

Material Safety Data Sheet

Section 1.

Chemical Product and Company Identification

Name of Goods	Lithium-ion Battery
Type/Mode	EL20-C
Rating Parameter	24V, 20Ah, 480Wh
Manufacturer	EP Equipment Co, LTD
Manufacturer Address	Xiaquan, Dipu, Anji, Zhengjiang, China
Agent	Backsafe Australia
Agent Address	60 Mordaunt Circuit, Canning Vale WA 6155, Australia
Inspection According to	EEC Directive 93/112/EC UN 'Recommendations on the TRANSPORT OF DANGEROUS GOODS'
Emergency Telephone Call	13 11 26 (Poisons Information Centre) 000 (Emergency Services)



Section 2.

Composition Information

Chemical Composition	Chemical Formula	CAS No.	Weight (%) (About)
ABS	N/A	9003-56-9	19.51%
Graphite	C	7782-42-5	23%
Electrolyte	LiPF ₆	21324-40-3	0.75%
Copper foil	Copper	7440-50-8	15.2%
Aluminium foil	AL	7429-90-5	10.2%
Dissepiment	PP	9003-07-0	5%
PVDF	(CF ₂ CH ₂) _n	24937-79-9	0.40%
BVH-1	C ₆ H ₇ (OH) 2OCH ₂ COONa	9085-26-1	0.22%
SBR Styrene-butadiene rubber (Adhesive)	(C ₈ H ₈ .C ₄ H ₆) _x	25053-09-2	1%
Conductive agent	C	7440-44-0	0.34%
Lead	Pb	7439-92-1	Not detected
Cadmium	Cd	7440-43-9	Not detected
Mercury	Hg	7439-97-6	Not detected



Section 3.

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 8.64Wh, which does not belong to the miscellaneous dangerous goods, as is described in IMDG CODE and IATA DGR

Section 4.

First Aid Measures

Ingestion: Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. Use oxygen if available.

Eye: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.



Section 5.

Fire-fighting Measures

Flash Point: N/A

Auto-Ignition Temperature: N/A

Extinguishing Media: Water, CO₂

Special Fire-Fighting Procedures: Self-contained breathing apparatus

Unusual Fire and Explosion Hazards: Cell may vent when subjected to excessive heat-exposing battery contents

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, lithium oxide fumes

Section 6.

Accidental Release Measures

Steps to be taken in case Material is Released or Spilled:

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapours to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapours. Remove spilled liquid with absorbent and contain for disposal.

Waste Disposal Method:

Despite being rechargeable, the battery has a limited life span, Replace when usage time between charges becomes short. Please offer all used batteries for recycling according with local guidelines and regulation. Do not throw in the trash.



Section 7.

Handling and Storage

The battery should not be opened, destroyed or incinerated, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, over-charge the battery, force over-discharge, or throw into fire. Do not crush or puncture the battery or immerse in any liquids.

Precautions to be taken during handling and storage:

Avoid mechanical or electrical abuse. Preferably storage in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

Other precautions:

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short circuit or install with incorrect polarity.

Section 8.

Exposure Controls/Personal Protection

Respiratory Protection: In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use.

Ventilation: Not necessary under conditions of normal use.

Protective Gloves: Not necessary under conditions of normal use.

Other Protective Clothing or Equipment: Not necessary under conditions of normal use.

Personal Protection is recommended for venting battery: Respiratory Protection, Protective Gloves, Protective Clothing and Safety Glasses with side shields.



Section 9.

Physical and Chemical Properties

Appearance: Square

Odour: If leaking, smells of medical ether

pH: Not applicable as supplied

Flash Point: Not applicable unless individual components exposed

Flammability: Not applicable unless individual components exposed

Relative Density: Not applicable unless individual components exposed

Solubility (Water): Not applicable unless individual components exposed

Solubility (Other): Not applicable unless individual components exposed

Section 10.

Stability and Reactivity

Stability: Product is stable under conditions described in Section 7

Conditions to Avoid: Heat above 70°C or incinerate, deform, mutilate, crush, disassemble, overcharge, short circuit or expose over a long period to humid conditions.

Materials to Avoid: Oxidizing agents, alkalis, water

Hazardous Decomposition Products: Toxic Fumes, and may form peroxides

Hazardous Polymerization: N/A

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis or halogenated hydrocarbons.



Section 11.

Toxicological Information

Signs & symptoms: None, unless battery ruptures

In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.

Inhalation: Lung irritant

Skin contact: Skin irritant

Eye contact: Eye irritant

Ingestion: Poisoning if swallowed

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to severe irritation, burning and dryness of the skin may occur. Target organs nerves, liver and kidneys.

Section 12.

Ecological Information

There is no influence to ecology and environment when used properly.

Section 13.

Disposal Consideration

Depleted batteries shouldn't be treated as ordinary trash. Worn out batteries must be discharged, placed in plastic bags and then put into recycle bin. Shouldn't be thrown into fire or placed in high temperature. Shouldn't be dissected, pierced, crushed or treated similarly. The package and plastic box which contain batteries could be treated as ordinary trash. Best way is recycling.



Section 14.

Transport Information

Lithium cells and batteries are subject to the requirements of the U.S. hazardous materials regulations pursuant to 49 CFR 173.185(b), and IMDG Code pursuant to Special Provision 188. Each cell or battery has been tested under provisions of the UN Manual of Tests and Criteria, Part III, Sub section 38.3.

Lithium cells and batteries are subject to the requirements of UN38.3 (UN Manual of Tests and Criteria, Part III, subsection 38.3), PI965 to PI967 of IATA DGR 58th Edition 2017 Regular Bound Manual, and transported in accordance with applicable regulations and not restricted.

Batteries must be packaged and offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals) and protects against short circuits.

Section 15.

Regulation Information

Law Information:

Dangerous Goods Regulations

Recommendations on the Transport of Dangerous Goods Model Regulations

International Maritime 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.





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Section 16.

Other Information

Abbreviations and acronyms:

ACGIH: American Conference of Governmental Industrial Hygienists

BCF: Bioconcentration Factor

BOD: Biochemical oxygen demand

CAS: Chemical Abstracts Service

EC50: Median effective concentration

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association

IECSC: Inventory of Existing Chemical Substances in China

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration, 50 percent kill

LD50: Lethal Dose, 50 percent kill

NIOSH: US National Institute for occupational Safety and Health

NOEC: No observed effect concentration

NTP: US National Toxicology Program

OSHA: US Occupational Safety and Health

PC-STEL: Permissible Concentration-Short Term Exposure Limit

PC-TWA: Permissible Concentration-Time Weighted Average

PEL: Permissible Exposure Level

REL: Recommended Exposure Limit

RTECS: Registry of Toxic Effects of Chemical Substances

STEL: Short Term Exposure Limit

TDG: Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations

TLV: Threshold Limit Value

TOC: Total Organic Carbon

TSCA: Toxic Substances Control Act of USA

TWA: Time Weighted Average



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