

Safety Data Sheet

LITHIUM ION RECHARGEABLE BATTERY

SLPB776495

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Revision : A

1. Chemical Product and company identification

1.1 Product identification

- **Battery Type** Lithium-Ion Battery
- **Model** SLPB776495
- **Manufacturer** routejade Inc.
24-8, Gayagongdan-gil, Gayagok-myeon, Nonsan-si,
Chungcheongnam-do, Korea
33020
- **Emergency Situation** Tel: +82 70 8611 2105
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2. Hazard Identification

2.1 We would like to inform our customers that these batteries are exempt articles and are not subject to the 29 CFR 1910.1200 OSHA requirements, Canadian WHMIS requirements or GHS requirements.

- **Emergency Overview**
- **OSHA Hazards-not applicable**
- **Target Organs-not applicable**
- **GHS Classification-not applicable**
- **GHS Label Elements, including precautionary Statement-not applicable**
- **Pictogram-not applicable**
- **Signal words-not applicable**
- **Hazard statements-not applicable**
- **Precautionary statements-not applicable**

3. Composition Information

Hazardous Ingredients	%	CAS Number
Aluminum	< 10	7429-90-5
Copper	< 10	7440-50-8
Lithium Cobalt Dioxide(LiCoO ₂)	< 40	12190-79-3
Lithium Nickelate Dioxide(LiNiO ₂)		12031-65-1
Lithium Manganese Dioxide(LiMnO ₂)		12162-79-7
Aluminum Oxide (Al ₂ O ₃)		1344-28-1
Polyvinylidene Fluoride (PVDF)	< 8	24937-79-9
Carbon	< 30	7440-44-0
Polyethylene	< 5	9002-88-4
Polypropylene	< 2	9003-07-0
Lithium hexafluorophosphate	< 20	21324-40-3
Ethylene carbonate		96-49-1
Ethyl methyl carbonate		623-53-0
1,3-Propane sultone		1120-71-4

4. First aid measures

- 4.1 Inhalation** If contents of an opened cell are inhaled, remove source of contamination or move victim to fresh air. Obtain medical advice.
- 4.2 Eye contact** Contact with the contents of an opened cell can cause burns. If eye contacts with contents of an open cell occurs, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes while holding the eyelids open. Neutral saline solution may be used as soon as it is available. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto face. Quickly transport victim to an emergency care facility.
- 4.3 Skin contact** Contact with the contents of an opened cell can cause burns. If skin contact with contents of an open cell occurs, as quickly as possible remove contaminated clothing, shoes and leather goods. Immediately flush with lukewarm, gently flowing water for at least 30 minutes. If irritation or pain persists, seek medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard.
- 4.4 Ingestion** Contact with the contents of an opened cell can cause burns. If ingestion of contents of an open cell occurs, NEVER give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water.
DO NOT INDUCE VOMITING. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility.

5. Fire fighting measures

- 5.1 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.
- 5.2 Extinguishing Media** Use extinguishing media suitable for the materials that are burning.
- 5.3 Special Firefighting Instructions** If possible, remove cell(s) from firefighting area. If heated above 125°C, cell(s) may explode/vent.
- 5.4 Firefighting Equipment** Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

6. Accidental Release Measures

- 6.1 On Land** Place material into suitable containers and call local fire/police department.
- 6.2 In Water** If possible, remove from water and call local fire/police department.

7. Handling and storage

Batteries should not be disassembled, destroyed or incinerated as they may leak, rupture and release chemicals into the environment.

- 7.1 Handling** Batteries are designed to be recharged. However, improperly charging a cell or battery may cause the cell or battery to ignite. Use only approved chargers and follow standard operating procedures. Never disassemble a battery or bypass any safety device. Do not crush, pierce, short (+) and (-) battery terminals with conductive (i.e. metal) goods. Do not directly heat or solder. Do not throw into fire. Do not mix batteries of different types and brands. Do not mix new and used batteries. Keep batteries in nonconductive (i.e. plastic) trays.
- 7.2 Storage** Do not store batteries above 60°C. Store batteries in a cool (below 25°C), dry area that is subject to little temperature change. Elevated temperatures can result in reduced battery service life. Do not store batteries in a manner that allows terminals to short circuit. Extended short-circuiting creates high temperatures in the cell. High temperatures can cause skin irritation or cause the cell to flame. Avoid reversing battery polarity within the battery assembly. Doing so may cause the cell to ignite or to leak. Do not place batteries near heating equipment, or expose to direct sunlight for long periods.
- 7.3 Other** Follow the manufacturer's recommendations regarding maximum recommended currents and operating temperature range. Applying pressure to the battery may cause disintegration, releasing irritant materials that are hazardous to the eye, skin, and throat.

