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# MATERIAL SAFETY DATA SHEET

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## Narada Licom Batteries

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Telephone No.: (86) 021--58996188  
Date of Preparation: 8/8/06

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## Section I – Product Identification

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Product Name: Polymer Lithium Ion Battery

Model: Prismatic Type Cells      Nominal Voltage: (n×3.7)V

Chemical System: Polymer Lithium Ion      Designated for Recharge:

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## Section II – Hazardous Ingredients

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IMPORTANT NOTE: The battery cell should not be opened or exposed to heat because exposure to the following ingredients contained within could be harmful under some circumstances.

Chemical Name	CAS No.	PEL	TLV
Lithium Cobaltate (LiCoO <sub>2</sub> )	12190-79-3	None Established	None Established
Graphite (C)	7782-42-5	2.5 mg/m <sup>3</sup> (as dust)	2.5 mg/m <sup>3</sup> (as dust)
Organic Solvent		None Established	None Established
Lithium Salt		None Established	None Established
Polyvinylidene difluoride (PVdF)	24937-79-9	None Established	None Established

Weight of lithium per cell: 0g

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## Section III – Physical Data

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Specific Gravity: (H<sub>2</sub>O=1):

LiCoO<sub>2</sub>:4.95, Graphite:2.09~2.2

Melting Point: (°C):

LiCoO<sub>2</sub> about 1130 C

Appearance and Odor:

LiCoO<sub>2</sub> is a black, odorless powder.

C is a black, odorless powder.

Organic solvent is a colorless or light yellow liquid.

Lithium salt is a white, crystalline and odorless powder.

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## Section IV — Fire and Explosion Hazard Data

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Extinguishing Media: Water  
Flammable Limits: Not available  
Special Fire Fighting Procedure: In case of fire in an adjacent area, use water, CO<sub>2</sub> or dry chemical extinguishers if cells are packed in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged cells use LITH-X (Graphite Base). In this case, do not use water.

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## Section V - Reactivity Data

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Stability: Stable  
Conditions to Avoid: Do not heat, disassemble or recharge.  
Hazardous Decomposition or By-products: N/A  
Hazardous polymerization will not occur.

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## Section VI - Health Hazard Data

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Routes of Entry:	Inhalation	Yes
	Skin	Yes
	Ingestion	Yes

### Health Hazards (Acute and Chronic):

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. The most likely risk is an acute exposure when the gas release vent works. Organic solvent has slight toxicity and can irritate skin and eyes. Lithium salt is irritating to skin, eyes and mucous membranes and should be avoided.

### Carcinogenicity:

NTP: None      IARC Monograph: None      OSHA Regulated: None

### Medical Conditions Generally Aggravated by Exposure:

An acute exposure will not generally aggravate any medical condition.

### Emergency and First Aid Procedures:

In case of skin contact with contents of battery, flush immediately with water. For eye contact, flush with copious amounts of water for 15 minutes. Do not inhale leaked material. If irritation persists, get medical help.

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## Section VII - Precautions for Safe Handling and Use

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### Steps to be Taken in Case Material is Released or Spilled:

The preferred response is to leave the area and allow the batteries to cool and the vapors to dissipate. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

### Waste Disposal Method:

Dispose in accordance with appropriate regulations. Open cells should be treated as hazardous waste.

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Precautions to be Taken in Handling and Storing:

Avoid mechanical or electrical abuse.

Other Precautions:

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

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## Section VIII - Control Measure

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Respiratory Protection (Specify Type): Not necessary under conditions of normal use.

Ventilation: Not necessary under conditions of normal use.

Protective Gloves: Not necessary under conditions of normal use.

Eye Protection: Not necessary under conditions of normal use.

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

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## Section IX - Recycling and Disposal

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Narada Licom encourages battery recycling. Polymer Lithium ion batteries are safe for disposal in the normal municipal waste stream since they are not defined by the federal government as hazardous waste. However, Polymer lithium ion batteries are recyclable.

DO NOT INCINERATE or subject battery cells to temperatures in excess of 212°F. Such treatment can cause cell rupture.

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## Section X – Transportation

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Narada Licom sealed Polymer Lithium ion batteries are considered to be "dry cell" batteries and are not subject to dangerous goods. Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals). IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting.

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