

**1. Product and Company Identification:**

**Product Identification:**

**ENERGY+**<sup>®</sup> Brand Lithium-ion Cylindrical, Prismatic or Polymer Pouch Rechargeable Battery Pack

Stock Code & Customer P/N	Cell Manufacture Data			Cell Configuration	Nominal Voltage	Nominal mA-Hours	Power Rating Watt-Hours (Wh)
	Mfr. & P/N	Type	UL File No.				
L18650-2NT	PANASONIC	Cylindrical	MH12210	2S1P	7.4	2600	19.24
N/A	UR18650ZY						

**Company Identification:**

Fedco Electronics, Inc.  
1363 Capital Drive  
Fond du Lac, WI 54937

Tel: 1-920-922-6490  
Fax: 1-920-922-6750  
Email: [info@fedcoelectronics.com](mailto:info@fedcoelectronics.com)

**Emergency Contact Information:**

INFOTRAC  
In the United States call: 1-800-535-5053  
Outside the United States call collect: 1-352-323-3500

The battery referenced herein is defined as an exempt "article" and is not subject to the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard 29 CFR Subpart 1910.1200(g). This information is provided as a service to our customers.

**2. Hazard Identification:**

Batteries consist of one or more cells which contain chemical materials stored in a hermetically sealed metal case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition, explosion or release of hazardous chemical materials. However, if exposed to fire, added mechanical shocks, added electric stress by misuse, the gas release vent will be operated. The battery cell case may be breached at the extreme and hazardous materials may be released including acrid or harmful fumes.

Primary routes of entry: Skin contact, skin absorption; eye contact, inhalation and ingestion:

Skin absorption: No effect normal use, however exposure to electrolyte may cause dermatitis.

Eye contact: No effect under normal use, however electrolyte may damage the cornea.

Inhalation: No effect under normal use, however fumes may irritate the lungs.

Ingestion: No effect under normal use, however ingestion of the electrolyte may irritate the mouth and lungs and cause nausea.

Reported as carcinogen: Not applicable

**3. Composition / Identification of Ingredients:**

This battery consists of one or more lithium-ion cells in a hermetically sealed metal case and contains these basic components.

<u>Component:</u>	<u>Material</u>
Positive Electrode	Lithium Cobalt Oxide
Negative Electrode	Graphite (Carbon)
Electrolyte	Mixture of Organic Carbonate Solvents Mixture of Fluorinated Inorganic Salts

**4. First Aid Measures:**

Inhalation: Not anticipated. If battery is leaking, contents may be irritating to respiratory passages. Remove to fresh air and seek medical attention if necessary.

Skin contact: Not anticipated. If battery is leaking, wash exposed skin with copious quantities of water. If irritation or pain persists, seek medical attention.

Eye contact: Not anticipated. Do not rub one's eyes. Immediately flush eyes with copious amounts of water for at least 15 minutes. If irritation continues seek medical attention.

Ingestion: Not anticipated. Contact the National Capital Poison Center (NCPC) at 202-635-3333 (collect) or your local poison center immediately.

**5. Fire Fighting Measures:**

Extinguishing Media: Dry Chemical, alcohol resistant foam, CO<sub>2</sub> extinguishers or halon. Large amounts of water can also be used to cool down burning Lithium-ion cells and batteries.

Firefighting Equipment: Detailed information on fighting a lithium-ion battery fire can be found in *Guide 147 (Lithium-Ion Batteries)* of the US DOT Emergency Response Guide.

**6. Accidental Release Measures:**

Not a likely event.

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 crush, pierce or expose the battery to excessive physical shock or vibration. Do not short circuit the (+) and (-) terminals with conductive materials such as metal coins, jewelry, metal tables or other cells and batteries. 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 or explode. To minimize risk of short-circuiting, use the retail carton supplied with the battery or cover the terminals with tape when transporting or storing the battery. Do not disassemble the battery.

Storage:

Store Lithium-ion cells and batteries in a dry, well-ventilated place between temperatures of -20°C and +35°C; and at a relative humidity of 45% to 85%. When stored for a long period of time batteries should be between 25% and 75% state of charge.

**8. Exposure Controls and Personal Protection:**

Engineering Controls: Keep away from heat and open flame. Store in a cool dry place

Personal Protection: Not required for handling of battery.

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 handling large pallets.

