SAFETY DATA SHEET

Product Name: Lithium-Ion Battery Issue Date: 28-03-2019

SECTION 1- Chemical Product and Company Identification

PRODUCT NAME: Rechargeable Li-ion Battery

APPLICATIONS: For Stock No.

11758 7W COB LED RECHARG. INSPECTION

11759 7W COB LED RECHARG. INSPECTION

11761 7W COB LED RECHARG. INSPECTION

11762 7W COB LED RECHARG. INSPECTION

11763 7W COB LED RECHARG. INSPECTION

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.

2. Hazards identification

Classification:This chemical is not considered hazardous by the 2012OSHA Hazard Communication Standard(29 CFR 1910.1200)This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard Communication Standard unless ruptured.The hazards indicated are for a ruptured battery.

Acute toxicity-Oral	category 4
Acute toxicity-Inhalation(Gases)	category 4
Acute toxicity-Inhalation(Dusts/Mists)	category 4
Skin corrosion/irritation	category 2

Serious eye damage/eye irrtation	category 2
Reproductive toxicity	category 1B
Specific target organ toxicity(repeated exposure)	category 2

Emergency Overview (including Signs and Symptoms, Route(s) of Entry, etc.)

Intact batteries present no specific hazards.

Acute Health Hazards (e.g., Inhalation, Eye Contact, Skin Contact, Ingestion, etc.):

Burning batteries: AVOID inhalation of toxic fumes. Burning batteries emit toxic fumes, which are irritating to the lungs.

Leaking batteries: AVOID exposure to leaking electrolyte, it can cause severe irritation and/or damage to the skin, mucous membrane or eyes.

Chronic Health Effects (e.g., Carcinogenicity, Teratology, Reproduction, Mutagenicity, etc.):

Cobalt: Suspected human carcinogenic agent.

Medical Conditions Generally Aggravated by Exposure: None.

Hazards not otherwise classified(HNOC):Not applicable

Unknown Toxicity:1.7% of the mixture consists of ingredient(s) of unknown toxicity.

Other information:Very toxic to aquatic life with long lasting effects.

Interactions with Other Chemicals:Use of alcoholic beverages may enhance toxic effects.

3. Composition/information on ingredients

INGREDIENTS	Approximate w/w	CAS NUMBER
Lithium Cobalt Oxide (LiCoO2)	30-33	12190-79-3
Carbon (Graphite)	15-20	7440-11-0
Linear and Cyclic Carbonic solvents	5-15	N/A
Electrolyte (LiPF6/EC/DMC/EMC)	1-3	21324-40-3 /96-49-1 /616-38-6 / 623-53-0
Aluminum	2-8	7429-90-5
Copper	5-10	7440-50-8
Hexafluoropropylene-Vinylidine-Fluoride Cop	1-3	9011-17-0
PP/PE/PET	0.1-4	
Steel,nickel and inert polymer	0.5-4	N/A
Carbon black and others	0-3	N/A

4. First-aid measures

Ingestion: If swallowed, obtain medical attention immediately.

Inhalation:If battery is burning, leave the area immediately. If exposed to fumes, seek medi cal attention promptly.

Eye Contact:Rinse eyes with water for 15 minutes and seek medical attention.

Skin Ccotact:

If battery electrolyte leaks on to the skin flush the affected area for at least 15 minutes with clean water. DO NOT attempt to neutralize. Seek medical attention promptly.

Ngestion: Drink milk/water and induce vomiting; seek medical attention.

5. Fire-fighting measures

Flammable Properties: N/A

Flashpoint: Method:
Autoignition Temperature:
Flammable Limits: N/A
Lower flammable limit: Upper flammable limit:
Hazardous Combustion Products: Burning batteries may emit acrid smoke irritating fumes, and toxic fumes of fluoride.
Extinguishing Media: Carbon dioxide (CO2) or dry chemical fire extinguisher, 10-B: C.
Fire Fighting Instructions:
Personnel: Fight the fire in a defensive mode, while exiting the area. When using a CO2 fire extinguisher, DO NOT re-enter the area until it has been thoroughly ventilated (i.e., purged) of the CO2 extinguishing agent.
Firefighters: Use a self-contained breathing apparatus (SCBA).

6. Accidental release measures

Small Spill: 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 absor bent materials for clean-up.
On Land: Place material into suitable containers and call local fire/police department.
In Water: If possible, remove from water and call local fire/police department.

7. Handling and storage

Handling: Recharge batteries IAW methods specified in applicable technical manuals.
DO NOT:
Overcharge this battery.
Abuse, mutilate or short circuit the battery.
Storage: Gain approval for storage areas from the Installation Fire Department. Store batteries in a cool (i.e., 130F), dry and well ventilated area.
DO NOT:
Store batteries in direct sunlight or under hot conditions.
Smoke and keep batteries away from open flame or heat.
Store batteries in the same stacks with hazardous materials.
Store batteries in office areas, or other areas where personnel congregate.
Work/Hygienic Practices: Thoroughly wash hands after cleaning-up a battery spill (i.e., leaking or venting batteries). NO eating, drinking or smoking in battery storage areas.

