



# Precision Power – 12V 100 Ah

## Material safety data sheet

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## SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29 CFR 1910.1200

### SECTION 1: IDENTIFICATION

Product Name: Precision Power 12V 100Ah Lithium-Ion Battery

Model Number: PP-12V100Ah

Recommended Use: Rechargeable battery for energy storage applications

Manufacturer: Ark Energy

Address: 2222 US 68 E Benton KY 42025

Emergency Phone Number: +1(270)-703-6133

Email: RyanK@precisionsonar.com

### SECTION 2: HAZARD IDENTIFICATION

Emergency Overview: This product contains a chemical substance. Safety information is given for exposure to the product as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture, the below hazards exist.

#### *GHS Classification:*

- CAS# 1333-86-4

Self-heating substances and mixtures (1) Carcinogenicity (2) Specific target organ toxicity, repeated exposure (1) (lung)GHS Label Elements:

#### *Hazard image:*



Signal Word: Danger

#### *Hazard Statements:*

- H251 Self-heating; may catch fire
- H351 Suspected of causing cancer
- H372 Causes damage to organs through prolonged or repeated exposure (lung)

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Hazard Image:**



**Signal word:** Danger

**Hazard Statements:**

H317 May cause allergic skin reaction.

H370 Causes damage to organs (digestive system).

H335 May cause respiratory irritation.

**Prevention:**

P235 Keep cool.

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P280 Wear protective gloves, protective clothing, eye protection and face protection.

P260 Do not breathe dust.

P264 Wash skin and clothing thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

**Response:**

P308 + P313 If exposed, seek medical attention.

P314 Seek medical attention if you feel unwell.

**Storage:**

P407 Maintain air gap between stacks or pallets.

P413 Store bulk masses greater than 25kg/50 lbs. at temperatures 20C-35C

P420 Store separately.

P405 Store locked up.

### **Disposal:**

P501 Contents require disposal at approved waste treatment plants.

CAS# 7440-50-8

Classification according to GHS

Sensitization skin (1, 1A, 1B)

Specific target organ toxicity, single exposure (1) (digestive system)

Specific target organ toxicity, single exposure; Respiratory tract irritation (30)

### **Hazard Images:**



### **Hazard Statements:**

H261 In contact with water releases flammable gas.

H372 Causes damage to organs through prolonged or repeated. exposure (Lung).

H413 May cause long lasting harmful effects to aquatic life.

### **Prevention:**

P223 Do not allow contact with water.

P231 + P232 Handle and store contents under inert gas, protect with moisture.

P280 Wear protective gloves and clothing thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

### **Response:**

P302 + P335 + P334 IF ON SKIN: Brush off loose particles from skin and immerse in cool water.

P370 \_ P378 In case of fire: use the appropriate media to put out the fire.

P314 Seek medical attention if you feel unwell.

### Storage:

P402 + P404 Store in a dry place. Store in a closed container.

### Disposal:

P501 Contents handling to approved waste treatment plants.

### Other Hazards

**Physical and Chemical hazards:** See Section 10

**Human Health Hazards:** See Section 11

**Environmental Hazards:** See Section 12

### SECTION 3: Chemical Composition:

- Lithium Iron Phosphate ( $\text{LiFePO}_4$ ): 30-40%
- Graphite: 10-20%
- Electrolyte: 10-15%
- Copper, Aluminum, and Other Metals: Balance

### SECTION 4: FIRST AID MEASURES

**General Information:** No special measures are required.

**After Eye Contact:** Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.

**After Skin Contact:** Remove contaminated clothing and shoes. Immediately wash with water and soap, rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

**After Inhalation:** Remove victim to non exposed area. Administer artificial respiration if breathing is difficult. Seek medical attention.

**After Swallowing:** Do not induce vomiting. Get medical attention.

## SECTION 5: FIREFIGHTING MEASURES

### **Suitable extinguishing media:**

Use extinguishing agent suitable for local conditions and the surrounding environment, such as dry powder, CO<sub>2</sub>.

### **Specific Hazards Arising from the Chemical:**

Special hazards arising from the substance or mixture

A battery may burst and release hazardous decomposition products when exposed to a fire situation. Lithium ion batteries contain flammable electrolytes that may vent, ignite and spark when subjected to high temperature (>150°C (302°F), when damaged or abused (e.g.) mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in close proximity.

### **Specific protective actions for fire-fighters:**

Protective equipment: wear a self-contained respirator. Wear a fully protective impervious suit

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

**Emergency Procedures:** Remove ignition sources, and evacuate area.

Sweep up using a method that does not generate dust. Collect as much of the spilled material as possible, place the spilled material into a suitable container for disposal. Keep spilled material out of sewers, ditches and bodies of water.

**Environmental Precautions:** Do not allow material to be released into the environment without proper governmental permits.

### **Methods and Materials for Containment and Cleaning Up:**

All waste must refer to the United Nations, the national and local regulations for disposal.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## **SECTION 7: HANDLING AND STORAGE**

Precautions for Safe Handling:

Consumption of food and beverage should be avoided in work areas. Wash hands with soap and water before eating or drinking. Ground containers when transferring liquid to prevent static accumulation and discharge.

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

Conditions for safe storage, including any incompatibilities: Requirements to be met by storerooms and receptacles

Store in a cool, dry, well-ventilated place.

Information about storage in one common storage facility: Keep away from heat, avoiding long exposure to sunlight.

## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

Engineering Controls: Use proper ventilation when handling damaged batteries.

