

## MATERIAL SAFETY DATA SHEET

### Section 1 - Chemical Product and Company Identification

#### PRODUCTS AND COMPANY IDENTIFICATION

##### COMPANY IDENTIFICATION

**RELiON BATTERY, LLC**  
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##### PRODUCT IDENTIFICATION

**PRODUCT NAME:** LITHIUM-ION RECHARGEABLE BATTERY  
**CHEMICAL SYSTEM:** Lithium-ion

### Section 2 – Composition/Information on Ingredient

Chemical composition	Molecular formula	CAS No.	Weight (%)
Lithium Iron Phosphate	LiFePO <sub>4</sub>	15365-14-7	37.9
Graphite	C	7782-42-5	18.2
Copper	Cu	7440-50-8	10.9
Aluminium	Al	7429-90-5	7.0
Lithium Hexafluorophosphate	LiPF <sub>6</sub>	21324-40-3	3.1
Carbonate	-	-	19.4
Polypropylene	(C <sub>3</sub> H <sub>6</sub> ) <sub>n</sub>	9003-07-0	3.5

### Section 3 - Hazards Identification

**Class of division is 9, This product is safe under normal use.**

#### Health Hazards (Acute and Chronic)

These chemicals are contained in a sealed enclosure. Risk of exposure occurs only if the battery is mechanically, thermally or electrically abused to the point of compromising the enclosure. 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.

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## Section 4 - First Aid Measures

### **Eye Contact**

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Please get medical attention.

### **Skin Contact**

Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Please get medical attention.

### **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 Medium**

Dry chemical, CO<sub>2</sub>.

### **Special Fire-Fighting Procedures**

Self-contained breathing apparatus.

### **Unusual Fire and Explosion Hazards**

Cell contents may vent when subjected to excessive heat-exposing battery contents.

### **Hazardous Combustion Products**

Carbon monoxide, carbon dioxide, lithium oxide fumes.

## Section 6 - Accidental Release Measures

### **Steps to be Taken in case Material is Released or Spilled**

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe contents with a thick cloth, and dispose of contents in a plastic bag and put them 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.

### **Waste Disposal Method**

It is recommended to discharge the battery to the end, handing in the abandoned batteries to related department unified, disposing 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

For personal safety and environmental preservation, the batteries should not be opened, destroyed or incinerated, since they may leak or rupture and release the ingredients contained in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, force over-discharge, and 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. Stored preferably in cool, dry and well-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 malfunction or abuse, where contents vent outside of the hermetically sealed container, 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 where contents vent outside of the hermetically sealed container of battery: Respiratory protection, protective gloves, protective clothing and safety glass with side shields.

## Section 9 - Physical and Chemical Properties

### **Appearance**

**Physical state: Solid**

**Form: Cylindrical**

**Color: Metallic color**

**Odor: No odor**

**pH : NA**

**Specific temperatures/temperature ranges at which changes in physical state occur**

**There is no useful information for the product as a mixture**

**Flash point: NA**

**Explosion properties: NA**

**Density : NA**

**Solubility, with indication of the solvent(s): insoluble in water**

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## Section 10 - Stability and Reactivity

**Stability:** Stable under normal use

### Conditions to Avoid

Avoid exposing the battery to fire or high temperature. Do not disassemble, open, crush, puncture, incinerate, short circuit across the terminals or install with incorrect polarity. Avoid mechanical abuse and electrical abuse. The batteries are incompatible with water, moisture, oxidizing agents, reducing agents, acids and bases.

### Hazardous Decomposition Products

This material may release toxic fumes if burned or exposed to fire.

### Hazardous Polymerization

Will not occur.

If contents leak, it is forbidden for them to come into contact with strong oxidizers, mineral acids, strong alkalis, 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 strongly irritate the skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

## Section 12 - Ecological Information

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

## Section 13 - Disposal Considerations

### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OF PREPARATION

If batteries are still fully charged or only partially discharged, they can be considered a reactive hazardous waste because of significant amount of uncreated, 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

**IMDG Proper Shipping Name:** Lithium Ion Batteries

**UN No.:** UN3480

In case of transportation, avoid exposure to high temperature and prevent the formation of any condensation. 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.

UN classification: However this products' shipping name is "Lithium-ion batteries"(or "lithium batteries packed with equipment" or "lithium batteries contained in equipment"), it is not recognized as "DANGEROUS GOODS" when its transport condition accords with "instructions 965 section II of IATA-DGR"(or "packing instructions 966 section II" or "packing instructions 967 section") or "special provision 188 of IMO-IMDG code.

## Section 15 - Regulatory Information

### Law Information

《Dangerous Goods Regulation》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《International Maritime Dangerous Goods》

《Technical Instructions for the Safe Transport of Dangerous Goods》

《Classification and code of dangerous goods》

《Occupational Safety and Health Act》 (OSHA)

《Toxic Substances Control Act》 (TSCA)

《Consumer Product Safety Act》 (CPSA)

《Federal Environmental Pollution Control Act》 (FEPCA)

《The Oil Pollution Act》 (OPA)

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

《Resource Conservation and Recovery Act》 (RCRA)

《Safety Drinking Water Act》 (CWA)

《California Proposition 65》

《Code of Federal Regulations》 (CFR)

In accordance with all Federal, State and Local laws.

## Section 16 -Additional Information

The above information is based on the data of which we are aware, and it is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and variables which may be unfamiliar to us, and since the 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 or her own determination of the suitability of the material for his or her particular purpose.