

# MATERIAL SAFETY DATA SHEET

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## 1. Product and Company Identification

Product Identification:

Lithium-Ion Rechargeable Battery Pack/10S4P

Customer Model : SBC-DT Simplo P/N: B9JM2046F

Power: 460Wh

Classification: SMP declare that battery Watt-hour rating is more than 100 WH, thus, it is considered as a "dangerous" product and should be transported per dangerous goods class 9 regulation which packagings must meet Packing Group II performance standards.

Manufacturer:

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### 2. Hazards Identification

Primary routes of entry: Skin contact, Skin absorption; Eye contact, Inhalation and ingestion: No

Symptoms of exposure: Skin contact, No effect under routine handling and use.

<u>Skin absorption</u>: No effect under routine handling and use. <u>Eye contact</u>: No effect under routine handling and use. <u>Inhalation</u>: No effect under routine handling and use.

Reported as carcinogen: Not applicable

Hazard: It may cause heat generation or electrolyte leakage if battery terminals contact with other metal.

Electrolyte is flammable. In case of electrolyte leakage, move the battery from fire immediately.

# 3. Composition / Identification on Ingredients

Substance : Lithium Ion Battery CAS number : Reference 3-3

Composition:



3-1. Cases: Plastic3-2. Printed Circuit Board AssemblyNot dangerous

3-3. Lithium Ion Cell:

Hazardous Ingredients	%	CAS Number
Aluminum Foil	2-10	7429-90-5
Lithium Cobalt Oxide	20-50	12190-79-3
Polyvinylidene Fluoride (PVDF)	<5	24937-79-9
Copper Foil	2-10	7440-50-8
Cabon (proprietary)	10-30	7440-44-0
Ethylene carbonate	10-20	109-32-7

3.4. Watt/Hour rating per cell Not more than 20 WH

3.5 Watt/Hour rating per battery More than 100 WH

3.6 RoHS Directive Fully compliant with RoHS

### 4. First Aid Measures

<u>Inhalation</u>: Make the victim blow his/her nose, gargle. Seek medical attention if necessary.

Skin contact: Remove contaminated clothes and shoes immediately. Wash extraneous matter or

contact region with soap and plenty of water immediately.

Eye contact: Do not rub one's eyes. Immediately flush eyes with water continuously for at least

15 minutes. Seek medical attention immediately.

<u>Ingestion</u>: Make the victim vomit. When it is impossible or the feeling is not well after

vomiting, seek medical attention.

#### 5. Fire Fighting Measures

<u>Extinguishing Media</u>: Use suitable extinguishing media. Dry chemical, carbon dioxide and plenty of water are effective.

<u>Firefighting Equipment</u>: Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

#### 6. Accidental Release Measures

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:

Do not expose the battery to excessive physical shock or vibration. Short-circuiting should be avoided. However, accidental short-circuiting for a few seconds will not seriously affect the battery. Prolonged short circuits will cause the battery to rapidly lose energy, could generate enough heat to burn skin. Sources of short circuits include jumbled batteries in bulk containers, coins, metal jewelry, metal covered tables, or metal belts used for assembly of batteries in devices. To minimize risk of short-circuiting, the protective case supplied with the battery should be used to cover the terminals when transporting or storing the battery. Do not disassemble or deform the battery. Should an individual cell within a battery become ruptured, do not allow contact with water.

## Storage:

The lithium ion battery should be between 25% and 75% of full charge when stored for a long period of time. Store in a cool, dry, well ventilated area. And temperature above 100 degree can result in loss of battery performance, leakage, or rust. Do not expose the battery to open flames.

## 8. Exposure Controls / Personal Protection

<u>Engineering Controls</u>: 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 battery.

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	
Solubility in water	Insoluble	
Specific gravity	N/A	
Density	N/A	

## 10. Stability and Reactivity

Reactivity: None

<u>Incompatibilities</u>: None during normal operation. Avoid exposure to heat, open flame, and

corrosives.

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.

# 12. Ecological Information

Lithium ion battery pack can be disposable in accordance with appropriate federal, state and local regulations.

## 13. Disposal Consideration

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.

# 14. Transport Information

Regulations specifically applicable to the product: International Air Transport Association (IATA) Dangerous Goods Regulations ((57th Edition, 2016).

Section IA of Packing Instruction 965 for Lithium Ion battery

Special Provisions A51, A88, A99, A154, A164 and A183

Section I of Packing Instruction 966 for Lithium Ion battery packed with equipment

Special Provisions A88, A99, A154, A164, A181 and A185

Section I of Packing Instruction 967 for Lithium Ion battery contained in equipment

Special Provisions A48, A99, A154, A164, A181 and A185,

UN 3480 (Lithium ion batteries) and UN3481 (Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment)

US Department of Transportation (DOT) 49 code of Federal Regulations [USA]

International Civil Aviation Organization (ICAO) Technical Instructions (2015-2016 Edition)

Transport Regulations for Sea Transport IMDG Code (2014 Edition) Class 9 exemptions

# 15. Regulatory Information

The international regulations on air transportation of rechargeable Lithium Ion batteries (commercial and cargo) are governed mainly by the following regulations:

- 1. UN Recommendations on the Transportation of Dangerous Goods Model Regulations
- 2. U.S. Department of Transportation hazardous materials regulations (HMR)
- 3. International Civil Aviation Organization (ICAO) Technical Instructions
- 4. International Air Transport Association (IATA) Dangerous Goods Regulations UN3480 Packing Instruction 965 Part 2
- 5. European Communities (EC) Hazard Classification according to directives 67/548/E

R-Phases (R10/R11/R15/R17/R20/R22/R36/R37/R38/R43/R48/R49/R50/R51/R53/R62/R65/R67)

S-phases (\$5/\$7/8/\$9/\$16/\$22/\$24/\$25/\$26/\$29/\$33/\$36/37/\$43/\$45/\$53/\$60/\$61/\$62)



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## 16. DISCLAIMER

The application of the regulations can vary according to the aviation company, SMP, therefore, highly recommends that you consult with the aviation company prior to transporting battery or cell. This information has been compiled from sources considered to be reliable and to the best of our knowledge, accurate and reliable. However, SMP does not accept liability for any loss or damage that may occur, direct or indirect, from using this information.