MATERIAL SAFETY DATA SHEET
Trade name: LiFePO4 Powder
Revised June, 2010

Section 1 Chemical Product and Company Identification

Product Name: LiFePO4 Powder for Li-ion battery Cathode

Manufacturer: MTI Corporation
860 S. 19th Street, Richmond
CA 94804
Telephone: 510-525-3070
Fax: 510-525-4705

Section 2 Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Item</th>
<th>standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particle size</td>
<td></td>
</tr>
<tr>
<td>D10(μm)</td>
<td>&gt;1</td>
</tr>
<tr>
<td>D50(μm)</td>
<td>2.5-5.0</td>
</tr>
<tr>
<td>D90(μm)</td>
<td>&lt;15</td>
</tr>
<tr>
<td>Dmax(μm)</td>
<td>&lt;25</td>
</tr>
<tr>
<td>Tap density(g/cc)</td>
<td>&gt;0.8</td>
</tr>
<tr>
<td>Specific Area (m2/g)</td>
<td>&lt;16</td>
</tr>
<tr>
<td>Moisture (%)</td>
<td>≤0.08</td>
</tr>
</tbody>
</table>

Chemical Composition

<table>
<thead>
<tr>
<th>Item</th>
<th>standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fe(%)</td>
<td>32.5-34.5</td>
</tr>
<tr>
<td>Li(%)</td>
<td>4.0-4.5</td>
</tr>
<tr>
<td>pH</td>
<td>8.0-11.0</td>
</tr>
<tr>
<td>Fe(%)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>K(%)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Na(%)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Ca(%)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>SO4(%)</td>
<td>&lt;0.6</td>
</tr>
</tbody>
</table>

Electric-chemical Properties

- Capacity at 1C discharging first cycle
- Capacity at Cycle 100 times
- Capacity at Cycle 1000times

- >125mAh/g
- >95%  
- >90%

Section 3 Hazards Identification

The LiFePO4 is not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there’s risk of rupture, fire, heat, leakage of internal components, which could cause casualty loss. Abuses include but not limited to the following cases: charged for a long time, short circuited, put into fire, whacked with hard object, punctured with acute object, crushed, and broken.

Section 4 First-aid Measures

The LiFePO4 is not hazardous with eye and skin contact under normal circumstance. In case
of fire or rupture, internal hazardous substance leaking and hazardous substance formed, following measures should be taken if body parts contact with these substance:
Eye: Check for and remove any contact lenses. Immediately flush with plenty of clean water for at least 15 minutes, seek medical assistance;
Skin: Immediately flush with plenty of clean water for 15 minutes; seek medical assistance if severe;
Inhalation: If inhaled, remove to fresh air immediately, seek medical assistance, and ventilate the contaminated area;
Ingestion: Rinse mouth with clean water immediately, induce vomit under the direction of expert, and seek medical assistance.

**Section 5 Fire-fighting Measures**
Extinguish with water, dry powder extinguishers, sands, earth. Combustion products and decomposed products by contact of water or air with internal substance include: carbon monoxide, carbon dioxide, hydrogen fluoride, phosphorus fluoride.

**Section 6 Handling and Storage**
Don’t handle and store LiFePO4 with metalwork. Stored and used far away from heat, sparks, open flame, or other ignition sources, and under room temperature (<30°C) in ventilating and dehumidifying environments.

**Section 7 Exposure Controls/Personal Protection**
There is no need for protect under normal conditions. In engineering aspect, ventilation equipment should be installed. Gas mask, blinkers, gloves enduring chemical erosion and exposure suit are required when dealing with fire and leakage.

**Section 8 Stability and Reactivity**
LiFePO4 is safe under normal conditions. The following substance might appear after catching fire or leakage: organic carbonate, hydrogen fluoride, carbon monoxide, carbon dioxide, phosphorus fluoride.

**Section 9 Toxicological Information**
LiFePO4 is not hazardous when used properly.
Hydrogen fluoride:
Extremely toxic. May be fatal if inhaled or ingested. Readily absorbed through the skin - skin contact may be fatal. Possible mutagen. LCLo: 50 ppm/30m (human beings), LC50: 1276 ppm/1h (rats).

Section 10 Ecological Information
There is no influence to ecology and environment when used properly.

Section 11 Transport Information
Not regulated

Section 12 Regulatory Information
There is no regulation on lithium batteries management.

Section 13 Other Information
This information comes from reliable sources, but no warranty is made to the completeness and accuracy of information contained. MTI Corporation doesn’t assume responsibility for any damage or loss because of misuse of LiFePO4.