

**Safety Data Sheet**  
**According to Hazard Communication Standard (29 CFR 1910.1200)**

Lithium Iron Phosphate Battery 12V 50Ah, 12V 100Ah, 12V 170Ah

Version 1.0

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SDS record number: CSSS-TCO-010-129751

## 1. Identification

|                             |                                                               |
|-----------------------------|---------------------------------------------------------------|
| Product name                | Lithium Iron Phosphate Battery 12V 50Ah, 12V 100Ah, 12V 170Ah |
| Synonyms                    | -                                                             |
| Trade Name                  | RENOGY                                                        |
| CAS #                       | See section 3                                                 |
| Product code                | -                                                             |
| Product use                 | -                                                             |
| Manufacturer/Supplier       |                                                               |
| Supplier(Manufacturer):     | O'CELL New Energy Technology Co.,Ltd.                         |
| Address:                    | O'CELL Industry Zone, Yayuan Road, Xiaoting, Hubei, China     |
| Contact person(E-mail):     | renzheng@ocelltech.com                                        |
| Telephone:                  | +86-717-6344848                                               |
| Fax:                        | +86-717-6516633                                               |
| Emergency telephone Number: | +86-755-81781377                                              |

## 2. Hazard(s) identification

### GHS classification

The product is an article. Under normal conditions, it does not fulfill any hazard classification criteria according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). In case of battery ruptures, the following hazards may be observed.

|                       |                                          |             |
|-----------------------|------------------------------------------|-------------|
| Physical hazards      | Not classified                           |             |
| Health hazards        | Acute toxicity, oral                     | Category 4  |
|                       | Skin corrosion/irritation                | Category 2  |
|                       | Serious eye damage/eye irritation        | Category 2A |
|                       | Sensitization, respiratory               | Category 1  |
|                       | Sensitization, skin                      | Category 1  |
|                       | Carcinogenicity                          | Category 1A |
|                       | Specific target organ toxicity, repeated | Category 1  |
| Environmental hazards | Not classified                           |             |

### GHS label elements

#### Hazard Pictograms



#### Signal word

Danger

#### Hazard statement

Harmful if swallowed.

Causes skin irritation

Causes serious eye irritation

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

May cause cancer

Causes damage to organs

## Precautionary statement

### Prevention

Obtain special instructions before use.

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

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash hands thoroughly after handling.

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

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

[In case of inadequate ventilation] wear respiratory protection.

### Response

If swallowed: Call a poison center/doctor if you feel unwell.

If on skin: Wash with plenty of water/...

IF inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If exposed: Call a poison center /doctor.

If exposed or concerned: Get medical advice/attention.

Rinse mouth.

If skin irritation occurs: Get medical advice/attention.

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

If experiencing respiratory symptoms: Call a poison center/ doctor

Take off contaminated clothing and wash it before reuse.

### Storage

Store locked up.

### Disposal

Dispose of contents/container in corroding with local regulation.

### Other hazards

Not available.

## 3. Composition / information on ingredients

| Components                  | CAS#       | Percent |
|-----------------------------|------------|---------|
| Ferrous Phosphate Lithium   | 15365-14-7 | 30~40%  |
| Aluminum                    | 7429-90-5  | 2~10%   |
| Nickel                      | 7440-02-0  | 1~5%    |
| Carbon                      | 1333-86-4  | 10~20%  |
| Copper                      | 7440-50-8  | 5~10%   |
| PP                          | 9003-07-0  | 2-5%    |
| Polypropylene               |            |         |
| PVC                         | 9002-86-2  | 2~5%    |
| Polyvinyl Chloride          |            |         |
| Paper                       | N/A        | 2~5%    |
| EC                          | 96-49-1    |         |
| Ethylene Carbonate          |            |         |
| DMC                         | 616-38-6   |         |
| Dimethyl Carbonate          |            | 10~15%  |
| EMC                         | 623-53-0   |         |
| Ethyl Methyl Carbonate      |            |         |
| Lithium Hexafluorophosphate | 21324-40-3 |         |

## 4. First-aid Measures

### First aid procedures

#### Eye contact

If symptoms persist, call a physician. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area.

#### Skin contact

Wash off immediately with soap and plenty of water for at least 15 minutes. In the case of skin irritation or allergic reactions see a physician.

#### Inhalation

Remove to fresh air. If symptoms persist, call a physician. Get medical attention immediately if symptoms occur.

#### Ingestion

Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

### Notes to physician

Treat symptoms.

## 5. Fire-fighting measures

### Flammable properties

Not available.

### Extinguishing media

#### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

Use of water spray when fighting fire may be inefficient.

### Firefighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. Protective respirator with independent air supply. According to size of fire Full protection, if necessary. Dispose of contaminated extinction water according to official regulations.

### Hazardous combustion products

Under fire conditions, batteries may burst and release hazardous decomposition products when exposed to a fire situation. This could result in the release of flammable or corrosive materials. Hazardous combustion products: CO, CO<sub>2</sub>, Metal oxides, Irritating fumes.

## 6. Accidental release measures

### Personal precautions

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

### Environmental 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 for 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.