Personal Protective Equipment:

- Safety glasses with side shields
- Protective gloves
- Respiratory protection if exposed to fumes

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

**Color:** Blue

**Physical State:** Prismatic

**Odor:** Not available

**Odor Threshold:** Not available

**pH:** Not available

**Melting point/freezing point:** Not available

**Initial boiling point and boiling range:** Not available

**Flash Point:** Not available

**Evaporation Rate:** Not available

**Flammability (solid, gas):** Not available

**Explosion Limits (vol% in air):** Not available

**Vapor Pressure, kPa at 20°C:** Not available

**Vapor Density:** Not available

**Density/Relative Density (water=1):** Not available

**Solubility(ies):** Not available

**Partition Coefficient: n-octanal/water:** Not available

**Auto-ignition Temperature:** Not available

**Decomposition Temperature:** Not available

**Viscosity:** Not available

**Other Information:** Not available

**Voltage:** 12.8V

**Electric Capacity:** 100 Ah

**Electric Energy:** 1.2 kWh

Solubility: Insoluble in water

## **SECTION 10: STABILITY AND REACTIVITY**

**Reactivity:** No data available

**Chemical Stability:** Stable

**Possibility of Hazardous Reactions:** No data available

**Conditions to Avoid:** Flames, sparks and other sources of ignition, incompatible materials

**Incompatibilities Materials:** Oxidizing agents, acid, base

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide, lithium oxide fumes

## **SECTION 11: TOXICOLOGICAL INFORMATION**

Routes of Exposure: Skin contact, eye contact, inhalation of fumes.



<b>CAS number</b>	<b>LC50/LD50</b>
15365-14-7	No data available.
1333-86-4	LD50 Rat (oral): 15400 mg/kg
61789-96-6	No data available.
24937-79-9	No data available.
7782-42-5	No data available.
21324-40-3	No data available.
7440-50-8	No data available.
7429-90-5	No data available.

**Skin Corrosion/Irritation:** No data available

**Serious Eye Damage/Irritation:** No data available

**Respiratory or Skin Sensitization:** No data available

**Germ Cell Mutagenicity:** No data available

**Carcinogenicity:** No data available

**Reproductive Toxicity:** No data available

**Specific Target Organ Toxicity-Single Exposure:** No data available

**Specific Target Organ Toxicity-Repeated Exposure:** No data available

**Aspiration Hazard:** No data available

**Information on the Likely Routes of Exposure:** No data available

**Eye:** No data available

**Skin:** No data available

**Ingestion:** No data available

**Inhalation:** No data available

Acute Toxicity: May cause irritation if battery contents are exposed.

## SECTION 12: ECOLOGICAL INFORMATION

Environmental Impact: Do not dispose of it in the environment.

**Ecological Toxicity:** No data available

**Persistence and Degradability:** No data available

**Bioaccumulative Potential:** No data available

**Mobility in Soil:** No data available

**Other Adverse Effects:** No data available

## SECTION 13: DISPOSAL CONSIDERATIONS

Disposal Methods: Dispose of in accordance with local, state, and federal regulations.

### Disposal Methods

**Recommendation:** Consult state, local or national regulations to ensure proper disposal.

### Uncleaned Packaging

**Recommendation:** Disposal must be made according to official regulations.

## SECTION 14: TRANSPORT INFORMATION


Proper Shipping Name: Lithium-ion battery

UN Number: UN3480 (if shipped alone) / UN3481 (if packed with equipment)

Hazard Class: Class 9 (Miscellaneous)

### Acute Toxicity:

<b>UN Number</b>	<b>IATA</b>	UN3480
	<b>IMDG</b>	UN3480
	<b>Model Regulation</b>	UN3480
<b>UN Proper shipping name</b>	<b>IATA</b>	Lithium ion batteries
	<b>IMDG</b>	Lithium ion batteries
	<b>Model Regulation</b>	Lithium ion batteries
<b>Transport Hazard Class (es)</b>	<b>IATA</b>	9
	<b>IMDG</b>	9

	<b>Model Regulation</b>	9
<b>Packing group</b>	<b>IATA</b>	N/A
	<b>IMDG</b>	N/A
	<b>Model Regulation</b>	N/A
<b>Packing Sign</b>	<b>IATA</b>	
	<b>IMDG</b>	
	<b>Model Regulation</b>	
	<b>Environmental Hazards Marine Pollutant:</b>	No
	<b>Special precautions for user</b>	Not applicable

**Transport Information:**

Precision power LiFePO4 Batteries have passed the test UN38.3.

Watt-hour exceeds the standard, so it belongs to dangerous goods. The goods are packaged according to the packaging Instruction 965 Section IA of IATA DGR 58th Edition for transportation.

Watt-hour exceeds the standard, so it belongs to dangerous goods. The goods are packaged according to the special provision 230, 348 of IMDG (37-14).

Watt-hour exceeds the standard, so it belongs to dangerous goods. The goods are packaged according to the <<Recommendations On The Transport of Dangerous Goods-Model Regulations>> (19th).

Separate batteries to prevent short-circuiting and they should be packed in a strong package during transport. Lithium cell or battery should incorporate a safety venting device or be designed to prevent a violent rupture under normal transport conditions. Keep away from high temperature and open flames. Lithium ion cells and batteries must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity.

**SECTION 15: REGULATORY INFORMATION**

This product complies with applicable regulations for lithium-ion batteries.

## **SECTION 16: OTHER INFORMATION**

Disclaimer: The information provided is based on available data and is believed to be accurate.

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