Safety Data Sheet (SDS)

Date Prepared/Revised: 1/26/21 Version no.: 04 Supersedes: (12/18/20)

1.) Identification of the Mixture and of the Company

Product identifier**: Lithium Ion Polymer Battery**
Product name:

Baton Traffic Flares	**Super Road Flares**	**Universal Road Flares**
1154 Single Flare, AMBER LEDs	1164 Single Flare, AMBER LEDs	11600 2-Flare Kit, AMBER LEDs
1155 Single Flare, RED LEDs	1165 Single Flare, RED LEDs	11610 2-Flare Kit, RED LEDs
1156 Single Flare, RED & BLUE LEDs	1167 4-Flare Kit, AMBER LEDs	11620 4-Flare Kit, AMBER LEDs
1157 3-Flare Kit, AMBER LEDs	1168 4-Flare Kit, RED LEDs	11630 4-Flare Kit, RED LEDs
1158 3-Flare Kit, RED LEDs		11640 Single Flare, AMBER LEDs
		11650 Single Flare, RED LEDs

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 Industries Incorporated**
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 Industries Incorporated**
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:	N/AV
Health Hazards:	STOT cat. 1
	Carc. cat. 2
	Skin corrosion/irritation 1B
	Serious eye damage/irritation 1
	Skin sensitization cat. 1
Environmental Hazards:	N/AV

Labeling

Date Prepared/Revised: 1/26/21 Version no.: 04 Supersedes: (12/18/20)

Signal Word: Danger

Hazard Statements:
H314 – Causes severe skin burns and eye damage.
H317 – May cause an allergic skin reaction.
H351 – Suspected of causing cancer.
H373 – May cause damage to organs through prolonged or repeated exposure

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 50ºC/122ºF
P501 - Dispose of contents/container in accordance with local/regional/national/international regulation

Symbols/Pictograms:

3. Composition / Information on Ingredients

Composition

Chemical	CAS Number	Weight Percent	Trade secret
Proprietary	Proprietary	10-30	*
Proprietary	Proprietary	10-30	*
Proprietary	Proprietary	10-30	*
Copper	7440-50-8	10-30	*
Proprietary	Proprietary	7-13	*
Proprietary	Proprietary	1-5	*
Nickel	7440-02-0	1-5	*
Proprietary	Proprietary	1-5	*

Other Product Information

Chemical Identity: Mixture

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: Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye Contact First Aid: Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.

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 Symptoms/Effects: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically

5. Fire Fighting Measures

Flammable Properties: Combustible solid
Auto Ignition Temperature: Not Available
Suitable extinguishing media: Carbon dioxide, dry chemical.
Unsuitable extinguishing media: Water spray may be inefficient
Special hazards arising from the substance or mixture: The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Product is or contains a sensitizer. May cause sensitization by skin contact.
Hazardous combustion products: Carbon dioxide, Carbon monoxide
Fire & Explosion Hazards: N/AV.
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: Avoid shorting the battery. Do not immerse in water. Do not disassemble or deform the battery. Do not expose to,or dispose of the battery in fire. Avoid excessive physical shock or vibration. Keep out of thereach of children. Battery must be charged in an approved charger. Never use a modified or damaged charger.Use for specified product applications only. Store in a cool, dry and well-ventilated area. Never use a battery that has suffered abuse.
Conditions for safe storage, including any incompatibilities: Store battery in a cool (25°C+/-5°C), Dry (<85% Humidity) well ventilated area. Keep battery in packaging material to prevent exposure to elements and conductive material. Do not store battery near heat, high humidity, open flame, sunlight, water, seawater, strong acids, strong oxidizers, strong reducing agents, strong alkalis or metal wire.

8. Exposure Controls / Personal Protection

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

Personal Protection:
Use person protective equipment as required.

Skin protection
No protective equipment is needed under normal use conditions.

Respiratory protection:
Use only in an adequately ventilated area.

Hazardous Ingredient	CAS Number	ACGIH TLV (TWA)	OSHA PEL (TWA)
Supplier Trade Secret	Supplier Trade Secret	TWA:0.02 mg/M3	TWA: 15 mg/m3 total dust synthetic TWA: 5 mg/m3 total dust synthetic (vacated) TWA: 2.5 mg/m3 respirable dust natural (vacated) TWA: 10 mg/m3 total dust synthetic (vacated) TWA: 5 mg/m3 respirable fraction synthetic TWA: 15 mppcf natural
Supplier Trade Secret	Supplier Trade Secret	TWA: 2.5 mg/m3 F	TWA: 2.5 mg/m3 F (vacated) TWA: 2.5 mg/m3
Copper	7440-50-8	TWA: 0.2 mg/m$_3$ fume	TWA: 0.1 mg/m$_3$ fume TWA: 1 mg/m$_3$ dust and mist (vacated) TWA: 0.1 mg/m$_3$ Cu dust, fume, mist
Supplier Trade Secret	Supplier Trade Secret	TWA: 1 mg/m$_3$ respirable Fraction	WA: 15 mg/m$_3$ total dust TWA: 5 mg/m$_3$ respirable fraction (vacated) TWA: 15 mg/m$_3$ total dust (vacated) TWA: 5 mg/m$_3$ respirable fraction
Nickel	7440-02-0	TWA: 1.5 mg/m3	TWA: 1 mg/m3 (vacated) TWA: 1 mg/m$_3$

