Safety Data Sheet

Section 1 - Chemical Product and Company Identification

Chemical Product Identification

Name : Li-ion Polymer Battery

Details of the Supplier : Premier Farnell plc
150 Armley Road
Leeds
LS12 2QQ
+44 (0) 8701 202530

Emergency Telephone : +44 1865 407333

Section 2 - Hazards Identification

Emergency overview : This product is a battery. Intended use of the product should not result in exposure to the chemical substance. In case of rupture the below hazards exist.

Classification according to GHS

Acute toxicity, oral (4)
Skin corrosion/irritation (2)
Serious eye damage/eye irritation (2A)
Specific target organ toxicity, single exposure; Respiratory tract irritation (3)

Label elements

Hazard pictogram(s):

Signal word : Warning

Hazard statement(s):

H302 Harmful if swallowed
H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation

Precautionary statement(s):

Prevention:

P264 Wash skin and clothing thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves, protective clothing, eye protection, face protection.
P261 Avoid breathing dust, fume, gas, mist, vapours, spray.
P271 Use only outdoors or in a well-ventilated area.

Response:

P301 + P3121F SWALLOWED: Call a POISON CENTER if you feel unwell.
P330 Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty water.
P321 Specific treatment (See additional emergency instructions).
P333 + P313 If skin irritation or rash occurs: Get medical advice.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER, if you feel unwell.

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Send contents to approved waste treatment plants.

Other hazards

Physical and chemical hazards: See Section 10
Human health hazards: See Section 11
Environmental hazards: See Section 12

Section 3 - Composition/Information on Ingredients

Chemical characterization : Mixture

Chemical Composition	CAS No.	EC#	Weight(%)
Cobaltate, lithium	12190-79-3	235-362-0	40-42
Aluminium	7429-90-5	231-072-3	6-8
Carbon black	1333-86-4	215-609-9	18-21
Copper	7440-50-8	231-159-6	8-10
Phosphate(1-), hexafluoro-, lithium	21324-40-3	244-334-7	15-17
1 ,3-Dioxolan-2-one	96-49-1	202-510-0	0-1
1,2-Propanediolcyclic carbonate	108-32-7	203-572-1	0-1

Section 4 - First Aid Measures

Description of first aid measures

General information No special measures required.

After eye contact

Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.

After skin contact

Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

After inhalation

Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

After swallowing

Do not induce vomiting. Get medical attention.

Personal protective equipment for first-aid responders: No data available.
Most important symptoms/effects, acute and delayed: No data available.
Indication of immediate medical attention and special treatment needed: Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable extinguishing media:

Small Fire: Dry chemical, CO_2 or water spray. Large Fire: Dry chemical, CO_2, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material.

Unsuitable extinguishing media:

No data available.

Specific Hazards arising from the chemical:

Special hazards arising from the substance or mixture

Battery may burst and release hazardous decomposition products when exposed to a fire situation. Lithium ion batteries contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature(>150.C (302°F)), when damaged or abused (e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in close proximity.

Specific protective actions for fire-fighters:

Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6 - Accidental Release Measures

Personal precautions:

As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. Keep unauthorized personnel away. Stay upwind, uphill and/or upstream. Ventilate closed spaces before entering. Large Spill: Consider initial downwind evacuation for at least 100 meters (330 feet).

Protective equipment:

No data available.

Emergency procedures:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Absorb with earth, sand or other non-combustible material. Leaking batteries and contaminated absorbent material should be placed in metal containers.

Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Methods and materials for containment and cleaning up:

For all waste handing must refer to United Nations, National and Local Regulations for disposal.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Section 7 - Handling and Storage

Precautions for safe handling:

Avoid short circuiting the battery. Avoid mechanical damage of the battery. Do not open or disassemble. Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps.

Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well-ventilated place. Keep away from heat, avoiding the long time of sunlight.

Section 8 - Exposure Controls/Personal Protection

Control parameters

CAS No.	ACGIH	NIOSH	OSHA
12190-79-3	N/A	N/A	N/A
7429-90-5	TLV-TWA 1mg/m^3	REL-TWA 2mg/m^3 REL-TWA 5mg/m^3 REL-TWA 10mg/m^3	PEL-TWA 5mg/m^3 PEL-TWA 15mg/m^3
1333-86-4	TLV-TWA 3mg/m^3	REL-TWA 3.5mg/m^3	PEL-TWA 3.5mg/m^3
7440-50-8	TLV-TWA 0.2mg/m^3 TLV-TWA 1mg/m^3	REL-TWA 1mg/m^3 REL-TWA 0.1mg/m^3	PEL-TWA 0.1mg/m^3 PEL-TWA 1mg/m^3
21324-40-3	N/A	N/A	N/A
96-49-1	N/A	N/A	N/A
108-32-7	N/A	N/A	N/A

Appropriate engineering controls:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Personal Protective Equipment:

Respiratory protection : Wear suitable protective mask. For a large number of battery leakages, wear chemical protective clothing, including self-contained breathing apparatus.

Hand Protection : Wear appropriate protective gloves to reduce skin contact.

Eye Protection : Wear safety goggles or eye protection combined with respiratory protection.

Skin and Body Protection : Working environment required, wear suitable protective clothing to minimize contact with skin. The type of protective equipment must be according to the concentration and the content of certain hazardous substances in the workplace.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Colour : Black

Physical State : Prismatic

Odour : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Boiling point or
Initial boiling point and boiling range : Not available.

Flash Point : Not available.

Flammability : Not available.

Solubility : Not available.

Lower and upper explosion
limit/flammability limit : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Kinematic viscosity : Not available.

