

# **Material Safety Data Sheet for LSE50-002**

**March, 2010**  
**GS Yuasa Technology Ltd.**

## 1 . PRODUCT IDENTIFICATION

GYT P/N : LSE50-002  
Common Name : Lithium-ion Secondary Cell  
Rated Capacity : 50Ah  
Nominal Voltage : 3.7V  
Chemical System : Lithium Cobalt Dioxide / Organic Electrolyte / Carbon

### Emergency Contact

Company : GS Yuasa Technology Ltd.  
Large-scale Lithium-ion Battery Engineering Dept.  
Address : 1 Inobanbacho , Nishinosho , Kisshoin , Minami-ku , Kyoto Pref.,  
601-8520 Japan  
Phone : +81-75-312-0043 (office)  
Fax Number : +81-75-312-0283 (office)  
Emergency contact : CHEMTREC +1-800-424-9300

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## 2 . HAZARDOUS INGREDIENTS

Important Note : The cell should not be opened or burned, since the following ingredients are contained within the cell.  
Positive Electrode : Lithium Cobalt Dioxide (active material)  
Polyvinylidene Fluoride (binder)  
Carbon (conductor)  
Negative Electrode : Carbon (active material)  
Polyvinylidene Fluoride (binder)  
Electrolyte : Organic Solvent (mixture of alkylcarbonate solvents)  
Lithium hexafluorophosphate (Li salt)  
Others : No heavy metals such as mercury, cadmium, lead and chromium.

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## 3 . PHYSICAL PROPERTIES

### Lithium-Cobalt Dioxide

Melting Point : Above 1,000 degrees C  
Vapor Pressure : Effectively Zero at 20 degrees C  
Appearance & Odor : Black Powder, Odorless

Electrolyte

Appearance & Odor : Colorless Liquid  
Density : 1.223 at 20 degrees C  
Boiling point : 118 degrees C  
Melting point : Below -20 degrees C  
Vapor Pressure : 2.7 kPa (20 mmHg) at 20 degrees C  
Flash point : 27.9 degrees C

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#### 4 . FIRE and EXPLOSION

Lithium Cobalt Dioxide

Not Flammable material.

Electrolyte

Flammable. HF and POF<sub>3</sub> gases may be formed in contact with moisture.

Fire extinguishing materials: Spray water, dry chemical, and carbon dioxide.

NOTE: Cool the cell completely, or the cell may cause re-ignition.

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#### 5 . FIRST AID PROCEDURE

Lithium Cobalt Dioxide

Skin contact : Wash off with soap and water.  
Eye contact : Flush off with plenty of water for about 15 minutes.  
Swallowed : Wash the stomach with large quantity of a dilute brine solution.

Electrolyte

Skin contact : Immediately wash thoroughly with soap and water.  
Eye contact : Immediately flush off with plenty of water for at least 15 minutes.  
Inhalation : Remove to fresh air. Get medical attention.  
Swallowed : Wash the stomach with large quantity of a dilute brine solution.  
Get medical attention.

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#### 6 . LEAK and DISPOSAL PROCEDURE

Lithium Cobalt Dioxide

Wear dust protector to avoid inhalation. Wash the area thoroughly after the material is picked up. Dispose of clean-up water properly.

Waste Disposal Method : Follow state and local regulations

### Electrolyte

Remove all sources of ignition. Wear suitable protector such as self-contained breathing apparatus or organic canister mask, safety goggles and gloves. Absorb it using absorbent and inert material, and seal it up in a suitable container. Burn it in chemical incinerator equipment.

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## 7 . SPECIAL HANDLING INFORMATION

Storage: Keep in a cool, dry, ventilated area. Protect against physical damage. Keep away from heat, sparks and flames (combustible electrolyte). To prevent short-circuit, do not store the cell together with a metal plate, a metal bar and a material covered with metal.

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## 8 . TRANSPORT INFORMATION

LSE50-002 is confirmed to meet the criteria for assignment to Class 9 on the basis of tests carried out in accordance with the United Nations Recommendations on the Transportation of Dangerous Goods: Manual of Tests and Criteria (UN Document ST/SG/AC.10/27)

United Nations	Hazard Class	: 9
	UN/ID	: 3480
Water, IMO	Hazard Class	: 9
	Packing Group	: II
Air, IATA	Hazard Class	: 9
	Packing Group	: II