Safety Data Sheets (SDSs)

Section 1 - Identification

Product Name: For Lithium Phosphate Battery (LiFePO4) passed UN38.3 tests and ≤20Wh/cell or ≤100Wh/battery

Manufacturer / Distributor Name: AA Portable Power Corp

Address: 825 S 19th Street, Richmond, CA 94804, **Tel:** 510-525-2328 **Fax:** 510-439-2808

Email: sales@batteryspace.com

Emergency Tel (Within USA and Canada): Here should be your company's emergency telephone number.

Emergency Tel (Outside USA and Canada) for Shipment to USA: Here should be your company's emergency telephone number.

Recommended Use: General use

Restrictions on Use: N/A

Section 2 – Hazard(s) Identification

Routes of Entry: Inhalation, Skin, Ingestion.

Health Hazards (Acute and Chronic)

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. The most likely risk is acute exposure when a battery vents.

Sign/Symptoms of Exposure

A shorted lithium battery can cause thermal and chemical burns upon contact with the skin. May be a reproductive hazard.

Medical Conditions Generally Aggravated by Exposure

An acute exposure will not generally aggravate any medical condition.

Required Label Elements: N/A

Section 3 – Composition/Information on Ingredients

Ingredient	Content (percent of total weight)	CAS Index No.	EINECS
Lithium Iron Phosphate ($LiFePO_4$)	**50**%	15365-14-7	N/A
Carbon(Graphite)	10%	7782-42-5	231-955-3
PP	5	9003-07-0	N/A
PVDF	2	24937-79-9	N/A
PE	5	9002-88-4	N/A
CMC	0.5	9004-32-4	N/A
LiPF6	5	21324-40-3	244-334-7
EC	5	96-49-1	202-510-0
DMC	5	616-38-6	210-478-4
Ni	2.5	7440-02-0	231-111-4
Cu	5	7440-50-8	231-159-6
Al	5	7429-90-5	231-072-3

Trade Secret Claims: N/A

Section 4 – First-aid Measures

Eye: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. Use oxygen if available.

Ingestion: Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.

Section 5 – Fire-fighting Measures

Flash Point: N/A.

Auto-Ignition Temperature: N/A.

Extinguishing Media: Use only Lith-X (Class D extinguishing media) on fire involving lithium batteries or raw lithium metal. Do not use for this purpose water, sand, CO2, Halon, dry powder or soda ash extinguishers.

Special Fire-Fighting Procedures: Self-contained breathing apparatus.

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

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, lithium oxide fumes

Firefighting: In case of fire in an adjacent area, use Lith-X (Class D extinguishing media). Do not use water.

Special protective equipment for firefighters:

- Respiratory protection: Respiratory equipment of a gas cylinder style or protection-against-dust mask
- Hand protection: Protective gloves
- Eye protection: Goggle or protective glasses designed to protect against liquid splashes
- Skin and body protection: Protective cloth

Section 6 - Accidental Release Measures

Steps to be taken in case Material is Released or Spilled

If the battery is accidentally broken and organic electrolyte leaks out, 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 batteries 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.

Waste Disposal Method

It is recommended to discharge the battery to the end, handing in the abandoned batteries to related department unified, dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental protection agency and/or federal EPA.

Section 7 - Handling and Storage

The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

Precautions to be taken in handling and storing

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.

Other Precautions

Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

Section 8 - Exposure Controls / Personal Protection

Respiratory Protection: In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting batteries. Respiratory Protection is not necessary under conditions of normal use.

Ventilation: Not necessary under conditions of normal use.

Protective Gloves: Not necessary under conditions of normal use.

Other Protective Clothing or Equipment: Not necessary under conditions of normal use.

Personal Protection is recommended for venting batteries: Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

OSHA's Permissible Exposure Limits (PELs): N/A

Threshold Limit Values (TLVs): N/A

Section 9 - Physical and Chemical Properties

Appearance Characters:

Physical state: Solid,

Form: Cylindrical or Prismatic or Pouch,

Color: Depends on the PVC wrapper, can be green/white/black/yellow

Odor: Odorless

Section 10 - Stability and Reactivity

Stability: Stable under normal use

Conditions to Avoid: External short-circuit, crushes, deformation, high temperature, mechanical abuse and electrical abuse, direct sunlight and high humidity.

Hazardous Decomposition Products: N/A.

Hazardous Polymerization: N/A.

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons.

Section 11 - Toxicological Information

Inhalation, skin contact and eye contact are possible when the battery is opened. Exposure to internal contents, the corrosive fumes will be very irritating to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

Numerical Measures of Toxicity: No toxicity.

Section 12 - Ecological Information

When promptly used or disposed the battery does not present environmental hazard. When disposed, keep away from water, rain and snow.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

If batteries are still fully charged or only partially discharged, they can be considered a reactive hazardous waste because of significant amount of unreacted or unconsumed lithium remaining in the spent battery. The batteries must be neutralized through an approved secondary treatment facility prior to disposal as a hazardous waste. Recycling of battery can be done in authorized facility, through licensed waste carrier.

Section 14 - Transport Information

UN Number: 3480 (3481 when the battery is contained in equipment or packed with equipment)

Proper shipping name: Lithium ion batteries (“lithium ion batteries contained in equipment” or “lithium ion batteries packed with Equipment”)

Ground Transportation:

√	≤20Wh/cell or ≤100Wh/battery	non-regulated
	20Wh<cell≤60Wh or 100Wh<battery≤300Wh	non-regulated, label: “LITHIUM BATTERIES—FORBIDDEN FOR

		TRANSPORT ABOARD AIRCRAFT AND VESSEL."
	>60Wh/cell or > 300Wh/battery	Regulated as Class 9
	Non UN38.3 Tested	**Ship per 49 CFR 173.185(e)**

Air Transportation: **ICAO/IATA-DGR , only UN38.3 tested batteries can be ship by Air. Regulated as Class 9, Cargo Only**

√	UN38.3 Tested Cell and battery	Regulated as Class 9, Cargo Only
	Non UN38.3 Tested	**Can not ship by Air**

Standalone	Lithium Ion Standalone (P.I. 965) UN 3480
Packed With	Lithium Ion Packed With (P.I. 966) UN 3481
Contained in	Lithium Ion Contained in (P.I. 967) UN 3481

Ocean Transportation: IMO-IMDG, only UN38.3 tested batteries can be ship by Ocean. Regulated as Class 9

Separate Li-ion batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport. In the case of transportation, confirm no leakage and no overspill from a container. Take in a cargo of them without falling, dropping and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that result in a mark of hitting on a cell. Please refer to Section 7-HANDLING AND STORAGE also.

Section 15 - Regulatory Information

Law Information

《Dangerous Goods Regulation》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《Classification and code of dangerous goods》

《Occupational Safety and Health Act》(OSHA)

《California Proposition 65》

《Resource Conservation and Recovery Ac》(RCRA)

《Toxic Substances Control Act》(TSCA)

《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》SARA

《Code of Federal Regulations》(49CFR 173.185)

《International Maritime Dangerous Goods》

IATA Lithium Battery Guidance

In accordance with all Federal, State and Local laws.

Section 16 - Other Information

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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