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# Material Safety Data Sheet

Advance Energy, Inc.

**Report No.** : AE-MSDS-FB1108(REV A)

**Models** : Lithium-ion Polymer Batteries (Rechargeable)

**Manufacture** : Advance Energy

**Address** : 4720 W. University Ave Las Vegas, NV 89178

**Date of Issue** : January 15, 2018

## Section 1- Chemical Product & Company Identification

Product name	Lithium-ion Polymer Batteries (Rechargeable)
Manufacture	Advance Energy, Inc
Address	4720 W. University Ave, Las Vegas, NV 89103
Emergency Telephone No.	702-228-8883
Telephone No. for Information	702-228-8883
Fax	702-228-8885
E-mail	sales@thunderpowerrc.com

## Section 2-Hazards Identification

### 2.1 Classification of the substance or mixture

None needed according to classification criteria

### 2.2 Label Elements

-Signal Word

None needed according to classification criteria

-Pictograms

None needed according to classification criteria

-Hazard statement(s)

None needed according to classification criteria

-Pictograms

None needed according to classification criteria

-Precautionary statement(s)

None needed according to classification criteria

### 2.3 Others Hazards

#### Health Hazards

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is Mechanically or electrically abused. Contact of electrolyte and extruded lithium with skin and eyes should be avoided.

#### Sign/ Symptoms of Exposure

A shorted lithium battery can cause thermal and chemical burns upon contact with the skin.

### 2.4 Unknown Acute Toxicity

None needed according to classification criteria

## Section 3- Composition/ Information on ingredients

Chemical composition	Molecular Formula	CAS No.	Weight(%)
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Graphite		7785-42-5	24%
Lithium Cobalt Oxide		12190-79-3	36%
Aluminum Foil		7429-90-5	3%
PVDF(Polyvinylidene Fluoride		24937-79-9	2%
Copper Foil		7440-50-8	6%
Electrolyte	DMC	616-38-6	3%
	PC	108-32-7	1%
	EC	96-49-1	3%
	EMC	623-53-0	3%
	LiPF6	21324-40-3	7%
Separator	PE	9002-88-4	3%
Conductive Carbon		7440-44-0	3%
Aluminum Packing Foil	Nylon	32131-17-2	0.50%
	Al	7429-90-5	2%
	PP	9003-07-0	0.50%
Al Tab	7429-90-5	7429-90-5	0.90%
	9003-07-0	25038-54-4	0.10%
Ni Tab	Ni	7440-02-0	1.90%
	PP	9003-07-0	0.10%

## Section 4- First Aid Measures

### Skin and Eyes:

In the event that battery ruptures, flush with copious quantities of flowing lukewarm water for a minimum of 15 minutes. Get immediate medical attention for eyes. Wash skin with soap and water.

### Inhalation:

If vapors or fumes from vented or leaking battery are irritating to respiratory tract, move to fresh air. Seek medical attention immediately.

### Ingestion:

Ingestion of a battery can be harmful. Call the National Capital Poison Control Center or your local Poison Control Center, day or night-for advice and follow-up.

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## **Section 5- Fire- Fighting Measures**

Flash Point: N/A

Extinguishing Media: Dry chemical ,CO2.

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, other irritating or toxic gases.

## **Section 6- Accidental Release Measures**

Procedures to contain and clean up leaks or spills:

In the event of a battery rupture, prevent skin contact and collect all released material in plastic lined metal container.

Reporting procedure:

Report all spills in accordance with Federal, State and Local reporting requirements.

Waste disposal method:

Earth or sand should be used to absorb the exudation, seal leaking battery and earth in a heavy duty polythene bag and dispose of as special waste in accordance with local regulations.

## **Section 7-Handling and Storage**

Handling precautions:

Do not short circuit or expose to temperatures above the temperature rating of the battery.

Do not recharge, over-discharge, force discharge, immerse, puncture or crush.

Storage:

Store in a cool place but prevent condensation on cells and batteries. Elevated temperatures can result in shortened battery life and degrade performance. Do not store batteries in high humidity environments for long periods of times.

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

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## **Section 8- Exposure Controls/Personal Protection**

### Respiratory protection:

Wear a niosh approved self contained breathing apparatus in the pressure demand mode, or a fullface supplied air respirator.

### Ventilation:

Mechanical ventilation and /or local exhaust, sufficient in pattern and volume , to meet tlv requirements

### Protective gloves:

Use polyethylene or nitrile gloves if frequent skin contact is likely.

### Eye protection:

Safety glasses with splash guards or side shielding recommended.

Other protective clothing if bodily exposure is anticipated.

### Work/Hygienic practices:

Do not wear contact lenses. Wash contaminated clothing before reuse. Wear protective safety equipment as necessary to minimize contact. Wash hands with soap and water.

## **Section 9- Physical and Chemical Properties**

Appearance characters: Silvery, Rectangle, with odorless solid battery.

## **Section 10- Reactivity and Stability Data**

### Reactivity

None during normal operating or handling conditions.

### Hazardous decomposition

None during normal operating conditions. If cells are leaked, hydrogen fluoride, carbon monoxide and carbon dioxide may be released.

### Incompatibilities

None during normal operation. Avoid exposure to heat, open flame and corrosives

### Conditions to avoid

Don't short terminals and immerse in water or pour.

Don't heat or throw in fire and solder.

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Don't attempt to crush or drop.

Don't put it in microwave oven, oven or pressure container.

Don't attempt to modify

## **Section 11- Toxicological Information**

This product does not elicit toxicological properties during routine handling and use.

Sensitization	No
Teratogenictiy	No
Reproductive toxicity	No
Acute toxicity	No

If the cells are leaked through misuse or damage, discard immediately.

Internal components of cell are irritants and sensitizers.

## **Section 12- Ecological Information**

Some materials within the cell are bio-accumulative.

Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.

## **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 not creation, 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**

This report applied to by sea, by air and by land.

UN Number: UN3480 or UN3481

According to Section II of PACKING INSTRUCTION 965-967 of IATA DGR 58<sup>th</sup> Edition 2017for

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transportation.

According to the special provision 188 of IMDG or the 《Recommendations on the Transport of Dangerous Goods Model Regulations》 (18<sup>th</sup>) . The products are not subject to dangerous goods. More information concerning shipping, testing, making and packaging can be obtained from label master at [http:// www.labelmaster.com](http://www.labelmaster.com)

Separate lithium-ion batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles and wet by rain.

## **Section 15- Regulatory Information**

OSHA hazard communication standard (29 CFR 1910.1200)

Hazardous V Non-hazardous

## **Section 16- Additional 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.

-----End of Report-----