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Report No.: I09183130416D

# MSDS Report

Sample Description  
& Model

Cylindrical Lithium Iron Phosphate Batteries (18500)

Applicant

Optimumnano Energy Co., Ltd

Address

No.68, Lanjing North Road, Ping Shan New District,  
Shenzhen, China.



**PONY 谱尼测试**  
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www.ponytest.com

Hotline 400-819-5688

Add: 北京市海淀区苏州街49-3  
号盈智大厦

Tel: (010) 82618116

上海市徐汇区桂平路680号  
35号楼4层

(021) 64851999

深圳市南山区创业路中兴  
工业城6栋1层

(0755) 26050909

青岛市崂山区株洲路190  
号6层

(0532) 88706866

Add: 天津市南开区红旗路赢寰  
大厦10层

Tel: (022) 27360730

宁波市高新区新晖路150号  
二期4号楼4层

(0574) 87736499

广州市海珠区敦和路189号  
海珠科技园3号楼7层

(020) 89224310



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## Material Safety Data Sheet

According to ISO11014:2009 & GB/T16483-2008

### Section 1 - Chemical Product and Company Identification

#### Chemical product identification

**Sample Description:** Cylindrical Lithium Iron Phosphate Batteries

**Sample Model:** 18500

**Sample Uses:** Lamp

#### Company identification

**Manufacturer:** Optimumnano Energy Co., Ltd

**Address:** No.68, Lanjing North Road, Ping Shan New District, Shenzhen, China.

**Tel:** 0755-84630688

**Fax:** 0755-84630785

**Post code:** 518118

#### Further Information obtainable from

**Emergency telephone:** 0755-84630688

**E-mail:** secretary1@optimumchina.com

### Section 2 - Hazards Identification

#### Classification of the substance or mixture

#### Classification according to GHS

Not a dangerous substance according to GHS.

#### Label elements

#### Labelling according to Regulation (EC) No 1272/2008[CLP]

**Hazard pictogram(s):** No available

**Signal word:** No available

**Hazard statement(s):** No available

#### Precautionary statement(s):

**Prevention:** No available

**Response:** No available

**Disposal:** No available

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Tel: (0755) 26050909

Add: 青岛市崂山区株洲路190号6层  
Tel: (0532) 88706866

Add: 天津市南开区红旗路赢寰大厦10层  
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**Other hazards**

No information available.

### Section 3 - Composition, Information on Ingredients

**Chemical characterization: Mixture**

Chemical Composition	CAS No.	EC#	Weight (%)
Lithium Iron Phosphate	15365-14-7	---	29.5
Graphite	7782-42-5	231-955-3	14
Aluminum	7429-90-5	231-072-3	5
Copper	7440-50-8	231-159-6	10.5
Ferrous	7439-89-6	231-096-4	23
Organic Solvent	---	---	16

### Section 4 - First Aid Measures

**Description of first aid measures****General information** No special measures 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 and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

**After inhalation**

Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

**After swallowing**

Do not induce vomiting. Get medical attention.

**Information for doctor:****Indication of any immediate medical attention and special treatment needed**

No further relevant information available.



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## Section 5 - Fire Fighting Measures

**Flammability:** Not available.

### Extinguishing media

#### Suitable extinguishing agents

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

#### Special hazards arising from the substance or mixture

Battery may burst and release hazardous decomposition products when exposed to a fire situation. Lithium ion batteries contain flammable electrolyte that may vent, ignite and produce sparks 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 clothes proximity.

#### Advice for firefighters

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

## Section 6 - Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

### Environmental precautions

Do not allow material to be released to the environment without proper governmental permits.

### Steps to be taken in case material is spilled or released

Remove ignition sources, evacuate area. Sweep up using a method that does not generate dust. Collect as much of the spilled material as possible, placed the spilled material into a suitable disposal container. Keep spilled material out of sewers, ditches and bodies of water.

### Waste disposal method

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

### Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.



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## Section 7 - Handling and Storage

### Handling

#### Precautions for safe handling

Consumption of food and beverage should be avoided in work areas.

Wash hands with soap and water before eating, drinking.

Ground containers when transferring liquid to prevent static accumulation and discharge.

#### Information about fire and explosion protection

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 the long time of sunlight.

#### Further information about storage conditions

Keep container tightly sealed.

#### Specific and use

No further relevant information available.

## Section 8 - Exposure Controls, Personal Protection

### Control parameters

Ingredients with limit values that require monitoring at the workplace:	
15365-14-7 Lithium Iron Phosphate	
TLV (USA)	N/A
MAK(Germany)	N/A

### Exposure controls

#### Personal protective equipment

#### General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.



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**Respiratory Protection**

Use suitable respirator when high concentrations are present.

**Personal Protection****Protection of hands***Protective gloves***Eye protection***Tightly sealed goggles*

## Section 9 - Physical and Chemical Properties

**Information on basic physical and chemical properties****General information**

<b>Appearance:</b>	Black.
<b>Form:</b>	Cylindrical.
<b>Odour:</b>	Odorless.
<b>pH:</b>	Not available.
<b>Change in condition</b>	
<b>Melting point:</b>	Not available.
<b>Boiling point:</b>	Not available.
<b>Freezing point</b>	Not available.
<b>Flash point:</b>	Not available.
<b>Flammability:</b>	Not available.
<b>Ignition temperature:</b>	Not available.
<b>Decomposition temperature:</b>	Not available.
<b>Self-igniting:</b>	Not available.
<b>Danger of explosion:</b>	Not available.
<b>Explosion limits</b>	
<b>Lower:</b>	Not available.
<b>Upper:</b>	Not available.