8. Exposure controls / Personal protection

- 8.1 Engineering controls** Keep away from heat and open flame.
Store in a cool dry place.
- 8.2 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

State	Solid
Odor	N/A
PH	N/A
Vapor pressure	N/A
Vapor density	N/A
Boiling point	N/A
Specific gravity	N/A
Density	N/A

10. Stability and reactivity

- 10.1 Reactivity** None
- 10.2 Incompatibilities** None during normal operation. Avoid exposure to heat, open flame, and corrosives.
- 10.3 Hazardous Decomposition Products** None during normal operating conditions. If cells are opened, hydrogen fluoride and carbon monoxide may be released.
- 10.4 Conditions to Avoid** Avoid exposure to heat and open flame. Do not puncture, crush or incinerate.

11. Toxicological Information

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

Sensitization	Teratogenicity	Reproductive	Acute toxicity
No	No	No	No

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 bio accumulative. Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.

13. Disposal Considerations

13.1 Dispose in accordance with applicable regulations according to country (in most countries, the disposal of used batteries is forbidden and the end-users are invited to dispose them properly, eventually through not-for-profit or profit organizations, mandated by the local government or organized on a voluntary basis by professionals).

13.2 Batteries 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.

13.3 This product does not contain any materials listed by the United State EPA as requiring specific waste disposal requirements. These are exempted from the hazardous waste disposal standards under Universal Waste Regulations. Disposal of large quantities of Lithium-ion batteries or cells may be subject to federal, state, or local regulations.

13.3 Consult your local, state and provincial regulations regarding disposal of these batteries.

14. Transport information

14.1 Lithium Ion batteries are considered to be "Rechargeable batteries" and meet the requirements of transportation by the U.S. Department of Transportation(DOT), International Civil Aviation Administration(ICAO).

14.2 Hereby we certify that this model of Lithium battery meets the requirements each test in the UN Manual of tests and Criteria, Part 3, sub-section 38.3.

14.3 Not regulated for Transport under Special Provision 188 of the International Maritime Dangerous Goods Code (IMDG)

14.4 Even classified as lithium ion batteries (UN3480), 2020 IATA Dangerous Goods Regulations 61st edition.

Product is applied to transportation regulations.

Cell and batteries: Packing Instruction 965 Section IA

Packed with Equipment: Packing Instruction 966 Section II

Contained in Equipment: Packing Instruction 967 Section II

The Product is handled as Non-Dangerous Goods by meeting the following.

14.5 Lithium ion cells and batteries offered for transport are not subject to other additional requirements of the UN. regulations if they meet the following;

- **For cells, the Watt-hour rating is more than 20Wh.**
- **For batteries, Watt-hour rating is more than 100Wh.**
- **Each cell or battery is of the type proven to meet the requirements of each test in the UN Manual of Tests and criteria Part 3 subsection 38.3.**
- **Each cells comply with Special Provision A154.**
- **Net quantity per package shall not exceed 35 kg.**

14.6 The product has been evaluated according to the UN Manual of Tests and Criteria.

Test Item	Criteria	Result
Altitude simulation	<ul style="list-style-type: none"> • No leakage, venting, disassembly rupture and no fire. • Measuring mass before/after each test. (If M>5g, less than 0.1%) • Measuring voltage before/after each test. (more than 90%) Pass	Pass
Thermal test		Pass
Vibration		Pass
Shock		Pass
External short circuit	<ul style="list-style-type: none"> • No disassembly, rupture and fire within six hours of this test. • Max. temperature should not exceed 170°C. 	Pass
Impact		Pass
Overcharge	<ul style="list-style-type: none"> • No disassembly and fire within seven days of the test. 	Pass
Forced Discharge		Pass

15. Regulatory information

OSHA hazard communication standard (29 CFR 1910.1200) : Non-hazardous

16. Other information

16.1 Revision No.	A
16.2 Date of Issue	2020-01-20
16.3 Revision Date	2020-01-20
16.4 Document No.	RJD-D-200120-40
16.5 Disclaimer	The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. routejade makes no warranty, expressed or implied, with respect to this information and disclaims all liabilities from reliance on it.