



## Shenzhen Toby Technology Co., Ltd.

10/F., A Block, Jiada R & D Bldg., No.5 Songpingshan Road,  
Science & Technology Park, Nanshan District, Shenzhen, China

Tel: (86) 755-26509301/02 Fax: (86) 755-26509195 Http: //www.tongbiao.com

# MATERIAL SAFETY DATA SHEETS

### SAMPLE INFORMATION:

1. **Sample Description:** 18650 3000mAh Li-ion Battery
2. **Sample Model:** BRC 18650
3. **Sample Quantity:** 30 PCS
4. **Manufacturer:** Shenzhen Batterycom Battery Co., Ltd.
5. **Manufacturer Address:** #0 Building, Hi-tech Park, Shasi Village, Shajing Town, Shenzhen, Guangdong, China

### CLIENT INFORMATION

1. **Applicant:** Shenzhen Winner Bros Import & Export Co., Ltd.
2. **Applicant Address:** Rm 813, Moi Art Trading Plaza, No. 245 Busha Rd Buji, Longgang District, Shenzhen, Guangdong, China
3. **Applicant Post Code:** 518112

### TEST INFORMATION:

1. **Applicant No:** ----
2. **Test Items and Request:** MATERIAL SAFETY DATA SHEETS
3. **Date of Receipt:** Sep. 18, 2013
4. **Date of Test:** Sep. 18, 2013-Oct. 18, 2013

### REMARKS:

1. The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.
2. **Sample State:** Solid
3. **Sample Package:** Intact
4. **Ambient Condition During Testing:** 20 °C, 45% RH.

Signed for Shenzhen TOBY

Justin Zhang  
Manager



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### Section 1 - Identification of the substance /preparation and of the company/undertaking

Identification of the preparation: Li-ion Battery

Company Identification: Shenzhen Winner Bros Import & Export Co., Ltd.

Company Address: Rm 813, Moi Art Trading Plaza, No. 245 Busha Rd Buji, Longgang District, Shenzhen, Guangdong, China

### Section 2 - Composition/ Information on Ingredients

Substance/Preparation : Preparation

Component/Substance	Percentage by weight	CAS#
Thionyl chloride	44%-45%	7719-09-7
Lithium Metal	3%-4%	7439-93-2
Aluminum Chloride	4%-5%	7446-70-0
Carbon	6%-7%	1333-86-4
Lithium Chloride	1%-2%	7447-41-8
Nickel	8%-9%	7440-02-0
Stainless steel	23%-24%	12597-68-1
Glass film	4%-5%	65997-17-3
Epoxy resin	2%-3%	/

### Section 3 - Hazards Identification

Do not short circuit, puncture, incinerate, crush, immerse, force discharge or expose to temperatures above the declared operating temperature range of the product.

#### HEALTH HAZARDS:

No hazard exists under normal use. Can cause thermal and chemical burns upon contact with the skin.

#### ENVIRONMENT HAZARDS :

Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.

### Section 4 - First Aid Measures

#### SKIN AND EYES:

In the event that battery ruptures, flush with copious quantities of flowing lukewarm water for a minimum of 15 minutes. Get immediate medical attention for



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eyes. Wash skin with soap and water.

### **INHALATION:**

If vapors or fumes from vented or leaking battery are irritating to respiratory tract, move to fresh air. Seek medical attention immediately.

### **INGESTION:**

Ingestion of a battery can be harmful. Call The National Capital Poison Control Center or your local Poison Control Center, day or night – for advice and follow-up.

### **Section 5 – Fire-Fighting Measures**

**Combustible:** Not applicable

#### **Special fire-fighting Procedures:**

As with any fire, wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition product.

#### **Hazardous thermal (de) composition products:**

Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.

**Emergency treatment:** Use water, foam or dry powder, as appropriate.

### **Section 6 – Accidental Release Measures**

#### **PROCEDURES TO CONTAIN AND CLEAN UP LEAKS OR SPILLS:**

In the event of a battery rupture, prevent skin contact and collect all released material in a plastic lined metal container.

#### **REPORTING PROCEDURE:**

Report all spills in accordance with Federal, State and Local reporting requirements.

#### **WASTE DISPOSAL METHOD:**

Earth or sand should be used to absorb the exudation, seal leaking battery and earth in a heavy duty polythene bag and dispose of as special waste in accordance with local regulations.

