PBT and vPvB assessment: **No Data Available**
Other adverse effects: **No Data Available**

13. Disposal Considerations

Waste Disposal: Dispose of material in accordance with EU, national and local requirements. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or laws governing your location.
Product / Packaging disposal: Dispose of packaging in accordance with federal, state and local requirements, regulations and/or laws governing your location.

14. Transportation Information

US DOT

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
Non Regulated Material	Batteries, dry, sealed	Non Regulated Material	Non Regulated Material	Non Regulated Material	Reference 49 CFR 172.101

IMDG

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions



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Non Regulated Material	Batteries, dry, sealed	Non Regulated Material	Non Regulated Material	Non Regulated Material	Reference IMDG code part 3
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IATA:

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
Non Regulated Material	Batteries, dry, sealed	Non Regulated Material	Non Regulated Material	Non Regulated Material	Reference IATA Dangerous Goods Regulation

15. Regulatory Information

Workplace classification:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200). The Occupational Safety and Health Administration's interpretation of the product's hazard to workers.

SARA Title 3:

Section 311/312 Categorizations (40 CFR 372): This product is a hazardous chemical under 29 CFR 1910.1200, and is categorized as an immediate and delayed health, and flammability physical hazard. Superfund Amendment and Reauthorization Act (SARA) category. SARA requires reporting any spill of any hazardous substance.

TSCA status: All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

WHMIS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the (M)SDS contains all of the information required by the CPR.

16. Other Information

This SDS has been completed in accordance with GHS Rev04 (2011): U.S OSHA, CMA, ANSI, Canadian WHMIS standards, and European Directives.

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To the best of our knowledge, the information contained herein is believed to be accurate. However, the above data does not imply any guarantee or warranty of any kind, expressed or implied. The final determination of the suitability of any material is the sole responsibility of the user. All materials made present un-known hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee these are the only hazards existing.