

# SAFETY DATA SHEET

Product Name: Rechargeable Li-ion Battery

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

<b>PRODUCT NAME:</b>	<b>Rechargeable Li-ion Battery</b>
	Ratings: 3.6V 2600mAh 9.36Wh
<b>APPLICATIONS:</b>	For Stock No.31095 HIGH PERFORMANCE FLASHLIGHT
<b>SUPPLIER:</b>	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. <a href="http://www.drapertools.com">www.drapertools.com</a>

## SECTION 2: Hazards identification

Explosive Risk	This article does not belong to the explosion dangerous goods .
Flammable Risk	This article does not belong to the flammable material.
Oxidation Risk	This article does not belong to the oxidation of dangerous goods.
Toxic Risk	This article does not belong to the toxic dangerous goods .
Radioactive Risk	This article does not belong to the radiation of dangerous goods .
Mordant Risk	This article does not belong to the corrosion of dangerous goods.
Other Risk	This article is Li-ion Battery, Watt hour rate 9.36Wh, which belong to the Lithium ion batteries (including lithium polymer batteries)

Danger sort: N/A

Routes of entry:

Eyes and Skin - When leaking the electrolyte solution contained in the battery irritates go ocular tissues and the skin.

Inhalation --Respiratory (and eye) irritation may occur if fumes are released due heat or an abundance of leaking batteries.

Ingestion--The ingestion of the battery can be harmful. Content of open battery can cause serious chemical burns of mouth, esophagus and gastrointestinal tract.

Health harm:

Exposure to leaking electrolyte from ruptured or leaking battery can cause.

Inhalation --Burns and irritation of the respiratory system, coughing wheezing, and shortness of breath.

Eyes --Redness, tearing, burns. The electrolyte is corrosive to all ocular tissues.

Skin --The electrolyte is corrosive and causes shin irritation and burns.

Ingestion -- The electrolyte solution cause tissue damage to throat and gastrointestinal track.

Environment harm: Not necessary under conditions of normal use.

Explosion danger: The battery may be explosive at high temperature (above 60°C) or exposing to the fire.

## SECTION 3: Composition/information on ingredients

Chemical Name	Chemical Formula	CAS NO.	Wt%
Nickel-cobalt-manganese lithium	LiNiCoMnO <sub>2</sub>	346417-97-8	36. 6
PVDF	(CH <sub>2</sub> -CF <sub>2</sub> ) <sub>n</sub>	24937-79-9	0. 4
CMC	C8H16NaO <sub>8</sub>	9000-11-7	0. 3

Acetylene black	C	1333-86-4	0.9
Styrene-butadiene rubber	(C8H8.C4H6)x	9003-55-8	0.4
PP	(C3H6)n	9003-07-0	0.7
Lithium hexafluorophosphate	LiF6P	21324-40-3	2.0
Ethylene carbonate	C3H4O3	96-49-1	2.0
Ethyl methyl carbonate	C4H8O3	623-53-0	1.0
Dimethyl carbonate	C3H6O3	616-38-6	6.8
Copper	Cu	7440-50-8	7.6
Aluminium	Al	7429-90-5	3.5
Nickel	N	7440-02-0	0.7
Iron	Fe	7439-89-6	17.3

## **SECTION 4: First aid measures**

Skin contact: Not anticipated. If the battery is leaking and the contained material contacts the skin, flush with copious amounts of clear water for at least 15 minutes.

Eye contact: Not anticipated. If the battery is leaking and the contained material contacts eyes, flush with copious amounts of clear water for at least 15 minutes. Get medical attention at once.

Inhalation: Not anticipated. If the battery is leaking, remove to fresh air. If irritation persists, consult a physician.

Ingestion: Not anticipated. If the battery is leaking and the contained material is ingested, rinse mouth and surrounding area with clear water at once. Consult a physician immediately for treatment.

## **SECTION 5: Firefighting measures**

5.1 Unusual Fire and Explosion Hazards: Battery may explode or leak potentially hazardous vapors subject to: exposed to excessive heat (above the maximum rated temperature as specified by the manufacturer) or fire, over-charged, short circuit, punctured and crushed.

5.2 Hazardous Combustion Products: Fire excessive heat, or over voltage conditions may produce hazardous decomposition products. Damaged batteries can result in rapid heating and the release of flammable vapors .

5.3 Extinguishing Media: Dry chemical type extinguishers are the most effective means to extinguish a battery fire, A CO2 extinguisher will also work effectively.

5.4 Fire Fighting Procedures: Use a positive pressure self-contained breathing apparatus if batteries are involved in a fire. Full protective clothing is necessary. During water application, caution is advised as burning pieces of flammable particles may be ejected from the fire.

## **SECTION 6: Accidental release measure**

The material contained within the battery would only be released under abusive conditions. In the event of battery rupture and leakage, collect all the released materials that are not or burning in an appropriate waste disposal container while wearing proper protective clothing and ventilate the area. Placed in approved container and disposed according to the local regulation.

## **SECTION 7: Handling and storage**

7.1.1 Batteries are designed to be recharged. However, improperly charging a battery may cause the battery to flame. When charging the battery, use dedicated chargers and follow the specified conditions.

7.1.2 Never disassemble or modify a battery.

7.1.3 Do not immerse, throw, and wet a battery in water.

7.1.4 Should a battery unintentionally be crushed, thus releasing its contents, rubber gloves must be used to handle all battery components. Avoid the inhalation of any vapors that may be emitted.

