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No: 企画-ほか-070280

MATERIAL SAFETY DATA SHEET

1. Company Identification

Manufacturer's Name	: Sony Energy Devices Corporation
Manufacturer's Address	: 1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima, 963-0531 Japan
Manufacturer's Information Telephone	: +81-24-958-6375
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Date Prepared	: Jul.22, 2010
Signature of Paper	: F. Hashimoto

2. Product Information

Product Category	: Lithium-Ion Rechargeable Battery
Model Name	: US18650VT
Nominal Capacity	: 1320mAh (4.9Wh)
Average Operating Voltage	: 3. 7V

3. Composition / Information on Ingredients

IMPORTANT NOTE:
The battery should not be opened or burned since the following ingredients contained within the battery that could be harmful under some circumstance if exposed or misused.
The cell contains neither metallic lithium nor lithium alloy.

Cathode	:	Lithium Nickel Cobalt Oxides / Lithium Manganese Oxides	(active material)
		Polyvinylidene Fluoride	(binder)
		Graphite	(conductive material)
Anode	:	Graphite	(active material)
		Polyvinylidene Fluoride	(binder)
Electrolyte	:	Organic Solvent	(non-aqueous liquid)
		Lithium Salt	
Others	:	Heavy metals such as Mercury, Cadmium, Lead, and Chromium are not used in the cell.	
UN number	:	UN3480	
Watt-hour rating	:	4.9[Wh] for battery	

4. Hazard Identification

Class Name	:	Not applicable for regulated class
Hazard	:	It may cause heat generation or electrolyte leakage if battery terminals contact with other metals. Electrolyte is flammable. In case of electrolyte leakage, move the battery from fire immediately.
Toxicity	:	Vapor generated from burning batteries, may make eyes, skin and throat irritate.

5. First Aid Measures

The product contains organic electrolyte. In case of electrolyte leakage from the battery, actions described below are required.

Eye contact	:	Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing, and call a doctor. If appropriate procedures are not taken, this may cause an eye irritation.
Skin contact	:	Wash the contact areas off immediately with plenty of water and soap. If appropriate procedures are not taken, this may cause sores on the skin.
Inhalation	:	Remove to fresh air immediately, and call a doctor.

6. Fire Fighting Measures

- Use specified extinguishers (gas, foam, powder) and extinguishing system under the Fire Defense Law.
- Since corrosive gas may be produced at the time of fire extinguishing, use an air inhalator when danger is predicted.
- Use a large amount of water as a supportive measure in order to get cooling effect if needed. (Indoor/outdoor fire hydrant)
- Carry away flammable materials immediately in case of fire.
- Move batteries to a safer place immediately in case of fire.

7. Accidental Release Measures

- Wipe off with dry cloth
- Keep away from fire
- Wear safety goggles, safety gloves as needed

8. Precautions for Safe Handling and Use

Storage	:	Store within the recommended limit of -20°C to 45°C (-4°F to 113°F), well-ventilated area. Do not expose to high temperature (60°C/140°F). Since short circuit can cause burn hazard or safety vent to open, do not store with metal jewelry, metal covered tables, or metal belt.
Handling	:	Do not disassemble, remodel, or solder. Do not short + and - terminals with a metal. Do not open the battery.
Charging	:	Charge within the limits of 0°C to 45°C (32°F to 113°F) temperature. Charge with specified charger designed for this battery.
Discharging	:	Discharge within the limits of -20°C to 60°C (-4 °F to 140°F) temperature.
Disposal	:	Dispose in accordance with applicable federal, state and local regulations.
Caution	:	Fire, Explosion, and Severe Burn Hazard. Do not Crush, Disassemble, Heat Above 100°C/212°F, or Incinerate.

9. Exposure Controls/Personal protection (In case electrolyte is leaked from battery)

Acceptable concentration	: Not specified in ACGIH.
Facilities	: Provide appropriate ventilation such as local ventilation system in the storage.
Protective clothing	: Gas mask for organic gases, safety goggle, safety glove.

10. Physical and chemical Properties

Appearance	:	Lithium ion rechargeable cells
Average Operating Voltage	:	3.7 V

11. Stability and Reactivity

External short-circuit, deformation by crush, high temperature (over 100°C) exposure of a battery cause generation of heat and ignition.

12. Toxicological Information

Acute toxicity : No information as a battery
Local effects : No information as a battery

13. Ecological Information

When exhausted battery is buried in the ground, corrosion may be caused on the outer case of battery and electrolyte may be oozed. There is no information on environmental influence.

14. Disposal considerations

When battery is disposed, isolate positive(+) and negative(-) terminals of the battery to avoid those terminals from touching each other. Batteries may be short-circuited when piled up or mixed with the other batteries in disorder. Dispose in accordance with applicable federal, state and local regulations.

15. Transport information

- When large amount of batteries are transported by ship, vehicle and railroad, avoid high temperature and dew condensation.
- Avoid transportation which may cause damage of package.
- Lithium ion batteries are not subject to dangerous goods regulation for the purpose of transportation by the U.S. Department of Transportation (DOT), the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) or the International Maritime Dangerous Goods regulations (IMDG). For Lithium ion batteries, the Watt-hour rating is no more than 20Wh/cell can be treated as "non-dangerous goods" by the United Nations Recommendations on the Transport of Dangerous Goods/Special Provision 188, provided that the products are prevented from being short-circuited with each other and are packaged in an appropriate condition which satisfies Packing Group Ⅱ performance level.
- The shipment complies with the Packing Instruction 965 Section Ⅱ under IATA and so the cargo can be exempted from Dangerous Goods regulations.

  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 Ⅲ, subsection 38.3.

  Each package must be capable of withstanding a 1.2m drop test in any orientation without:

  -damage to cells or batteries contained therein;
  -shifting of the contents so as to allow battery to battery (or cell to cell) contact;
  -release of contents.

16. Regulatory information

IATA Dangerous Goods Regulations 51st Edition

17. Other Information

The information contained within is provided for your information only. The information and recommendations set forth herein are made in good faith and are believed to be accurate as of the date of preparation. However, Sony Energy Devices Corporation MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM RELIANCE ON IT.