



Material Safety Data Sheet

Date Prepared/Revised: 8/15/2013 Version no.: 01 Supersedes: (8/15/2013)

1.) Identification of the Mixture and of the Company

Product identifier: **Lithium Ion Polymer Battery**

Product name:

**1163 Super LED Road Flare
1164 Super LED Road Flare
1165 Super LED Road Flare
1166 Super LED Road Flare
1167 Super LED Road Flare
1168 Super LED Road Flare
7451 Deluxe Solar Lantern**

CAS No.:	Not Applicable (mixture)
Manufacturer/Supplier:	Aervoe Industries Incorporated
Street address/P.O. Box:	1100 Mark Circle
Country ID/Postcode/Place:	Gardnerville, Nevada 89410
Telephone number:	001 (0) 1-775-782-0100
e-mail:	mailbox@aervoe.com
National contact:	Aervoe industries Incorporated
For Product Information:	001 (0) 1-800-227-0196
Emergency telephone number:	001 (0) 1-800-424-9300 (CHEMTREC – 24 hrs) English Language Service

2. Hazards identification

This product does not meet the criteria for classification according to Directive 1999/45/EC

Potential health effects: **See Section 11**

Primary routes of entry: **Inhalation, Skin, Eyes, Ingestion**

3. Composition / Information on Ingredients

Material	WT%	CAS	Material	WT%	CAS
Aluminum	5.25	7429-90-5	Copper	11.03	7440-50-8
Separator	2.93	N/AV	Lithium Cobalt Oxide	39.62	12190-79-3
Electrolyte (proprietary)	16.93	21324-40-3 96-49-1 616-38-6 623-53-0	Aluminum packing foil	2.71	N/AV
Carbon	19.36	1333-86-4	Nickel	2.17	7440-02-0

4.) First Aid Measures

Inhalation First Aid:

During normal use inhalation is an unlikely route of exposure due to containment of hazardous materials within the battery case. However, should the batteries be exposed to extreme heat or pressures causing a



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Skin Contact First Aid: breach in the battery cell case, exposure to the constituents may occur. Inhalation of cobalt dusts may result in pulmonary conditions. Exposure to the electrolyte contained inside the battery may result in chemical burns. Exposure to Lithium may cause dermatitis in some sensitive individuals.

Eye Contact First Aid: Exposure to the electrolyte contained inside the battery may result in severe irritation and chemical burns.

Ingestion First Aid: If the battery case is breached in the digestive tract, the electrolyte may cause localized burns.

5. Fire Fighting Measures

Flash Point: >150°C
Auto Ignition Temperature: Not Available
Flammable Limits in Air:
% by Volume: LEL: N/AV UEL: N/AV
Suitable extinguishing media: Carbon dioxide, dry chemical, water spray.
Unsuitable extinguishing media: None known
Special hazards arising from the substance or mixture: None known
Hazardous combustion products: Carbon dioxide, Carbon monoxide
Fire & Explosion Hazards: Closed Containers may rupture due to the buildup of pressure from extreme temperatures.

Advice 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

Do not use near sources of ignition.
Store out of direct sunlight.



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Storage Temperature: 40° to 120°F (4° to 49°C)

Do not to eat, drink and smoke while working with this material.

Wash hands after use.

8. Exposure Controls / Personal Protection

Appropriate engineering controls:

Ensure adequate ventilation. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits.

Keep away from sources of ignition.

Take precautionary measures against static discharge.

Personal Protection:

Eye & face protection devices such as safety glasses, safety goggles or face shield are recommended.

Skin protection

Wear the appropriate protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection:

Use only in an adequately ventilated area. For unknown vapor concentrations use a positive-pressure, pressure-demand, self-contained breathing apparatus (SCBA).

9. Information on Basic Physical and Chemical Properties

Appearance: Solid	Odor: Odorless
Odor Threshold: N/AV	pH: N/AV
Melting Point: N/AV	Freezing Point: N/AV
Initial Boiling Point: N/AV	Boiling Point Range: N/AV
Flash Point: >150°C	Evaporation Rate: N/AV
Flammability Solid/Gas: N/AV	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: Hazardous polymerization will not occur under normal conditions

Conditions to avoid: Heat and ignition sources

Incompatible materials: Strong Oxidizing Agents

Hazardous decomposition products: Will not occur



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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

12. Ecological Information

Toxicity: **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
UN3091	Lithium batteries, contained in equipment	9	II	Not applicable

IMDG

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant
UN3481	Lithium batteries, contained in equipment	9	II	Not applicable

IATA:

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant
UN3481	Lithium batteries contained in equipment	9	II	Not applicable



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Special Provisions

DOT = Reference 49 CFR172.102,188,A104

IMDG = Reference Code 3.3 188, 230

IATA = Packing instructions 967, Code 4.4, A154, A164

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.

PROP 65 (CA): Warning: This product may contain chemicals know to the state of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

National Fire Protection Association (NFPA) ratings

Health = 0 Flammability = 0 Reactivity = 0

This SDS has been completed in accordance with Regulation (EC) No. 1907/2006

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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.