



# Lithium-ion Rechargeable Battery Safety Datasheet

Version: 1  
Review date: October, 13<sup>th</sup>, 2015

## SECTION 1: IDENTIFICATION

### Product identifier

<b>Product name:</b>	Rechargeable Li-ion Mobile Power (5000 or 2600 mAh, 3.7V)
<b>Other names:</b>	Not available.
<b>Model Numbers:</b>	MXXYY-ZZ where (XX is the battery size in WH and is less than 20, YY is the color, and ZZ is the location, North America if no ZZ).
<b>Country:</b>	USA / CANADA
<b>Product type:</b>	Solid

### Identified uses

Not available.

### Manufacturer

<b>Supplier/Manufacturer:</b>	Schneider Electric IT USA (formerly APC by Schneider Electric, APC Sales and Service Corp.)
<b>Address:</b>	132 Fairgrounds Road West Kingston, RI 02892
<b>Telephone:</b>	800-788-2208 or 401-789-5735
<b>E-mail:</b>	<a href="http://nam-en.apc.com/app/ask">http://nam-en.apc.com/app/ask</a>
<b>Website:</b>	www.APC.com
<b>Telecopy:</b>	Not available.

### Emergency telephone number (with hours of operation)

CANUTEC: +1-613-996-6666 or \*666 (cellular)

## SECTION 2: HAZARDS IDENTIFICATION

### OSHA/HCS status:

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

### Classification of the substance or mixture:

Not classified.

### GHS label elements:

Signal word: No signal word.  
Hazard statements: No known significant effects or critical hazards.

### Precautionary statements

Prevention:	Not applicable.
Response	Not applicable.
Storage	Not applicable.
Disposal	Not applicable.

### Hazards not otherwise classified (HNOC)

Physical hazards not otherwise classified (PHNOC): None known.  
Health hazards not otherwise classified (HHNOC): None known.

## SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

**Substance/Mixture:** Mixture.

**Other means of identification:** Not available.

### CAS number/other identifiers

CAS number: Not applicable.

Product code: Not available.

Ingredient name	%	CAS number
Cobalt lithium dioxide	≥25 - <50	12190-79-3
Carbonic acid, ethyl methyl ester	≥1 - <3	623-53-0
Ethylene carbonate	≥1 - <3	96-49-1
Lithium hexafluorophosphate(1-)	≥1 - <3	21324-40-3
N-methyl-2-pyrrolidone	≥0.3 - <1	872-50-4

USA: This battery pack is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirement. The information contained in this Safety Data Sheet contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Canada: This is not a controlled product under WHMIS. This product meets the definition of a “manufactured article” and is not subject to the regulations of the Hazardous Products Act.

**Any concentration shown as a range is to protect confidentiality or is due to batch variation.**

**There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in Section 8.**

## SECTION 4: FIRST AID MEASURES

### Description of necessary first aid measures

<b>Eye contact</b>	Contact with the contents of an opened cell can cause burns. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
<b>Inhalation</b>	If contents of an opened cell are inhaled, remove source of contamination or move victim to fresh air. Get medical attention if symptoms occur.
<b>Skin contact</b>	Contact with the contents of an opened cell can cause burns. Flush contaminated skin with plenty of water. Get medical attention if symptoms occur.
<b>Ingestion</b>	Contact with the contents of an opened cell can cause burns. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.

### Over-exposure signs/symptoms

Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.

### Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	No specific treatment.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11).

## SECTION 5 : FIRE-FIGHTING MEASURES

### Extinguishing media

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Lithium ion batteries contain flammable liquid electrolyte that may vent, ignite and produce sparks when subjected to high temperatures (> 150 °C (302 °F)), when damaged or abused (e.g., mechanical damage or electrical overcharge). Burning cells can ignite other batteries in close proximity.
Hazards thermal decomposition products	Decomposition products may include the following materials: <ul style="list-style-type: none"><li>- Carbon dioxide</li><li>- Carbon monoxide</li><li>- Phosphorus oxides</li><li>- Halogenerated compounds</li><li>- Metal oxide/oxides</li></ul>
Special protective actions for fire-fighters	No special measures are required.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum

or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## SECTION 7: HANDLING AND STORAGE

### Precautions for safe handling

Protective measures	Put on appropriate personal protective equipment (see Section 8). Avoid release to the environment.
Advice on general occupational hygiene	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	Store in accordance with local regulations. Store battery pack in a dry location. Keep at room temperature (25°C +/-5°C). Elevated temperatures can result in shortened cell life.

## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### United States Occupational exposure limits

Ingredient name	Exposure limits
Cobalt lithium dioxide	<b>ACGIH TLV (United States, 3/2015).</b> TWA: 0.02 mg/m <sup>3</sup> , (as Co) 8 hours.
N-methyl-2-pyrrolidone	<b>AIHA WEEL (United States, 10/2011). Absorbed through skin.</b> TWA: 10 ppm 8 hours.

#### Canada Occupational exposure limits

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			Notations
Ingredient	List name	ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	
Aluminium	US ACGIH 3/2015	-	1	-	-	-	-	-	-	-	[a]
	AB 4/2009	-	10	-	-	-	-	-	-	-	[3][b]
	BC 2/2015	-	1	-	-	-	-	-	-	-	[c]
	ON 7/2015	-	1	-	-	-	-	-	-	-	[a]
	QC 1/2014	-	10	-	-	-	-	-	-	-	
Copper	US ACGIH 3/2015	-	1	-	-	-	-	-	-	-	[d]
	US ACGIH 3/2015	-	0.2	-	-	-	-	-	-	-	[e]
	AB 4/2009	-	1	-	-	-	-	-	-	-	[d]
		-	0.2	-	-	-	-	-	-	-	[e]
	BC 2/2015	-	1	-	-	-	-	-	-	-	[d]
		-	0.2	-	-	-	-	-	-	-	[e]
	ON 7/2015	-	1	-	-	-	-	-	-	-	[d]
		-	0.2	-	-	-	-	-	-	-	[e]
	QC 1/2014	-	1	-	-	-	-	-	-	-	[d]
	-	0.2	-	-	-	-	-	-	-	[e]	
Cobalt lithium dioxide, as Co	US ACGIH 3/2015	-	0.02	-	-	-	-	-	-	-	
	BC 2/2015	-	0.02	-	-	-	-	-	-	-	
	ON 7/2015	-	0.02	-	-	-	-	-	-	-	[f]
	QC 1/2014	-	0.02	-	-	-	-	-	-	-	[3]
Graphite, synthetic	US ACGIH 3/2015	-	2	-	-	-	-	-	-	-	[a]
	AB 4/2009	-	2	-	-	-	-	-	-	-	[g]
	BC 2/2015	-	2	-	-	-	-	-	-	-	[c]

	ON 7/2015	-	2	-	-	-	-	-	-	-	[a]
	QC 1/2014	-	2	-	-	-	-	-	-	-	[h]

[3] Skin sensitization

**Form:** [a]Respirable fraction [b]Metal Dust [c]Respirable [d]Dusts and mists [e]Fume [f]Inorganic [g]Respirable (all forms except graphite fibres) [h]Respirable dust.of 100 µm at 50 per cent collection efficiency. [j]Respirable (all forms except graphite fibres).

<b>Appropriate engineering controls</b>	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
<b>Environmental exposure controls</b>	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

### Individual protection measures

<b>Hygiene measures</b>	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
<b>Eye/face protection</b>	Not required under normal conditions of use. Wear safety glasses if handling an open or leaking cell.
<b>Hand protection</b>	Not required under normal conditions of use. Wear neoprene or natural rubber gloves if handling an open or leaking cell.
<b>Body protection</b>	Not required under normal conditions of use.
<b>Other skin protection</b>	Not required under normal conditions of use.
<b>Respiratory protection</b>	Not required under normal conditions of use.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Physical state	Solid. [Cell.]
Color	Not available.
Odor	Not available.
Odor threshold	Not applicable.
pH	Not applicable.
Melting point	Not applicable.
Boiling point	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Lower and upper explosive (flammable) limits	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	Not applicable.
Solubility in water	Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Viscosity	Not applicable.

## SECTION 10: STABILITY AND REACTIVITY

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No specific data.
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Ethylene carbonate	LD50 Oral	Rat	10 g/kg	-
N-methyl-2-pyrrolidone	LD50 Dermal	Rabbit	8 g/kg	-
	LD50 Oral	Rat	3914 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Ethylene carbonate	Skin – Mild irritant	Rabbit	-	660 milligrams	-
N-methyl-2-pyrrolidone	Eyes – Moderate irritant	Rabbit	-	100 milligrams	-

#### Sensitization

There is no data available.

