

# MSDS

## MATERIAL SAFETY DATA SHEET

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**Written by:** \_\_\_\_\_

*Jona. Jin*

**Approved by:** \_\_\_\_\_



# Material Safety Data Sheet

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\* The MSDS is prepared based on the information provided by client. The contents and formats of this MSDS are revised as per client's request.

## Section 1-Chemical Product and Company Identification

<b>Product Name</b>	LiFePO4 Cell
<b>Model</b>	IFR18650 1500mAh 3.2V
<b>Ratings</b>	3.2V, 1500mAh, 4.80Wh
<b>Weight</b>	42.0g
<b>Manufacturer</b>	Shenzhen Pro-Tech Energy Co., Ltd
<b>Manufacturer address</b>	Room 1712, Huasheng Commercial Building, No.39, Huasheng Road, Langkou Community, Dalang Street, Longhua District, Shenzhen, China.
<b>Emergency Telephone</b>	+86-755-21046731
<b>Fax</b>	+86-755-21046731

## Section 2- Composition Information

Chemical Composition	CAS No.	Weight (%)	Trade Secret
Lithium cobaltate	12190-79-3	15 - 40	*
Graphite	7782-42-5	10 - 30	*
Phosphate(1-), hexafluoro-, lithium	24937-79-9	10 - 30	*
Copper	7440-50-8	7-13	*
Aluminium	7429-90-5	5-10	*
Nickel	7440-02-0	1-5	*

“ \* ” The exact percentage (concentration) of composition has been withheld as a trade secret.

## Section 3- Hazards Identification

<b>Emergency overview:</b>	N/A
<b>Classification according to GHS</b>	Not a dangerous substance according to GHS
<b>Label elements:</b>	
Hazard pictogram(s)	No available
Signal word	No available
Hazard statement(s)	No available
<b>Precautionary statement(s):</b>	

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Prevention	No available
Response	No available
Disposal	No available
Environmental hazards:	No relevant information
Important symptoms:	See section 11 for more information

## Section 4- First Aid Measures

Eye contact	Flush eyes with plenty of water for least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin contact	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	Water, CO <sub>2</sub>
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.

## Section 6- Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures:

If the battery is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the vapors to dissipate. Avoid skin and eyes contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerated. If leakage of the battery happens, liquid could be absorbed with sand, earth or other inert substance and contaminated area should be ventilated meantime.

### Environment precautions:

Do not allow product to reach sewage system or any water source.  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.

### Methods and material for containment and cleaning up:

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters.

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## Section 7- Handling and Storage

<b>Handling</b>	The battery 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.
<b>Storage</b>	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.
<b>Other Precautions</b>	The battery 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

<b>Engineering Controls</b>	Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor. Keep away from heat and open flame. Store in a cool, dry place.
<b>Personal Protective Equipment</b>	Respiratory Protection: Not necessary under normal conditions. Skin and body Protection: Not necessary under normal conditions, Wear suitable protective clothing and gloves if handling an open or leaking battery. Hand protection: Wear suitable gloves if handling an open or leaking battery. Eye Protection: Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.
<b>Other Protective Equipment</b>	Have a safety shower and eye wash fountain readily available in the immediate work area.
<b>Hygiene Measures</b>	Do not eat, drink, or smoke in work area. Maintain good housekeeping.

## Section 9- Physical and Chemical Properties

<b>Form</b>	Solid
<b>Color</b>	Blue
<b>Odour</b>	No available
<b>pH</b>	No available
<b>Melting point/freezing point</b>	No available
<b>Boiling Point and Boiling range</b>	No available
<b>Flash Point</b>	No available

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Upper/lower flammability or explosive limits	No available
Vapor Pressure	No available
Vapor Density	No available
Relative density	No available
Solubility in Water	No available
Auto-ignition temperature	No available
Decomposition temperature	No available
Evaporation rate	No available
Flammability (soil, gas)	No available
Viscosity	No available
<b>Section 10- Stability and reactivity</b>	
Stability	The product is stable under conditions described Section 7
Conditions to Avoid	Heat above 70°C or incinerate. Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions.
Incompatible Materials	Oxidizing agents, acid, base.
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide, lithium oxide fumes.
Possibility of Hazardous Reaction	Not Available
<b>Section 11 – Toxicological Information</b>	
Irritation	Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.
Sensitization	Not Available
Neurological Effects	Not Available
Teratogenicity	Not Available
Reproductive Toxicity	Not Available
Mutagenicity (Genetic Effects)	Not Available
Toxicologically Synergistic Materials	Not Available

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## Section 12- Ecological Information

Ecological Toxicity	Not Available
Mobility in soil	Not Available
Persistence and Degradability	Not Available
Bioaccumulation potential	Not Available
Other Adverse Effects	Not Available

## Section 13- Disposal Considerations

Product disposal recommendation	Observe local, state and federal laws and regulations.
Uncleaned packaging recommendation	Disposal must be made according to official regulations

## Section 14 – Transport Information

Label for conveyance	Lithium Battery Label
UN Number	UN 3480
Transport hazard class(es)	9
Packing group	--
Marine pollutant	No
UN Proper shipping name	Lithium ion Batteries (Including lithium ion polymer batteries)

### Transport information:

LiFePO<sub>4</sub> Cell (Sample Model: IFR18650 1500mAh 3.2V) is tested and has passed in accordance with UN manual of Tests and Criteria, Part III, subsection 38.3.

The goods shall be complied with the requirements of Section IB of Packing Instruction 965 of 59<sup>th</sup> DGR Manual of IATA or special provision 188 of IMDG CODE (Amdt. 38-16).

Separate Lithium-ion batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport, ensure that the goods will not falling, dropping, and breakage, Prevent collapse of cargo piles and wet by rain.

**Transport Fashion:** By air, by sea, by railway, by road.

## Section 15- Regulatory information

### Law information

《Dangerous Goods Regulations》

《Recommendation on the Transport of Dangerous Goods Model Regulations》

《International Maritime Dangerous Goods》

《Technical Instructions for the Safe Transport of Dangerous Goods》

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《Classification and code of dangerous Goods》  
《Occupational Safety and Health Act》 (OSHA)  
《Toxic Substance 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 according with all Federal, State and local laws.

## Section 16- Other Information

The information above is believed to be accurate and represents the best information currently available to us. However, concorde makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

-- End of Report --