Partition coefficient: n-octanol/water (log value)	: Not available.
Vapour pressure	: Not available.
Density and/or relative density	: Not available.
Relative vapour density	: Not available.
Particle characteristics	: Not available.
Other information	: -
Voltage	: 7.6V
Electric capacity	: 7800mAh
Electric Energy	: 59.28Wh

Section 10 - Stability and Reactivity

Reactivity	: No data available.
Chemical stability	: Stable.
Possibility of hazardous reactions	: No data available.
Conditions to Avoid	: Flames, sparks, and other sources of ignition, incompatible materials.
Incompatible materials	: Oxidizing agents, acid base.
Hazardous decomposition products	: Carbon monoxide, carbon dioxide, lithium oxide fumes.

Section 11 - Toxicological Information

Acute Toxicity:

CAS No.	LC50/LD50
12190-79-3	No data available.
7429-90-5	No data available.
1333-86-4	No data available.
7440-50-8	No data available.
21324-40-3	No data available.
96-49-1	LD50 Rat (oral): 10g/kg
108-32-7	LD50 Rat (oral): 2!29000mg/kg; LD50 Rabbit (Dermal): >20000mg/kg

Skin irritation/corrosion	: No data available.
Serious eye damage/irritation	: No data available.
Respiratory or Skin sensitisation	: No data available.
Germ Cell mutagenicity	: No data available.
Carcinogenicity	: No data available.
Reproductive Toxicity	: No data available.
Specific target organ toxicity-Single exposure	: No data available.
Specific target organ toxicity-Repeated exposure	: No data available.
Aspiration hazard	: No data available.
Information on the likely routes of exposure	: No data available.

Eye	: No data available.
Skin	: No data available.
Ingestion	: No data available.
Inhalation	: No data available.

Section 12 - Ecological Information

Ecological Toxicity

CAS# 108-32-7

LC50	: >1 000 mg/L- Fish (Carp) - 96h;
EC50	: >1 000 mg/L- Crustaceans (Daphnia magna) - 48h;
EC50	: >900 mg/L- Algae (Scenedesmus subspicatus) - 72h
Persistence and degradability	: No data available.
Bioaccumulative Potential	: No data available.
Mobility in Soil	: No data available.
Other adverse effects	: No data available .

Section 13 - Disposal Considerations

Disposal methods:

Recommendation : Consult state, local or national regulations to ensure proper disposal.

Uncleaned packaging

Recommendation : Disposal must be made according to official regulations.

Section 14 - Transport Information

UN or ID Number

IATA	: UN3481
IMDG	: UN3481
Model Regulation	: UN3481

Proper Shipping Name/Description

IATA	: Lithium ion batteries contained in equipment
IMDG	: LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
Model Regulation	: LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT

Packing Group

IATA	: N/A
IMDG	: N/A
Model Regulation	: N/A

Hazard Label

IATA	: N/A
IMDG	: N/A
Model Regulation	: N/A

Environmental hazards

Marine pollutant	: No
IMDG EmS	: F-A. S-1
Special precautions for user	: No information available.

Transport information : The Li-ion Polymer Battery V5-H has passed the test UN38.3, according to the report ID: MRI5MPSG2747197U5.

According to the Packing Instruction 967 section II of IATA DGR 64th Edition for transportation.

According to the special prov1s1on 188 of IMDG (40-20) or the special prov1s1on 188 of <<Recommendations On The Transport Of Dangerous Goods-Model Regulations» (22”d), the goods are not subject to other provision of this code.

Note: Batteries weight in the package<5kg. (By air, Batteries installed in equipment)

Transport Fashion : By air, by sea, by railway, by road.

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

CAS No.	TSCA	IECSC	DSL/NDSL	EINECS/ ELINCS/ NLP
12190-79-3	Listed	Listed	Listed DSL	Listed
7429-90-5	Listed	Listed	Listed OSL	Listed
1333-86-4	Listed	Listed	Listed OSL	Listed
7440-50-8	Listed	Listed	Listed DSL	Listed
21324-40-3	Listed	Listed	Listed DSL	Listed
96-49-1	Listed	Listed	Listed DSL	Listed
108-32-7	Listed	Listed	Listed DSL	Listed

Section 16 - Other Information

Other Information:

CAS: (Chemical Abstracts Service);
EC: (European Commission);
ACGIH: (American Conference of Governmental Industrial Hygienists);
NIOSH: (US National Institute for Occupational Safety and Health);
OSHA: (US Occupational Safety and Health);
TLV: (Threshold Limit Value)
TWA: (Time Weighted Average);
STEL: (Short Term Exposure Limit);
PEL: (Permissible Exposure Level);
REL: (Recommended Exposure Limit);
PC-STEL: (Permissible concentration-short time exposure limit);
PC-TWA: (Permissible concentration-time weighted average);
IARC: (International Agency for Research on Cancer);
LC50: (lethal concentration, 50 percent kill);
LD50: (Lethal dose, 50 percent kill);
EC50: (Median effective concentration);
BCF: (Bioconcentration Factor);
BOD: (Biochemical oxygen demand);
IECSC: (Inventory of Existing Chemical Substances in China);
NOEC: (No observed effect concentration);
NTP: (US National Toxicology Program);

RTECS: (Registry of Toxic Effects of Chemical Substances);
TOC: (Total Organic Carbon);
TSCA: (Toxic Substances Control Act of USA);
DSL: (the Domestic Substances List of Canada);
NDSL: (the Non-domestic Substances List of Canada);
IATA: (International Air Transport Association);
IMDG: (International Maritime Dangerous Goods);
TDG: (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations)

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