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## Safety Data Sheets (SDSs)

### Section 1 - Identification

**Product Name:** LithiumIon/Lithium PolymerRechargeable Battery (LiCoO2)

**Manufacturer / Distributor Name:**AA Portable Power Corp

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

**Email:** [sales@batteryspace.com](mailto:sales@batteryspace.com)

**Emergency Tel (Within USA and Canada):** CHEMTREC 1-800-424-9300

**Emergency Tel (Outside USA and Canada) for Shipment to USA:** CHEMTREC +1  
703-527-3887

**Recommended Use:**General use

**Restrictions on Use:**N/A

### Section 2 – Hazard(s) Identification

Intactbatteries presentno specific hazards.If batteries showsigns ofleaking, AVOID skin or eye contact with the material leaking fromthebattery.If battery is burning, putout the fire byusing right extinguisher.

#### **PotentialHealthHazards:**

**Eye:** No particularhazards for properuse.Itwill cause severe irritation or chemical burnwhen batteries are broken.

**Skin:** No particularhazards for properuse.Itwill cause skin severe irritation by inhalationof EC andRoutes ofEntry: DMCor chemical burn when batteries are broken.

**Inhalation:** It will irritate breathsystemby beingexposedto fumes when batteries are broken.

**Ingestion:** It is deleterious by swallowing battery. Broken batteries will cause severe chemical burntomouth,esophagusandgastroentericsystem

**Environmenthazards:** It will causedifferentharms tomanandenvironment.

**Burning and exploding hazards:** Whenthebattery is short-circuited,over chargedor over heated, it may cause electrolyte of thebattery leaked outor the battery exploding.

**Required Label Elements:**N/A

### Section 3 – Composition/Information on Ingredients

Ingredient	Content (percent of total weight)	CAS Index No.	EINECS
LithiumCobalt Oxide(LiCoO2)	50%	12190-79-3	235-362-0
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

### Hazard properties:

The battery may be over-heated by outside and interior short-circuit, and burning batteries may emit toxic fumes.

### Hazardous Combustion products:

Metallic oxide, Carbon oxide(CO), Carbon dioxide(CO<sub>2</sub>), etc.

### Extinguishing Media:

Species D fire extinguishers of chemical dry powder, yellow sands. Do not use water.

### Firemen safeguard:

Firemen should wear fire-fighting suits with a self-contained breathing apparatus

## 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, to use up the metal lithium inside the battery, and to bury the discharged battery in soil.

## Section 7 - Handling and Storage

### Handling:

- Do not vibrate the battery excessively.
- Avoid short-circuiting the battery. Though short-circuit for little time will not influence badly the battery, short-circuit for long time will lose the battery's energy and bring plenty of heat which will burn skin and cause fire or explosion indeed.
- The equipment of metal which are used for battery pack such as coin, metal accouterments,

metal worktable, metal strip, etc. are source of short-circuit.

- It should be provided with effective measures to prevent short-circuit during transportation and storage.
- Do not disassemble and damage the battery.
- The battery should be transported with 10-50% charged states.
- Do not contact the battery with water.
- Do not store the battery in the place with point-blank sunshine.
- The battery should be 40-60% charged for long time storage.
- The battery should be stored in the place where is cool, dry and lee.

#### **Storage:**

- High temperature may cause the battery capability loss, leakage and rustiness.
- Do not expose the battery to fire.
- Store the battery away from moisture.

### **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

Please refer most updated information by searching the product part# at [www.batteryspace.com](http://www.batteryspace.com)

## Section 10 - Stability and Reactivity

**Stability:** Stable

**Conditions to Avoid:** Short-circuit, collision,refit,hightemperature (over100°C),point-blank sunshineand high humidity environment.

**Hazardous Decomposition Products:** Toxicgas brought when burning.

**Hazardous Polymerization:** N/A.

**Incompatibility (Materialsto avoid):** Electric materials, water, seawater, oxidant, acid.

## 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

### **Ecologicaltoxicity:**

The chemicals of thebatterywill causeharmtothe environments if it is discarded tothe surroundings.