### **Section 7 – Handling and Storage**

#### **HANDLING PRECAUTIONS:**

Do not short circuit or expose to temperatures above the temperature rating of the battery.

Do not recharge, over-discharge, force discharge, immerse, puncture or crush.

#### **STORAGE:**

Store in a cool place but prevent condensation on cells and batteries. Elevated temperatures can result in shortened battery life and degrade performance. Do not store batteries in high humidity environments for long periods of times.



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Batteries 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

#### RESPIRATORY PROTECTION:

Wear a niosh approved self contained breathing apparatus in the pressure demand mode, or a fullface supplied air respirator.

#### VENTILATION:

Mechanical ventilation and / or local exhaust, sufficient in pattern and volume, to meet tlv requirements

#### PROTECTIVE GLOVES:

Use polyethylene or nitrile gloves if frequent skin contact is likely.

#### EYE PROTECTION:

Safety glasses with splash guards or side shielding recommended.

#### OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Wear impervious clothing if bodily exposure is anticipated.

#### WORK / HYGIENIC PRACTICES:

Do not wear contact lenses. Wash contaminated clothing before reuse. Wear protective safety equipment as necessary to minimize contact. Wash hands with soap and water.

### Section 9 – Physical and Chemical Properties

Appearance:	square	Nominal voltage	3.7V
Smell:	No data	PH	No data
Solubility:	No data	Melting Point	No data
Flash point:	No data	Explosive	No data
Specific heat:	No data	Flammability	No data

### Section 10 – Stability and Reactivity

**Stability:** Product is stable under normal storage and handling conditions.

**Conditions to avoid:** High temperatures or incinerate. Deform, mutilate, crush, Pierce, short circuit. expose over a long period to humid conditions

**Materials to avoid:** Oxidizing agents, alkalis, water.

**Hazardous reactions:** Lithium metal reacts with water to produce highly flammable gasses.



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### Section 11 - Toxicological Information

**Acute Toxicity:**

Inhalation : Lung irritant  
Ingestion : Poisoning if swallowed  
Eye Contact : Eye irritant  
Skin Contact : Skin irritant  
Chronic Toxicity : No data available  
Sensitization : No data available  
Mutagenicity : No data available  
Carcinogenicity : No data available  
Reproductive Toxicity: No data available  
Other : No data available

### Section 12 - Ecological Information

Ecotoxicity: No data available.  
Environmental Fate: No data available.  
Environmental Degradation: No data available.  
Soil Absorption/Mobility: slowly bio-degradable

### Section 13 - Disposal Considerations

**Waste Nature:**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste

**Recovery and reuse:**

Use standard landfill methods consistent with applicable Federal, State, Provincial and local laws.

### Section 14 - Transport Information

Not to a hazard material or hazard goods for transportation.

Separate, nickel metal hydride 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. The container must be handled carefully. Do not give shocks that result in a mark of hitting in cell. Please refer to section 7-HANDLING AND SHTORAGE.

**Transport Fashion:** by road, by air, by ship

1. The Polymer Lithium-ion Battery according to Section 2 of NEW PACKING INSTRUCTION 965 of IATA DGR 52<sup>th</sup> Edition for transportation.



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2. Each package had labeled with a Polymer Lithium-ion Battery handling label.
3. The following information is provided for domestic and international transport.

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

**UN number:** UN 3480

**Shipping name:** Li-ion Battery

**Packing group:** II

**Hazard classification:** Class 9

**Marine pollutant:** No

**ADR Class:** Class 9

### Section 15 - Regulatory Information

#### Risk Phrases:

R 14/15 Reacts violently with water liberating extremely flammable gases.

R21 harmful in contact with skin

R22 harmful if swallowed

R35 causes severe burns

R41 risk of serious damage to the eye

Safety advises

S2 keep out of reach from children

S8 keep away from moisture

S24 avoid contact with skin

S26 in case of contact with eyes, rinse immediately with plenty of water and seek medical attention

### Section 16 - Other Information

Date: Oct.18.2013

Department: Quality department.

Data Audit Units: Shenzhen Toby Technology Co., Ltd.

Disclaimer: The information in this Material Safety Data Sheet (MSDS) was obtained from sources

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\*\*\*\*\* (END OF REPORT) \*\*\*\*\*