

# Material Safety Data Sheet

## **Company Identification**

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## **Product Identification**

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**Product name:** Lithium-Ion Cells.

**Chemistry System:** Lithium Cobalt Oxide/Electrolyte/Carbon

**Designated for Recharge:** Yes

## **Cautionary Announcement**

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**Caution:**Be ware of the risk of fire, explosion or burns. Do not short circuit the (+) and (-) terminals with other metals .Do not disassemble or modify the battery. Do not solder a battery directly. Keep away from fire or open flam.

## **Hazardous Components**

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### **Approximate Percent of Total weight**

**Lithium Cobalt Oxide**----- 40%

**Carbon**----- 20%

**Electrolyte** ----- 5-10%

## **Physical and Chemical Properties**

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Physical Properties  LiCoO<sub>2</sub> is a black odorless powder

C is a black odorless powder

Organic solvent is a colorless or light yellow liquid

Chemical Properties  N/A

## **Fire and Explosion Data**

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**Extinguishing Media:** Water, carbon dioxide, dry chemical powder and foam are most effective means to extinguish a battery fire.

**Fire Fighting Procedure:**

1. Put on fully protective gears, including self-contained breathing apparatus, goggles, fireproofing jacket and glove.
2. Use dry chemical type fire extinguisher or water to quench the fire.

**Unusual Fire and Explosion Hazards:** Exposing battery or cell to excessive heat, fire or over voltage condition may flame or leak potentially hazardous organic vapors and product hazardous decomposition products. Damaged or opened cells and batteries can result in rapid heating and the release of flammable vapors.

## Storage Precautions

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- Fix positive and negative terminals properly to avoid short circuit.
- Store in cold and well-ventilated area for preventing the exposedness from direct sunlight or other heating sources. Elevated temperatures can result in reduced battery service life.

## First Aid Information

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**Skin Contact:** Wash affected area with copious amount of water.

**Eye Contact:** Flush eyes with water for at least 15 minutes.

**Inhalation:** Remove to fresh air and give artificial respiration.

**Caution:** If the irritation persists, seek medical assistance at once.

## Handling and Use Precautions

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**Charging/discharging:** Cells and batteries are designed to be rechargeable. However, abnormal charging may cause batteries to flame, and abnormal discharging may result in damaging batteries. Use approved chargers and procedure only.

**Nominal Voltage:** 3.7V

**Cut off voltage:** 2.75V

**Standard charging:** constant current 0.5C charge to 4.2V then constant voltage 4.2V until the charge current goes down to below 0.02C

**Battery Disassemble:** Do not disassemble a battery in any case. If a battery was unintentionally crushed or damaged, thus releasing its contents, rubber gloves must be used to handle all battery components. Avoid inhalation of any vapors that may be emitted.

**Battery Short circuit:** The battery is an energy source that converts electric power into the chemical form of energy. Therefore, short circuit the battery may cause the chemical reaction to occur too intensively and provide an ignition source.

### Mixed Batteries and Types

Do not assemble batteries with series or parallel connection, and the use of old and new cells of varying capacity or different electrochemical battery systems should be avoided.

## Disposal Procedure

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Lithium cells and batteries are exempted from hazardous waste disposal standards under the Universal Waste Regulations; therefore, it is advisable to consult with local, state or federal authorities as disposal regulations may vary dependent on location.

## Transportation

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Cylindrical lithium ion batteries comply with applicable shipping regulations as prescribed by industry. However for the concern of the safety issue, batteries should be packed properly to prevent short circuit.

## **Disclaimer**

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