**Biodegradability:** No information available.

**Non-biodegradability:** No information available.

### Section 13 - Disposal Considerations

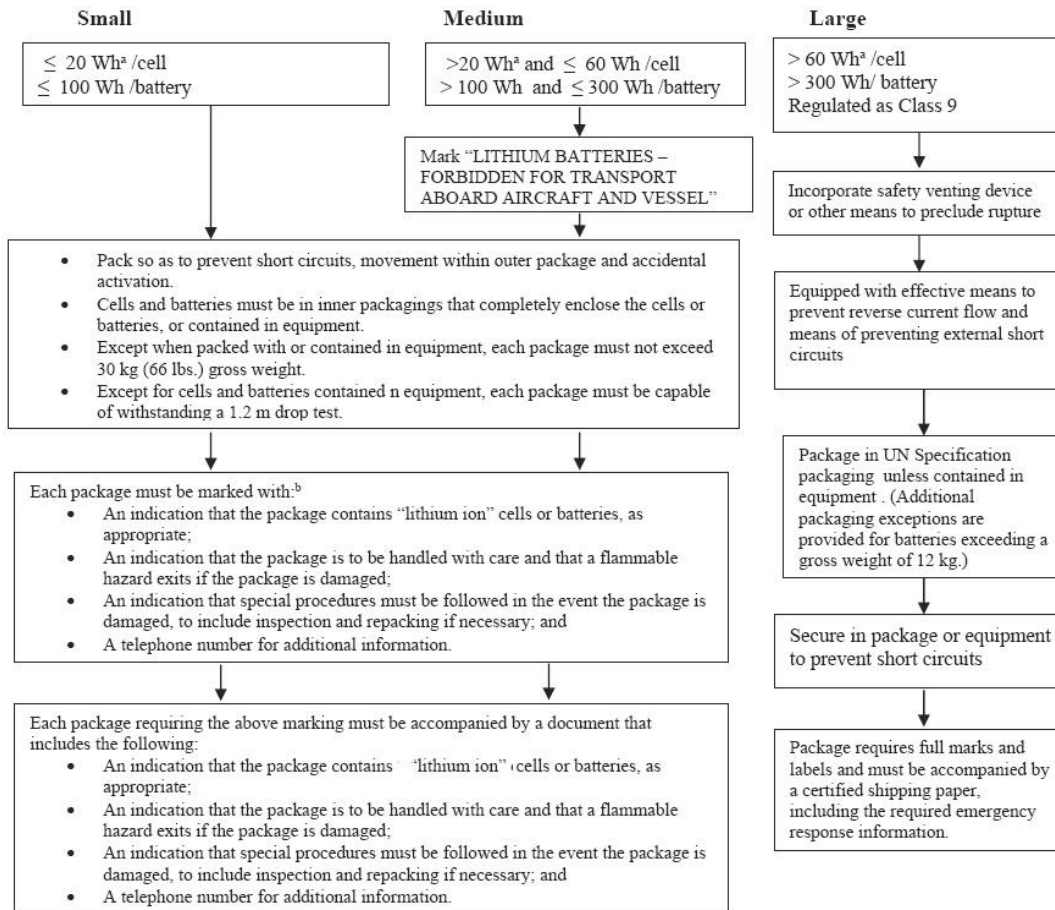
#### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

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

**All cells and batteries (regardless small/medium/large batteries) must be proven to meet the requirement of each test in the UN Manual of Tests and Criteria.**

