

SAFETY DATA SHEET

Issue Date: 13/06/2022 Version: 2

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

Product identifier

Product Name: Lithium-ion Battery
Model: 18650
Nominal Voltage: 3.7V
Rated Capacity: 1500mAh

Applications: For: Multifunction Screwdriver and Cutting Tool (19403)

Details of the supplier of the safety data sheet

Draper Tools Ltd
Hursley Road, Chandlers Ford, Eastleigh
Hampshire SO53 1YF
United Kingdom
www.drapertools.com

Emergency telephone number

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

SECTION 2: Hazards identification

Lithium-ion cells are not hazardous when used according to the instructions of the manufacturer under normal conditions. In case of abuse, there is a risk of rupture, fire, heat, or leakage of internal components, which could release hazardous materials.

Symptoms of Exposure

Skin contact

No effect under routine handling and use.

Skin absorption

No effect under routine handling and use.

Eye contact

No effect under routine handling and use.

Inhalation

No effect under routine handling and use.

Reported as Carcinogen

Not applicable

SECTION 3: Composition/information on ingredients

Ingredients	%	CAS Number
Lithium Nickel Oxide	16	12031-65-1
Lithium Cobaltate	6.4	12190-79-3
lithium manganate	9.6	12057-17-9
Anode active material Graphite	17	7782-42-5
LiPF6	2	21324-40-3
EC	4	96-49-1

EMC	7	623-53-0
PC	1	108-32-7
Nickel	2	7440-02-0
Aluminum	12	7429-90-5
Copper	8	7440-50-8
Carbon	2	7440-44-0
Polyvinylidene fluoride	4	24937-79-9
Polyethylene	3	9002-88-4
Polyethylene terephthalate	6	25038-59-9

Further information

For information purposes:

(*) Main ingredients: Lithium hexafluorophosphate, organic carbonates

Because of the cell structure the dangerous ingredients will not be available if used properly.

During charge process a lithium graphite intercalation phase is formed.

Mercury content: Hg < 0.1mg/kg

Cadmium content: Cd < 1mg/kg

Lead content: Pb < 10mg/kg

SECTION 4: First aid measures

Not a health hazard under normal use.

If exposure to internal materials within cell due to damaged outer casing, the following actions are recommended.

Inhalation

Leave area immediately and seek medical attention.

Eye Contact

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

Skin Contact

Wash area thoroughly with soap and water and seek medical attention.

Ingestion

If swallowed, obtain medical attention immediately.

SECTION 5: Firefighting measures

General Hazard

Cell is not flammable but internal organic material will burn if the cell is incinerated.

Combustion products include, but are not limited to hydrogen fluoride, carbon monoxide and carbon dioxide.

Extinguishing Media

Use extinguishing media suitable for the materials that are burning.

Special Firefighting Instructions

If possible, remove cell(s) from firefighting area.

If heated above 120°C, cell(s) can explode/vent.

Firefighting Equipment

Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

SECTION 6: Accidental release measure

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.

SECTION 7: Handling and storage**Handling**

No special protective clothing required for handling individual cells.

Storage

Store in cool, dry place.

SECTION 8: Exposure controls/personal protection**Engineering Controls**

Store in a cool dry place. Keep away from heat and open flame.

Personal Protective

Respirator: Not required during normal operations. SCBA required in the event of a fire.

Eye/face, Gloves, Foot protection:

Not required during normal operations. Not required for handling of cells.

Steel toed shoes recommended for large container handling.

SECTION 9: Physical and chemical properties**Appearance**

Form	Solid
Colour	Various
Odour	Odourless
pH	N/A
Flash Point	N/A
Lower explosion	N/A
Vapor Pressure	N/A
Density	N/A
Water Solubility	Insoluble
Ignition temperature	N/A

SECTION 10: Stability and reactivity**Reactivity**

None

Incompatibilities

None during normal operation.

Avoid exposure to heat, open flame, and corrosives.

