Material Safety Data Sheet

MSDS Name: Lithium-ion Polymer Battery
Document No: YK.MSDS.2010.12

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: Lithium-ion Polymer Battery
Company Identification: YOKU ENERGY (ZHANGZHOU) CO., LTD.
Address: YOKU Industrial Zone, Nanjing, Zhangzhou, Fujian
Model: 056066/2100mAh
Voltage: 3.7V
Energy density: 392.4Wh/L
For Emergency: CHEMTREC Day or Night
Domestic North America: 800-424-9300
International Call: 703-527-3887
YOKU ENERGY (ZHANGZHOU) CO., LTD. Call: 0596-7666111

2. COMPOSITION / INFORMATION ON INGREDIENTS

The Lithium-ion battery is hermetically sealed; among its components, the following ones could potentially be hazardous upon release.

Ingredient	Concentration	CAS No.	EINECS No.
Lithium Cobaltite($LiCoO_2$)	25～30%	12190-79-3	235-362-0
Graphite Power	10～15%	7440-44-0	231-153-3
Copper Foil	15～20%	7440-50-8	231-259-6
Aluminum Foil	4～6%	7429-90-5	231-072-3
$LiPF_6$	3～5%	21324-40-3	244-334-7
Ethylene glycol carbonate	10～15%	96-49-1	202-510-0
PP or PE	15～20%	/	/

3. HAZARDS IDENTIFICATION

Classification: Carcinogenic Category 3R40, Xn, sensitizing R43
Most important hazards: There's limited evidence of a carcinogenic effect. There are possible risks of irreversible effects. It may cause sensitization by skin contact.
Further information: The sealed lithium-ion battery is not hazardous when used according to recommendations. Under normal conditions of use, the integrity of the battery's package and security vent are maintained. The ingredients are not expected to pose a significant risk to man or the environment. The classification above is based on the contents being considered as a preparation in accordance with Directive 1999/45/EC.

4. FIRST AID MEASURES

General advice
Show this safety data sheet to the doctor in attendance.
The information below refers to exposure to the ingredients.
Inhalation
Immediate medical attention is required. Move to fresh air. If symptoms persist, call a physician.
Skin contact
Immediate medical attention is required. Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. If skin irritation persists, call a physician.
Eye contact
Immediate medical attention is required. Remove contact lenses. Rinse immediately with plenty of water for at least 15

minutes.

Ingestion

Immediate medical attention is required. Gently wipe or rinse the inside of the mouth with water. Give small amounts of water to drink. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Centre immediately.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Foam dry powder, carbon dioxide (CO2), sand.

Extinguishing media which must not be used for safety reasons

Water, water spray

Specific hazards

There's risk of receptacle bursting.

Special protective equipment for firefighters

In the event of fire, wear self contained breathing apparatus. Wear personal protective equipment.

Hazardous decomposition products

Lithium compounds, carbon oxides, hydrogen fluoride

6. ACCIDENTAL RELEASE MEASURES

The information below refers to exposure to the ingredients.

Personal precautions

Use personal protective equipment. Avoid contact with skin and eyes.

Environmental precautions

Prevent further leakage or spillage if safe to do so.

Do not allow material to contaminate ground water system.

To avoid risks to man and the environment, comply with the instructions for use.

Methods for cleaning up

Pick up and transfer to properly labeled containers. Dispose of in accordance with local regulations.

7. HANDLING AND STORAGE

Handling

Technical measures/Precautions

No special technical protective measures required.

Safe handling advice

Avoid contact with skin and eyes. Use
personal protective equipment.

Follow the instructions for use issued by the producer.

Storage

Technical measures/Storage conditions

Keep in a dry, cool and well-ventilated place**,** preferably in the temperature range of +5 to +25°C at 65%(+-5%) relative humidity.

Keep away from heat and sources of ignition. Keep away from water.

Ensure battery terminals are protected during storage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls

Engineering measures

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Not required under normal use.

The information below refers to exposure to the ingredients.

Respiratory protection

Effective dust mask.

Hand protection

Neoprene gloves (EN 374).

Eye protection

Safety glasses with side-shields conforming to EN166

Skin and body protection

Boots, apron, long sleeved clothing.

Hygiene measures

General industrial hygiene practice.

Environmental exposure controls

The information below refers to exposure to the ingredients

Prevent product from entering drains.

Do not allow material to contaminate ground water system.

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

Form battery (sealed unit) **Color:** silvery **Odor:** odorless

Important Health Safety and Environmental Information

Not applicable

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions.

Hazardous polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Keep away from heat and sources of ignition.

Materials to avoid

Exposure to moisture.

Hazardous decomposition products

Lithium compounds, carbon oxides, hydrogen fluoride

11. TOXICOLOGICAL INFORMATION

The information below refers to exposure to the ingredients.

Local effects

May cause eye/skin irritation. May cause irritation of respiratory tract.

Long term toxicity

No data available. Avoid repeated exposure.

Specific effects

May cause sensitization by inhalation and skin contact. Limited evidence of a carcinogenic effect.

12. ECOLOGICAL INFORMATION

If used as directed and if the integrity of the battery's package and security vent are maintained, the ingredients are not expected to pose a significant risk to the environment.

Mobility

No data available.

Persistence and degradability

Not readily biodegradable.

Eco-toxicity effects

No data available.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products

Dispose of in accordance with local regulations. It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations. It should not be released into the environment.

Contaminated packaging

Not applicable.

Further information

Never incinerate Li-Ion batteries.

Never dispose Li-Ion batteries as landfill.

14. TRANSPORT INFORMATION

In airfreight, sealed Lithium-ion batteries are considered as "Lithium Batteries – Not Restricted", when they can meet the requirements of PI965 of IATA Dangerous Goods Regulations (UN3480).

In sea-freight, sealed lithium-ion batteries are considered as "Lithium Batteries – Not Restricted", when they can meet the requirements of IMDG of IMO Dangerous Goods Regulations (UN3480).

The model is 056066/2100mAh. The voltage is 3.7V. The energy density is 392.4Wh/L. It includes 1 cell. It is 7.77wh.The battery doesn't exceed 20wh. So this battery doesn't belong to class 9 with reference to IATA, 2010 Dangerous Goods Regulations, 51st edition. It complies with the necessary testing requirements under the UN Manual of Tests and Criteria, Part Ⅲ, sub-section 38.3. It complies with Section Ⅱ of PI965.

For more information, please refer to the newest UN Manual of Tests and Criteria, Part Ⅲ, sub-section 38.3 Lithium Batteries, IATA Dangerous Goods Regulations, UN Recommendations on the Transport of Dangerous Goods Model Regulations, International Maritime Dangerous Goods (IMDG) code, Regulations concerning the Intl Transport of Dangerous Goods by Rail (RID) and Agreement on Dangerous Goods by Road (ADR). It is especially important to ensure that batteries are packed in such a way to prevent short circuits.

Reported by:

Company Name:YOKU ENERGY (ZHANGZHOU) CO.,LTD Date: 2010-2-26