## 7. Handling and storage

### Handling

In case of rupture. Use personal protection equipment. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not breathe dust/fume/gas/mist/vapors/spray.

### Storage

Keep containers tightly closed in a dry, cool and well-ventilated place.

## 8. Exposure controls / personal protection

**Occupational exposure limits****US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

| Components                             | Type | Value |
|----------------------------------------|------|-------|
| PVC/Polyvinyl Chloride (CAS 9002-86-2) | STEL | 5 ppm |
|                                        | TWA  | 1 ppm |

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components               | Type | Value     | Form                 |
|--------------------------|------|-----------|----------------------|
| Aluminum (CAS 7429-90-5) | PEL  | 5 mg/m3   | Respirable fraction. |
|                          |      | 15 mg/m3  | Total dust.          |
| Carbon (CAS 1333-86-4)   | PEL  | 3.5 mg/m3 |                      |
| Copper (CAS 7440-50-8)   | PEL  | 1 mg/m3   | Dust and mist.       |
|                          |      | 0.1 mg/m3 | Fume.                |
| Nickel (CAS 7440-02-0)   | PEL  | 1 mg/m3   |                      |

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

| Components               | Type | Value    | Form                 |
|--------------------------|------|----------|----------------------|
| Aluminum (CAS 7429-90-5) | TWA  | 5 mg/m3  | Respirable fraction. |
|                          |      | 15 mg/m3 | Total dust.          |
|                          |      | 50 mppcf | Total dust.          |
|                          |      | 15 mppcf | Respirable fraction. |

**US. ACGIH Threshold Limit Values**

| Components                             | Type | Value     | Form                 |
|----------------------------------------|------|-----------|----------------------|
| Aluminum (CAS 7429-90-5)               | TWA  | 1 mg/m3   | Respirable fraction. |
| Carbon (CAS 1333-86-4)                 | TWA  | 3 mg/m3   | Inhalable fraction.  |
| Copper (CAS 7440-50-8)                 | TWA  | 1 mg/m3   | Dust and mist.       |
|                                        |      | 0.2 mg/m3 | Fume.                |
| Nickel (CAS 7440-02-0)                 | TWA  | 1.5 mg/m3 | Inhalable fraction.  |
| PVC/Polyvinyl Chloride (CAS 9002-86-2) | TWA  | 1 mg/m3   | Respirable fraction. |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components               | Type | Value       | Form                               |
|--------------------------|------|-------------|------------------------------------|
| Aluminum (CAS 7429-90-5) | TWA  | 5 mg/m3     | Respirable.                        |
|                          |      | 5 mg/m3     | Welding fume or pyrophoric powder. |
|                          |      | 10 mg/m3    | Total                              |
| Copper (CAS 7440-50-8)   | TWA  | 1 mg/m3     | Dust and mist.                     |
| Carbon (CAS 1333-86-4)   | TWA  | 0.1 mg/m3   |                                    |
| Nickel (CAS 7440-02-0)   | TWA  | 0.015 mg/m3 |                                    |

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls:**

Use in a well-ventilated area.

**Individual protection measures, such as personal protective equipment:****Eye / face protection**If splashes are likely to occur: Wear safety glasses with side shields (or goggles).  
None required for consumer use.**Skin protection**Wear protective gloves and protective clothing. Long sleeved clothing.  
Impervious gloves.**Respiratory protection**

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced , ventilation and evacuation may be required.

**General hygiene considerations**

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing.

## 9. Physical and chemical properties

### Appearance

|                                                |               |
|------------------------------------------------|---------------|
| Physical state                                 | Solid         |
| Form                                           | Solid         |
| Color                                          | Blue          |
| Odor                                           | Odorless      |
| Odor threshold                                 | Not available |
| pH                                             | Not available |
| Vapor pressure                                 | 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                               | Not available |
| Vapor density                                  | Not available |
| Density                                        | Not available |
| Solubility (water)                             | Not available |
| Partition coefficient                          | Not available |
| Auto-ignition temperature                      | Not available |
| Decomposition temperature                      | Not available |
| Specific gravity                               | Not available |
| Flammability limits in air, upper, %by volume  | Not available |
| Flammability limits in air, lower, % by volume | Not available |
| VOC                                            | Not available |
| Percent volatile                               | Not available |
| Other data                                     |               |
| Viscosity                                      | Not available |
| Upper/lower explosive limits                   | Not available |
| Surface tension                                | Not available |

## 10. Stability and reactivity

|                                    |                                                                                          |
|------------------------------------|------------------------------------------------------------------------------------------|
| Chemical stability                 | Material is stable under normal conditions.                                              |
| Conditions to avoid                | Incompatible materials. High temperature, heat, mechanical or electrical damage.         |
| Incompatible materials             | Strong acids. Strong oxidizing agents. Strong bases.                                     |
| Hazardous decomposition products   | Carbon monoxide, carbon dioxide, lithium metal oxides, other irritating and toxic gases. |
| Possibility of hazardous reactions | No dangerous reactions known.                                                            |

## 11. Toxicological information

### Toxicokinetics, metabolism and distribution:

|                               |               |
|-------------------------------|---------------|
| Non-human toxicological data: | Not available |
|-------------------------------|---------------|