Hazardous Decomposition Products

None during normal operating conditions. If cells are opened, hydrogen fluoride and carbon monoxide may be released.

Conditions To Avoid

Avoid exposure to heat and open flame. Do not puncture, crush or incinerate.

SECTION 11: Toxicological information

Cells are not hazardous when used properly. In case of fire or leakage combustion and decomposition products may cause irritation and toxicity to skin, eye and respiratory systems.

Toxicity data of some substance is listed:

Hydrogen fluoride:

Extremely toxic, May be fatal if inhaled or ingested. Readily absorbed through the skin contact may be fatal.
Possible mutagen. LCLO: 50 ppm/30m (human beings), LC50: 1276 ppm/1h rats).
Carbon and graphite:
Slightly hazards in case of skin contact (irritant), ingestion, inhalation, which will cause chronic damage to upper respiratory tract and cardiovascular system.
Copper:
Dust may cause respiratory irritation. LD50: 3.5 mg kg⁻¹(mouse).

SECTION 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.

SECTION 13: Disposal considerations

Recommended methods for safe and environmentally preferred disposal:

Product (waste from residues):

Do not throw out a used battery cell. Recycle it through the recycling company.

Contaminated packaging:

Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cell contaminates, dispose as industrial wastes subject to special control.

RCRA Waste Code:

No regulated. Dispose of according to all federal, state, and local regulations.

SECTION 14: Transport information

With regard to transport, the following regulations are cited and considered:

The International Civil Aviation Organization (ICAO) Technical Instructions, Packing Instruction 965, Section IB.

The International Air Transport Association (IATA) Dangerous Goods Regulations, Packing Instruction 965, Section IB (61st Edition).

The International Maritime Dangerous Goods (IMDG) Code (2018 Edition).

US Hazardous Materials Regulations 49 CFR (Code of Federal Regulations) Sections 173-185 Lithium batterie and cells.

The UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria 38.3 Lithium batteries, Rev.6.

The article is nor restricted to IMO IMDG code according to special provision 188(Amdt.39-18) (2018 Edition).

Hazard Classification:

The goods are complied with the requirements of Section IB of Packing Instructions 965 of 61st DGR Manual of IATA (2020 edition), Special provision 188 of IMDG CODE (Amdt. 39- 18) (2018 Edition), including the passing of the UN38.3 test.

Our products are properly classified, described, packaged, marked, and labelled, and are in proper condition for transportation according to all the applicable international and national governmental regulations, not limited to the above mentioned. We further certify that the enclosed products have been tested and fulfilled the requirements and conditions in accordance with UN Recommendations (T1 – T8) on the Transport of Dangerous Goods Model Regulations and the Manual of Testes and Criteria.

Test results of the UN Recommendation on the Transport of Dangerous Goods:

Manual of Test and Criteria (38.3 Lithium battery)		Test results	Remark
No.	Test items		
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 and single cell battery only
T8	Forced Discharge	Pass	

UN code: 3481

SECTION 15: Regulatory information

Dangerous Goods Regulations

Recommendations on the Transport of Dangerous Goods Model Regulations

International Maritime Dangerous Goods Code

Regulations Concerning Road Transportation of Dangerous Goods

Technical Instructions for the Safe Transport of Dangerous Goods

Classification and Code of Dangerous Goods

Occupational Safety and Health Act (OSHA)

Toxic Substance Control Act (TSCA)

Consumer Product Safety Act (CPSA)

Federal Environmental Pollution Control Act (FEPCA)

The Oil Pollution Act (OPA)

Superfund Amendments and Reauthorization Act Title III (302/311/312/313) (SARA)

Resource Conservation and Recovery Act (RCRA)

Safety Drinking Water Act (CWA)

California Proposition 65

Code of Federal Regulations (CFR)

In accordance with all Federal, State and local laws.

SECTION 16: Other information

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The information above is believed to be accurate and represents the best information currently available to us. However, 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 investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

*** End of SDS ***