***Values are based on the 2014 Guide to Occupational Exposure Values by ACGIH**

9. Information on Basic Physical and Chemical Properties

Appearance: Metallic	Odor: N/AV
Odor Threshold: N/AV	pH: Not Applicable (solvent Base)
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: Hazardous polymerization will not occur under normal conditions
Chemical stability: Stable under normal conditions
Conditions to avoid: Heat and ignition sources
Incompatible materials: Strong Oxidizing Agents
Hazardous decomposition products: Will not occur

11. Toxicological Information

Information on Toxicological Effects:

The battery: no toxicological effects under normal use. Within recommended conditions the electrode materials and liquid electrolytes do not react when the battery remains sealed. Exposure to these hazardous components is only possible if the battery leaks or vents. The following toxicology data is in respect to a person coming into contact with exposed electrolyte of the battery.

Acute Toxicity:

Swallowed- The electrolyte contained within the battery is a corrosive material. Ingestion of this electrolyte would be harmful. Swallowing may result in nausea, vomiting, diarrhea, abdominal pain and chemical burns in the gastrointestinal tract. During normal usage ingestion of a battery is physically impossible.

Skin Corrosion or Irritation:

The electrolyte contained within the battery is a corrosive liquid. If this corrosive liquid make contact to your skin they could cause irritation or even severe chemical burns. A battery presents no danger to a person’s hand or skin.

Serious Eye Damage or Irritation:

The electrolyte contained within the battery is a corrosive liquid. If this electrolytes makes contact with the eye it could cause irritation or even irreversible damage to the eye. A battery presents no danger to eyes.

Respiratory or Skin Sensitization:

It presented no evidence that the electrolyte contained within the battery cause no respiratory or skin sensitizers.

Chemical Name	ACGIH	IARC	NTP	OSHA
Supplier Trade Secret	A3	Group 2B		X
Supplier Trade Secret		Group 3	Reasonably Anticipated	X
Nickel		Group 1 Group 2B		
Supplier Trade Secret		Group 3		

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

NTP (National Toxicology Program)

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

X - Present

Target Organ Effects Skin Eyes Respiratory system

12. Ecological Information

Ecotoxicity

Harmful to aquatic organisms. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Copper	EC50: 0.031 - 0.054 mg/L (96 h static) Pseudokirchneriella subcapitata		EC50: 0.0426 - 0.0535 mg/L (72 h static) Pseudokirchneriella subcapitata LC50: 1.25 mg/L (96 h static) Lepomis macrochirus LC50: 0.112 mg/L (96 h flow-through) Poecilia reticulata LC50: 0.8 mg/L (96 h static) Cyprinus carpio LC50: 0.3 mg/L (96 h semi-static) Cyprinus carpio LC50: 0.052 mg/L (96 h flow-through) Oncorhynchus	EC50: 0.03 mg/L (48 h Static) Daphnia magna

			mykiss LC50: 0.0068 - 0.0156 mg/L (96 h) Pimephales promelas LC50: 0.2 mg/L (96 h flow-through) Pimephales promelas LC50: < 0.3 mg/L (96 h static) Pimephales promelas	
Nickel	EC50: 0.174 - 0.311 mg/L (96 h static) Pseudokirchneriella subcapitata		EC50: 0.18 mg/L (72 h) Pseudokirchneriella subcapitata LC50: 10.4 mg/L (96 h static) Cyprinus carpio LC50: 1.3 mg/L (96 h semi-static) Cyprinus carpio LC50: > 100 mg/L (96 h) Brachydanio rerio	EC50: 1 mg/L (48 h Static) Daphnia magna EC50: > 100 mg/L (48 h) Daphnia magna

.

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
UN3481	Lithium batteries, contained in equipment	9	No packing group	Not applicable	Reference 49 CFR 172.101

IMDG

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN3481	Lithium batteries, contained in equipment	9	No packing group	Not Applicable	Reference IMDG code part 3

IATA:

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN3481	Lithium ion batteries contained in equipment	9	No packing group	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.
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

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

Date of Preparation/Revision: 12/18/20
Supersedes: (5/17/18)

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.