## Information on toxicological effects:

### Acute toxicity:

|                                    |                 |
|------------------------------------|-----------------|
| LD50(Oral, Rat):                   | Not available   |
| LD50(Dermal, Rat):                 | Not available   |
| LC50(Inhalation, Rat):             | Not available   |
| Skin corrosion/Irritation:         | Not classified. |
| Serious eye damage/irritation:     | Not classified  |
| Respiratory or skin sensitization: | Not classified  |
| Germ cell mutagenicity:            | Not classified  |
| Carcinogenicity:                   | Not classified  |
| Reproductive toxicity:             | Not classified  |
| STOT- single exposure:             | Not classified  |
| STOT-repeated exposure:            | Not classified  |
| Aspiration hazard:                 | Not classified  |

## 12. Ecological information

### Toxicity:

| Acute toxicity |     | Time | Species | Method   | Evaluation | Remarks |
|----------------|-----|------|---------|----------|------------|---------|
| EC50           | N/A | 72h  | Fish    | OECD 203 | N/A        | N/A     |
| EC50           | N/A | 48h  | Daphnia | OECD 202 | N/A        | N/A     |
| EC50           | N/A | 72h  | Algae   | OECD 201 | N/A        | N/A     |

|                                 |                                                   |
|---------------------------------|---------------------------------------------------|
| Persistence and degradability:  | Not available.                                    |
| Bioaccumulative potential:      | Not available.                                    |
| Mobility in soil:               | Not available.                                    |
| Results of PBT&vPvB assessment: | Not available.                                    |
| Other adverse effects:          | No known significant effects or critical hazards. |

## 13. Disposal considerations

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Disposal instructions  | If the battery is not completely discharged or only partially discharged, the battery should be fully discharged because some of the non-depleted lithium is present in the battery. The waste batteries must be handed over to the relevant departments uniformly. All wastes must be consulted according to the UN, national and Local laws and regulations for disposal. In the relevant laws and regulations permit, the battery can be recycled. |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied.                                                                                                                                                                                                                                                                                                                                           |

## 14. Transport information

### DOT

#### Basic shipping requirements:

|                       |                       |
|-----------------------|-----------------------|
| UN number             | 3480                  |
| Proper shipping name  | LITHIUM ION BATTERIES |
| Hazard class          | 9                     |
| Packing group         | -                     |
| Environmental hazards | No                    |

### IATA

|                         |                       |
|-------------------------|-----------------------|
| UN number               | 3480                  |
| UN proper shipping name | LITHIUM ION BATTERIES |

|                            |    |
|----------------------------|----|
| Transport hazard class(es) | 9  |
| Packing group              | -  |
| Environmental hazards      | No |

#### IMDG

|                            |                       |
|----------------------------|-----------------------|
| UN number                  | 3480                  |
| UN proper shipping name    | LITHIUM ION BATTERIES |
| Transport hazard class(es) | 9                     |
| Packing group              | -                     |
| Environmental hazards      | No                    |

## 15. Regulatory information

### US federal regulations

#### Toxic Substances Control Act (TSCA)

##### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Ferrous Phosphate Lithium (CAS 1.0 % One-Time Export Notification only.  
15365-14-7)

##### CERCLA Hazardous Substance List (40 CFR 302.4)

|                                       |         |
|---------------------------------------|---------|
| Copper (CAS 7440-50-8)                | Listed. |
| DMC/Dimethyl Carbonate (CAS 616-38-6) | Listed. |
| Nickel (CAS 7440-02-0)                | Listed. |

##### SARA 304 Emergency release notification

Not regulated.

##### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

|                                        |                        |
|----------------------------------------|------------------------|
| PVC/Polyvinyl Chloride (CAS 9002-86-2) | Cancer                 |
|                                        | Central nervous system |
|                                        | Liver                  |
|                                        | Blood                  |
|                                        | Flammability           |

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### SARA 302 Extremely hazardous substance

Not listed.

|                                 |    |
|---------------------------------|----|
| SARA 311/312 Hazardous chemical | No |
|---------------------------------|----|

#### SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|---------------|------------|----------|
| Aluminum      | 7429-90-5  | 2~10%    |
| Copper        | 7440-50-8  | 5~10%    |
| Nickel        | 7440-02-0  | 1~5%     |

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Nickel (CAS 7440-02-0)

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

|                                |                |
|--------------------------------|----------------|
| Safe Drinking Water Act (SDWA) | Not regulated. |
|--------------------------------|----------------|

### US state regulations

#### California Proposition 65

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Carbon (CAS 1333-86-4)

Listed: February 21, 2003

Nickel (CAS 7440-02-0)

Listed: October 1, 1989

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Aluminium (CAS 7429-90-5)

Carbon (CAS 1333-86-4)

Copper (CAS 7440-50-8)

Nickel (CAS 7440-02-0)

## **16. Other information, including date of preparation or last revision**

### **HMIS® ratings**

Health: 0

Flammability: 1

Physical hazard: 0

### **NFPA ratings**

Health: 0

Flammability: 1

Instability: 0

### **Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available.

### **Issue date**

01-02-2019