**9. Physical and Chemical Properties:**

Appearance	Solid plastic case or plastic sleeve covering
Odor	N/A
PH	N/A
Vapor pressure	N/A
Boiling point	N/A
Flammability	N/A
Freezing point / melting point	N/A
Solubility in water	Insoluble
Specific gravity	N/A

**10. Stability and Reactivity:**

Stability: Product is stable under the conditions described in Section 7.

Conditions to avoid: None during normal operation. Avoid exposure to heat above +70° C, open flame, crushing, piercing, deforming, mutilating, short circuit and exposure to long periods of high humidity.

**11. Toxicological Information:**

This product does not emit toxicological properties during routine handling and use. If battery ruptures, overexposure to internal contents and corrosive fumes may irritate eyes, mucous membranes, skin and lungs. See Section 4.

**12. Ecological Information:**

Lithium ion battery packs pose no risks to persons, plants or animals.

**13. Disposal Considerations:**

Do not incinerate or subject battery cells to temperatures above +70°C. Regulations regarding the proper disposal and recycling of rechargeable batteries vary from country to country. Fedco Electronics, Inc. pays license fees to Call2Recycle in the United States and Canada. (f/k/a The Rechargeable Battery Recycling Corporation or RBRC) To find a drop-off location in the U.S. and Canada call 1-800-822-8837 or go to the Call2Recycle web site at [www.call2recycle.org](http://www.call2recycle.org).

In the European Union go to the RECHARGE web-site at [www.rechargebatteries.org/html/recharge-knowledge-recycling.html](http://www.rechargebatteries.org/html/recharge-knowledge-recycling.html)

**14. Transportation Information:**

Lithium-ion rechargeable batteries are classified as UN3480 in the International Air Transport Association (IATA) Dangerous Goods Regulations, whose shipping regulation text is consistent with that found in the International Civil Aviation Organization (ICAO) Technical Instructions, Packing Instructions 965 (PI-965). For batteries packed with equipment see PI-966 and for batteries contained in equipment see PI-967 of the IATA Dangerous Goods Regulations. In the United States Lithium-Ion rechargeable batteries must be shipped in compliance with the Code of Federal Regulations, 49CFR Part 173, Subpart §173.185. For more information paste into your browser: [http://media.fedco.com/PDF/3/49CFR\\_173.185\\_New\\_Rules\\_02-06-15.pdf](http://media.fedco.com/PDF/3/49CFR_173.185_New_Rules_02-06-15.pdf)

This battery may be shipped by air in accordance with (ICAO) Section IB or the IATA of the Dangerous Goods Regulations Packing Instructions PI-965 Section IB, if they meet the following provisions:

- For cells, the power is not more than 20 watt-hours (Wh) and for battery packs the power is not more than 100WHr.
- Each cell and battery pack must be proven to meet the requirements of the tests in the UN Manual of Tests and Criteria, Part III, sub-section 38.3. (Rev 6)
- The watt-hour rating must be marked on the outside of the battery case.
- The cells and batteries must be shipped in accordance with IATA Packing Instructions 965, including packaging, special marking and personnel training requirements.
- Lithium-ion rechargeable batteries shipped via air must be shipped at a state of charge (SOC) not exceeding 30% of their rated design capacity.
- **Lithium-Ion batteries are forbidden as cargo aboard passenger aircraft.**
- For more information paste into your browser: [http://media.fedco.com/PDF/3/IATA\\_Lithium\\_Battery\\_Guidance\\_2017.pdf](http://media.fedco.com/PDF/3/IATA_Lithium_Battery_Guidance_2017.pdf)

**The Lithium-ion battery described in this SDS is of a type proven to meet the requirements of the tests in the UN Manual of Tests and Criteria, Part III, sub-section 38.3 (Rev 5), and contain no more than 20 watt-hours (Wh) in a single cell battery or no more than 100WHr in a multi cell battery.**

**15. Regulatory Information:**

OSHA Hazard communication standard 29 CFR 1910.1200(g)

Mercury-containing and Rechargeable Battery Management Act (USA)

Commission Directive 2006/66/EC (EU)

**16. Other Information:**

The information contained in this Safety Data Sheet is based on the present state of knowledge and current legislation. This safety data sheet provides guidance on health, safety, environmental and transportation aspects of the product and should not be construed as any guarantee or warranty, either expressed or implied, of technical performance or suitability for particular applications.