7.1.5 Short circuit causes heating. In addition, short circuit reduces the life of the battery and can lead to ignition of surrounding materials. Physical contact with to short-circuited battery can cause skin burn.

7.1.6 Avoid reversing the battery polarity, which can cause the battery to be damaged or flame.

7.1.7 In the event of skin or eye exposure to the electrolyte, refer to Section 4, First Aid Measures.

## 7.2 Storage

7.2.1 Batteries should be separated from other materials and stored in a non-combustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks. Do not place batteries near heating equipment, nor expose to direct sunlight for long periods.

7.2.2 Do not store batteries above 35°C or below -20°C. Store batteries in a cool (about 20±5°C) in a long time, dry and ventilated area that is subject to little temperature change. Elevated temperatures can result in reduced battery cycle life. Battery exposure to temperatures in excess of 60°C will result in the battery venting flammable liquid and gases.

7.2.3 Keep batteries in original package until use and do not jumble them.

## SECTION 8: Exposure controls/personal protection

8.1 Engineering Controls: Keep away from heat and open flame.

8.2 Ventilation: Not necessary under conditions of normal use. In case of abuse, use adequate mechanical ventilation (local exhaust) for the battery that vent gas or fumes.

8.3 Respiratory Protection: Not necessary under conditions of normal use. If battery is burning, leave the area immediately. During firefighting fireman should use self-contained breathing, full-face respiratory equipment. Fires may be fought but only from safe firefighting distance, evacuate all persons from the area of fire immediately.

8.4 Eye Protection: Not necessary under conditions of normal use. Use safety glasses with side shields if handling a leaking or ruptured battery.

8.5 Body Protection: Not necessary under conditions of normal use. Use rubber apron and protective working in case of handling a leaking or ruptured battery.

8.6 Others: Use good chemical hygiene practice. Wash hands thoroughly after cleaning-up a battery spill caused by leaking battery. No eating, drinking, or smoking in battery storage area.

## SECTION 9: Physical and chemical properties

Appearance: Cylindrical

State: Solid

Odor: N/A

PH: N/A

Vapor pressure: N/A

Boiling point: N/A

Solubility in water: Insoluble

Specific gravity N/A

Density: N/A

## SECTION 10: Stability and reactivity

Stability: Stable

Conditions to Avoid: Do not beat, throw into fire, disassemble, short circuit, immerse in water or overcharge, etc.

Hazardous Polymerization: WILL not occur.

Hazardous Decomposition Products: The battery may release irritative gas once the electrolyte leakage.

## SECTION 11: Toxicological information

11.1 The battery does not elicit toxicological properties during routine handling and use. If the battery is opened through misuse or damage, discard immediately. Internal components of cell are irritant and sensitization.

11.2 Irritancy: The electrolytes contained in this battery can irritate eyes with any contact. Prolonged contact with the skin or mucous membranes may cause irritation.

11.3 Sensitization: No information is available.

11.4 Teratogenicity: No information is available.

11.5 Carcinogenicity: No information is available.

11.6 Mutagenicity: No information is available.

11.7 Reproductive toxicity: No information is available.

## **SECTION 12: Ecological information**

12.1 When properly used and disposed, the battery does not present environmental hazard.

12.2 The battery does not contain mercury, cadmium, or lead.

12.3 Do not let internal components enter marine environment. Avoid releasing to water ways, wastewater or ground water.

## **SECTION 13: Disposal considerations**

13.1 Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in Federal, State or Local requirements of hazardous waste treatment and hazardous waste transportation.

13.2 The battery should be completely discharged prior to disposal and or the terminals taped or capped to prevent short circuit. When completely discharged it is not considered hazardous.

## **SECTION 14: Transport information**

14.1 According to PACKING INSTRUCTION 965~967 of IATA DGR 65th Edition for transportation, the special provision 188 of IMDG ( inc Amdt 41-22 ) . The batteries should be securely packed and protected against short-circuits. Examine whether the package of the containers is integrated and tighten closed before transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles. Don't put the goods together with oxidizer and chief food chemicals. The transport vehicle and ship should be cleaned and sterilized before transport. During transport, the vehicle should prevent exposure, rain a high temperature. For stopovers, the vehicle should be away from fire and heat sources. When transported by sea, the assemble place should keep away from bedroom and kitchen, and isolated from the engine room, power and fire source. Under the condition of Road Transportation, the driver should drive in accordance with regulated route, don't stop over in the residential area and congested area.

14.2 UN number

UN Number: 3480    UN Number: 3481

14.3 UN Proper shipping name

LITHIUM ION BATTERIES (including lithium ion polymer batteries) or LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT OR LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries) .

14.4 Packing Instruction (if applicable) 965 IB, 966 II, 967 II

14.5 Marine pollutant (Yes / No)

No

14.6 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

No information available

14.7 Special precautions

No information available

## **SECTION 15: Regulatory information**

15.1 The transport of rechargeable lithium-ion batteries regulated by the United Nations as detailed in the "model Regulations on the transport of dangerous Goods Ref. ST/SG/AC. 10/1 Revision 22 2021".

15.2 Defined by UN in the "Recommendations on the transport of Dangerous Goods Chapter

38.3 Manual of Tests and Criteria Ref. ST/SG/AC. 10/11 Rev. 7/Amend. 1 2021".

The Lithium-ion Cells and the battery Packs may or may not be assigned to the UN No.

3480 Class-9 that is restricted for transport.

## **SECTION 16: Other information**

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The composition information of the battery is provided by the commissioning party and their completeness and accuracy are guaranteed. Users should carefully read this document and use the battery according to the correct method.