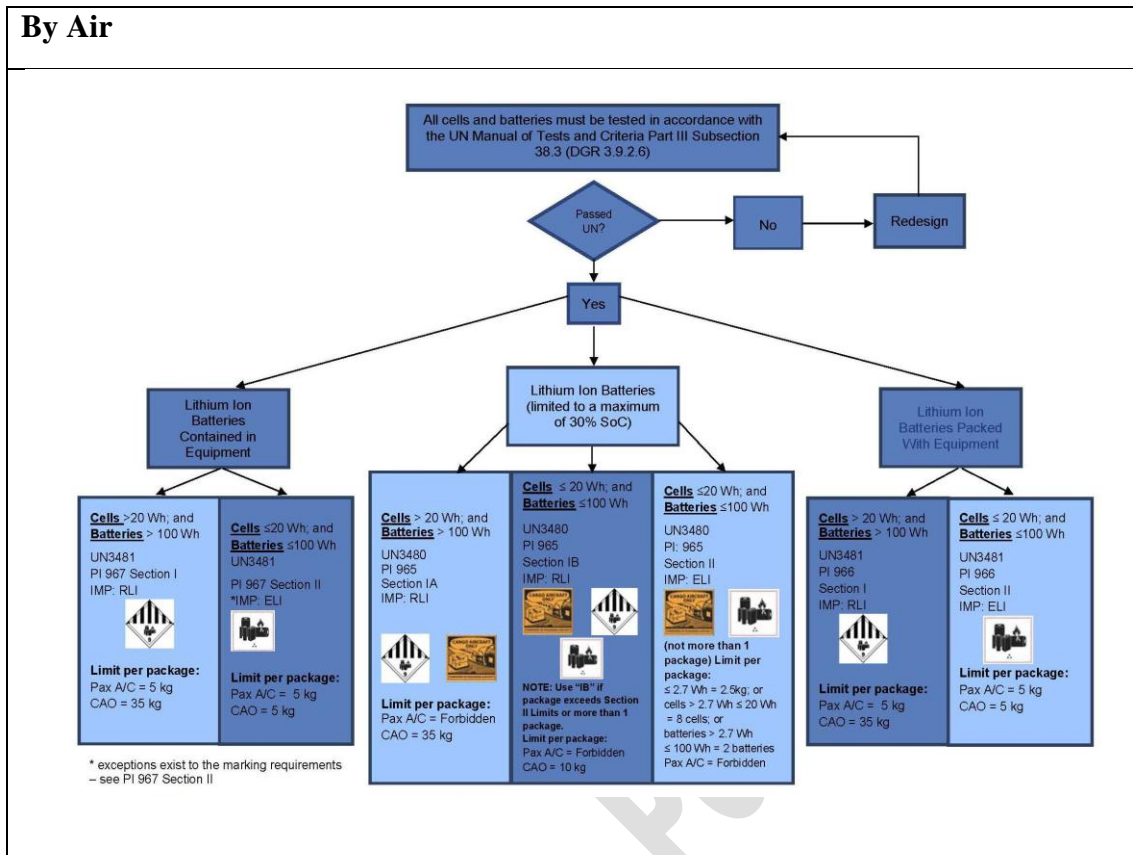
## By Ground



a. Wh = Watt-hours rating

b. Does not apply to a package containing button cells installed in equipment or no more than four cells or two batteries installed in equipment

## By Air



### April 1st, 2016 – ICAO/IATA Air Regulations – Overpacking Li Ion and Lithium Metal Cells/Batteries

New ICAO/IATA regulations will prohibit the “Overpacking” of Section II cells and batteries under Packing Instructions 965 (Lithium Ion) and 968 (Lithium Metal). After April 1, 2016 air shipments under Section II of the regulations will be limited to one 2.5 kg package. Multiple 2.5 kg packages will not be allowed unless they ship as Class 9.

This change will have the largest impact on servicing direct customer base. While shipping lithium product by air will still be possible via Class 9 shipping, it will become more complicated and expensive. We highly recommend ordering within lead time so boat shipments can be used or maintaining inventory of the product.

### April 1st, 2016 – ICAO/IATA Air Regulations – Li Ion State of Charge

New ICAO/IATA regulations will limit the State of Charge (SOC) to 30% for all lithium ion cells and batteries on both Passenger and Cargo aircraft. Please refer to Packing Instructions 965, Section 1A, 1B and Section II. This will impact just the shipment of cells and batteries by air, not the shipment of cells and batteries “packed with” or “contained in” equipment





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»

«International Maritime Dangerous Goods»

«Classification and code of dangerous goods»

IATA 2016 DGR 57<sup>th</sup> edition

49CFR 173.185

OSHA Hazard Communication Standard Status

Toxic Substances Control Act (TSCA) Status

SARA Title III

RCRA

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.

SDS Creation Date: September 23, 2015

SDS Revision Date: January 12, 2017