8. Exposure controls/personal protection

ENGINEERING CONTROLS
Keep away from heat and open flame.Store in a cool dry place.
PERSONAL PROTECTION
Respirator: Not required during normal operations.SCBA required in the event of a fire.
Eye/face protection: Not required beyond safety practices of employer.

Gloves: Not required for handling of cells.
Foot protection: Steel toed shoes recommended for large container handling.

9. Physical and chemical properties

Boiling Point @ 760 mm Hg (°C): NA
Vapor Pressure (mm Hg @ 25°C): NA
Vapor Density (Air = 1): NA
Density (grams/cc): NA
Percent Volatile by Volume (%): NA
Evaporation Rate (Butyl Acetate = 1): NA
Physical State: NA
Solubility in Water (% by Weight): NA
pH: NA
Appearance and Odor: geometric solid object

10. Stability and reactivity

Stable or unstable: Stable
Incompatibility (Materials to avoid) : NA
Hazardous decomposition products: NA
Decomposition temperature (0°F): NA
Hazardous polymerization: Will Not Occur
Condition to Avoid: Avoid electrical shorting

11. Toxicological information

This product does not elicit toxicological properties during routine handling and use.

Sensitization	Teratogenicity	Reproductive toxicity	Acute toxicity
NO	NO	NO	NO

This product does not contain any kinds of the following substances and halogen-type flame retardants including Chlorine and Bromide type harmful flame retardants which are listed in Appendix of TCO documents and relevant international ECO requirements:

Polybromated Biphenyls (PBB)
Polybromated Biphenyl Ethers (PBBE)
Polybromated Biphenyl Oxides (PBBO)
Polybromated Diphenylethers (PBDE)
Polychlorinated Biphenyl (PCB)
Polychloronated Diphenylethers (PCDE)
Tetrabromphisphenol A (TBBPA)
Asbestos, Antimonytrioxide, Dioxine

None of the following substances will be exposed, leaked, or emitted during transportation, storage or any operation and any temperature condition:

Chlorinated Fluorohydrocarbon (FCKW)
Acrylonitride
Styrol Phenol Benzol
Mercury of greater than 0.0001 wt% for alkaline battery
Mercury of greater than 0.0005 wt% for other battery
Lithium content of greater than 0.5g/battery cell Cadmium, lead, and other harmful heavy metal

This product does not contain mercury and lithium-metal.
Mercury content: <
Lithium-Ion content: <
If the cells are opened through misuse or damage, discard immediately.Internal components of cell are irritants and sensitizers.

12. Ecological information

Some materials within the cell are bioaccumulative.Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.

13. Disposal considerations

Polymer Lithium Ion rechargeable cells and batteries contain no toxic metals, only naturally occurring trace elements. Lithium Cells and batteries are exempted from hazardous waste 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.

14. Transport information

For the international transport of lithium batteries, they must comply with these regulations: the International Maritime Dangerous Goods (IMDG) Code by International Maritime Organization (IMO), Dangerous Goods Regulations (DGR) by International Air Transport Association (IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by International Civil Aviation Organization (ICAO). These regulations are based on the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria. Lithium batteries which meet the requirements of UN38.3 (UN Manual of Tests and Criteria, Part III, subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group II hazardous goods. As the published of the UN Recommendations on the Transport of Dangerous Goods, all these regulations have added some new contents to regulate the transport of lithium ion batteries. We regard to air transport, the following regulations are cited and considered:

1. For lithium ion batteries, UN ID number is 3480 /Trans port hazard ciass(es):9.
2. The International Air Transport Association(IATA) Dangerous Goods Regulations(60TH Edition 2019: complies with current IATA packing instruction of

PI965-967).

3. For transported by air, Lithium-ion Cells/Batteries shipped as Not Restricted Cargo: Must comply with section II of PI965- PI967; For cells, the Watt-hour rating should not be more than 20Wh; For batteries, the Watt-hour rating should not be more than 100Wh. Watt- hour rating must be marked on the outside of the battery case (marked by manufacturer). (Except those manufactured before 1 January 2009, which may be transported without this marking until 31 December 2014).

4. Each consignment must be accompanied with a document such as an air waybill with an indication. For those Lithium ion cells/ batteries contained in equipment, the equipment must be equipped with an effective means of preventing accidental activation.

5. Quantity per package shall not exceed 10kg.

6. Each package must be capable of withstanding a 1.2m drop test in any orientation without damage of cells or batteries contained therein.

7. Lithium batteries which meet the requirements of A154 could be transported by air, (A154 Lithium batteries identified by the manufacturer as being defective for safety reasons, or that have been damaged, that have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for transport.)

8. Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit.

9. Comply with SP188 of Imdg.

Mode of transport: to air, sea, railway, highway-based.

Manual of Test and Criteria (38.3 Lithium battery)		Test Results	Remark
No.	Test Item		
T1	Altitude Simulation	Pass	
T2	Thermal Test	Pass	
T3	Vibration	Pass	
T4	Shock	Pass	
T5	External Short Circuit	Pass	
T6	Impact	Pass	
T7	Overcharge	Pass	For Pack Only
T8	Forced Discharge	Pass	For Pack Only

15. Regulatory information

Non-hazardous

16. Other information

Revision Date : 2019-03-28

Revision Note : No information available