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<b>Oxidizing properties:</b>	Not available.
<b>Vapour pressure:</b>	Not available.
<b>Density:</b>	Not available.
<b>Relative density:</b>	Not available.
<b>Vapour density:</b>	Not available.
<b>Evaporation rate:</b>	Not available.
<b>Solubility in/Miscibility with water:</b>	Not available.
<b>n-octanol/water partition coefficient:</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Dynamic:</b>	Not available.
<b>Kinematic:</b>	Not available.
<b>Other information:</b>	
<b>Voltage</b>	3.2V
<b>Electric capacity</b>	850mAh
<b>Electric Energy</b>	2.72Wh

## Section 10 - Stability and Reactivity

**Reactivity:** Data not available.

**Chemical stability:** Stable.

**Possibility of hazardous reactions:** Data not available.

### Conditions to Avoid

Flames, sparks, and other sources of ignition, incompatible materials.

### Incompatibilities

Oxidizing agents, acid, base.

### Hazardous Combustible Products

Carbon monoxide, carbon dioxide, lithium oxide fumes.

### Hazardous Polymerization

N/A.

## Section 11 - Toxicological Information

### Information on toxicological effects

#### Acute toxicity

#### LD/LC50 Values relevant for classification:

Not available.



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**Primary irritant effect**

No further relevant information available.

**Sensitization:**

No further relevant information available.

**Additional toxicological information:**

**Toxicological, metabolism and distribution:**

No further relevant information available.

**Acute effects (acute toxicity, irritation and corrosivity):**

No further relevant information available.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**

No further relevant information available.

## Section 12 - Ecological Information

**Toxicity**

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability:** No further relevant information available.

**Behaviour in environmental systems**

**Bioaccumulative potential:** No further relevant information available.

**Mobility in soil:** No further relevant information available.

**Ecological effects**

**Additional ecological information**

**General notes:**

Do not allow material to be released to the environment without proper governmental permits.

**Other adverse effects:** No further relevant information available.

## Section 13 - Disposal Considerations

**Waste treatment methods**

**Recommendation:**

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

**Uncleaned packaging**



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

### Section 14 - Transport Information

<b>UN Number</b>	
<b>IATA,IMDG</b>	UN3481
<b>Model Regulation</b>	UN3481
<b>UN Proper shipping name</b>	
<b>IATA,IMDG</b>	Lithium Ion Batteries Contained In Equipment
<b>Model Regulation</b>	Lithium Ion Batteries Contained In Equipment
<b>Transport hazard class(es)</b>	
<b>IATA,IMDG</b>	9
<b>Model Regulation</b>	9
<b>Packing group</b>	
<b>IATA,IMDG</b>	N/A
<b>Model Regulation</b>	N/A
<b>Environmental hazards</b>	
<b>Marine pollutant:</b>	No
<b>Special precautions for user</b>	Not applicable.

**Transport information:** The Cylindrical Lithium Iron Phosphate Batteries (18500) has passed the test UN38.3, according to the report ID: I09183129821D.

According to the Packing Instruction 967 section II of IATA DGR 55<sup>th</sup> Edition for transportation.

According to the special provision 188 of IMDG (36-12) 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, marking and packaging can be obtained from Label master at <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.

**Note: Batteries weight in the package < 5kg (By air, Batteries installed in equipment).**



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

### Section 15 - Regulatory Information

This Material Safety Data Sheet complies with the requirements of Regulation (EC) No. 1907/2006.

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Composition	CAS#	TSCA	EC#	EINECS
Lithium Iron Phosphate	15365-14-7	Listed	---	Not Listed
Graphite	7782-42-5	Listed	231-955-3	Listed
Aluminum	7429-90-5	Listed	231-072-3	Listed
Copper	7440-50-8	Listed	231-159-6	Listed
Ferrous	7439-89-6	Listed	231-096-4	Listed

### Section 16 - Additional Information

Issue Time: 2014-10-20

Issue Department: Technical department

Modification record:

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Other Information:

ACGIH: ( American Conference of Governmental Industrial Hygienists ) ; BCF:



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(Bioconcentration Factor) ; BOD: (Biochemical oxygen demand) ; CAS: (Chemical Abstracts Service) ; DSL: (the Domestic Substances List of Canada) ; EC: (European Commission) ; EC50: (Median effective concentration) ; ENCS (MITI No.) : (Existing and New Chemical Substances of Japan) ; IARC: (International Agency for Research on Cancer) ; IATA: (International Air Transport Association) ; IECSC: (Inventory of Existing Chemical Substances in China) ; IMDG: (International Maritime Dangerous Goods) ; LC50: (Lethal concentration, 50 percent kill) ; LD50: (Lethal dose, 50 percent kill) ; NDSL: (the Non-domestic Substances List of Canada) ; NIOSH: (US National Institute for Occupational Safety and Health) ; NOEC: (No observed effect concentration) ; NTP: (US National Toxicology Program) ; OSHA: (US Occupational Safety and Health) ; PC-STEL: (Permissible concentration-time weighted average) ; PC-TWA: (Permissible concentration-short time exposure limit) ; PEL: (Permissible Exposure Level) ; REL: (Recommended Exposure Limit) ; RTECS: (Registry of Toxic Effects of Chemical Substances) ; STEL: (Short Term Exposure Limit) ; TDG: (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations) ; TLV: (Threshold Limit Value) ; TOC: (Total Organic Carbon) ; TSCA: (Toxic Substances Control Act of USA) ; TWA: (Time Weighted Average)

\*\*\*End of report\*\*\*