

# SAFETY DATA SHEET

Product Name: Lithium-Ion Battery

Issue Date: 09-21-2017

## SECTION 1- Chemical Product and Company Identification

**PRODUCT NAME:** Li-ion Battery

**APPLICATIONS:** For Stock No. 90101 RECHARGEABLE LED PENLIGHT

**SUPPLIER:** Draper Tools Ltd  
Hursley Road  
Chandlers Ford  
Eastleigh  
Hampshire  
SO53 1YF

Draper Helpline +44 (0) 2380 494344  
Opening hours 8:30-17:00 Monday – Friday.

## SECTION2 HAZARDS IDENTIFICATION

### Hazards Identification:

The battery has passed the test items of UN Model Regulations, Manual of Test and Criteria Section UN 38.3.

### Emergency Overview:

Caution: Avoid contact and inhalation the electrolyte contained inside the battery.

## SECTION3 INFORMATION ON INGREDIENTS

Product name: ICR18650 3.7V 2200mAh 8.14Wh Li-ion Battery

Ingredient	Concentration	CAS No.	EC No.
Lithium cobalt oxide	25-35%	12190-79-3	235-362-0
Graphite	15-20%	7782-42-5	231-955-3
Aluminium	21-23%	7429-90-5	231-072-3
Electrolyte	10-15%	623-53-0/21324-40-3	613-014-2/244-334-7
Copper	10-11%	7440-50-8	231-159-6
Polyvinylidene fluoride	1-5%	24937-79-9	607-458-6
Acetylene black	0.5-3%	1333-86-4	215-609-9

## **SECTION4 FIRST-AID MEASURES**

### **Skin Exposure:**

If the internal battery materials of an opened battery cell come into contact with the skin, immediately flush with plenty of water.

### **Eye Exposure:**

In case of the internal battery materials in contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

### **Inhalation Exposure:**

If inhaled the internal materials of battery, remove immediately to fresh air and seek medical attention.

### **Oral Exposure:**

If swallowed the internal materials of battery, do not induce vomiting. Seek immediate medical attention.

## **SECTION5 FIRE FIGHTING MEASURES**

### **Extinguishing Media:**

Suitable: Dry chemical, Sandy soil, Carbon dioxide or appropriate foam.

### **Firefighting:**

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific hazards: Emit toxic fumes under fire conditions.

## **SECTION6 ACCIDENTAL RELEASE MEASURES**

### **Procedure of Personal Precaution:**

If batteries show signs of leaking, avoid skin or eye contact with the material leaking from the battery. Use chemical resistant rubber gloves and non-flammable absorbent materials for clean up. Mix with inert material (e.g. dry sand, vermiculite) and transfer to sealed container for disposal.

## **SECTION7 HANDLING AND STORAGE**

### **Handling:**

Keep away from ignition sources, heat and flame. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Avoid mechanical or electrical abuse. More than a momentary short circuit will generally reduce the battery service life. Avoid reversing battery polarity within the battery assembly. In case of a battery unintentionally be crushed, rubber gloves must be used to handle all battery components. Avoid contact with eyes, skin. Avoid inhalation. No smoking at working site. Materials to Avoid: Strong oxidizing agents, Corrosives.

### **Storage:**

Store in a cool, well-ventilated area. Keep away from ignition sources, heat and flame. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Materials to Avoid: Strong oxidizing agents, Corrosives.

## **SECTION8 EXPOSURE CONTROL/PPE**

### **Engineering Controls:**

Use ventilation equipment if available. Safety shower and eye bath.

### **Personal Protective Equipment:**

Respiratory System: Not necessary under conditions of normal use.

Eyes: Not necessary under conditions of normal use.

Clothing: Wear appropriate protective clothing.

Hand: Safety gloves.

### **Other Protect:**

No smoking, drinking and eating at working site. Wash thoroughly after handling.

## **SECTION9 PHYSICAL/CHEMICAL PROPERTIES**

**Appearance:** Blue cylinder plastics film shell

**Odor:** Odorless

**Melting Point/°C:** >300°C

**Solubility:** Partial soluble in water

## **SECTION10 STABILITY AND REACTIVITY**

### **Stability:**

Stable under normal temperatures and pressures.

### **Conditions to Avoid:**

Avoid exposure to heat and open flame. Avoid mechanical or electrical abuse. Prevent short circuits.  
Prevent movement which could lead to short circuits.

### **Materials to Avoid:**

Strong oxidizing agents, Corrosives.

### **Hazardous Polymerization:**

Will not occur.

### **Hazardous Decomposition Products:**

Metal oxides, CO, CO<sub>2</sub>.

## **SECTION11 TOXICOLOGICAL INFORMATION**

### **Toxicity Data:**

Not available.

### **Irritation Data:**

The internal battery materials may cause irritation to eyes and skin.

## **SECTION12 ECOLOGICAL INFORMATION**

No data available.

## **SECTION13 DISPOSAL CONSIDERATION**

### **Appropriate Method of Disposal of Substance:**

Lithium batteries are best disposed of as a non-hazardous waste when fully or mostly discharged. Contact a licensed professional waste disposal service to dispose of large quantities materials.

## **SECTION14 TRANSPORT INFORMATION**

The product has passed the test items of UN Model Regulations, Manual of Test and Criteria Section UN 38.3 and UN Model Regulations, SP188, 1.2m drop test. Packaging gross weight is 4.1kg, which is less than 10 kg.

**IATA:** Proper Shipping Name: Lithium ion batteries  
UN Number: UN3480  
Hazard Class: 9  
The product shall meet the General Requirements and section IB of Packaging Instruction 965 (IATA DGR).

**IMO:** Shipping Name: not relevant  
Hazard Class: not relevant  
UN Number: not relevant  
Packing Group: not relevant.  
The product is not restricted to IMO IMDG Code according to special provision 188.

### SECTION15 REGULATORY INFORMATION

**ICAO:**

1. Unless be exempted according to ICAO TI, the lithium ion cell/batteries (UN 3480, PI 965) and lithium metal cell/batteries (UN 3090, PI 968) are forbidden for carriage on passenger aircraft.
2. Unless be approved according to ICAO TI, Lithium ion cells/batteries (UN 3480, PI 965) must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity.
3. A shipper is not permitted to offer for transport more than one (1) package prepared according to Section II of PI 965 and PI 968 in any single consignment. Not more than one (1) package prepared in accordance with Section II of PI 965 and PI 968 may be placed into an overpack.
4. Packages prepared according to Section II of PI 965 and PI 968 must be offered to the operator separately from other cargo and must not be loaded into a unit load device (ULD) before being offered to the operator.

### SECTION16 OTHER INFORMATION

**Date:**

2017-09-21

**Revision:**

0

**Other Information:**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising from using the above information.