#### Mutagenicity

There is no data available.

#### Carcinogenicity

##### Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH	EPA	NIOSH
Cobalt lithium dioxide	-	-	-	A3	-	-
Aluminium	-	-	-	A4	-	-

#### Reproductive toxicity

There is no data available.

#### Teratogenicity

There is no data available.

#### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Carbonic acid, ethyl methyl ester	Category 3	Not applicable.	Respiratory tract irritation
N-methyl-2-pyrrolidone	Category 3	Not applicable.	Respiratory tract irritation

#### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Ethylene carbonate	Category 2	Oral	Kidneys
Lithium hexafluorophosphate(1-)	Category 1	Not determined	Bones and teeth

#### Aspiration hazard

There is no data available.

Information on the likely routes of exposure: Dermal contact, Eye contact, Inhalation, Ingestion.

#### Potential acute health effects

Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.

#### Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.

#### Delayed and immediate effects and also chronic effects from short and long term exposure

##### Short term exposure

Potential immediate effects	No known significant effects or critical hazards.
Potential delayed effects	No known significant effects or critical hazards.

##### Long term exposure

Potential immediate effects	No known significant effects or critical hazards.
Potential delayed effects	No known significant effects or critical hazards.

##### Potential chronic health effects

General	No known significant effects or critical hazards.
Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.

#### Numerical measures of toxicity

##### Acute toxicity estimates

Route	ATE value
Oral	7575.8 mg/kg

## SECTION 12: ECOLOGICAL INFORMATION

#### Toxicity

Product/ingredient name	Result	Species	Exposure
N-methyl-2-pyrrolidone	Acute LC50 1.23 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 832 ppm Fresh water	Fish - Lepomis macrochirus	96 hours

#### Persistence and degradability

There is no data available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Cobalt lithium dioxide	-	15600	High
Carbonic acid, ethyl methyl ester	0.972	-	Low
Ethylene carbonate	0.11	-	Low
N-methyl-2-pyrrolidone	-0.46	-	Low

### Mobility in soil






Soil/water partition coefficient (K <sub>oc</sub> )	No data available.
Other adverse effects	No known significant effects or critical hazards.

## SECTION 13: DISPOSAL CONSIDERATIONS

### Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: TRANSPORT INFORMATION

	DOT	TDG	IMDG	IATA
<b>UN number</b>	UN3480/UN3481	UN3480/UN3481	UN3480/UN3481	UN3480/UN3481
<b>UN proper shipping name</b>	LITHIUM ION BATTERIES (including lithium ion polymer batteries)/ LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries). Marine pollutant RQ (Copper)	LITHIUM ION BATTERIES (including lithium ion polymer batteries)/ LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries)	LITHIUM ION BATTERIES (including lithium ion polymer batteries)/ LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries)	LITHIUM ION BATTERIES (including lithium ion polymer batteries)/ LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries)
<b>Transport hazard class(es)</b>	9  	9 	9 	9 
<b>Packing group</b>	II	II	II	II
<b>Environmental hazards</b>	Yes.	No.	No.	No.



<p><b>Additional information</b></p>	<p>This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.</p> <p><b>Reportable quantity</b> 45871.6 lbs / 20825.7 kg Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) Transportation requirements.</p>	<p>Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9).</p>	<p>-</p>	<p>The environmentally hazardous substance mark may appear if required by other transportation regulations.</p>
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**AERG : 147**

**DOT-RQ Details:**

Copper

5000 lbs / 2270 kg

<p>Special precautions for user</p>	<p><b>Transport within user's premises:</b> always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage</p>
<p>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</p>	<p>Not available.</p>

**SECTION 15: REGULATORY INFORMATION**

<p>U.S. Federal regulations</p>	<p><b>TSCA 8(a) CDR Exempt/Partial exemption:</b> Not determined. <b>United States inventory (TSCA 8b):</b> All components are listed or exempted. <b>Clean Water Act (CWA) 307:</b> Copper</p>
<p>Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)</p>	<p>Listed.</p>
<p>Clean Air Act Section 602 Class I Substances</p>	<p>Not listed.</p>
<p>Clean Air Act Section 602 Class II Substances</p>	<p>Not listed.</p>
<p>DEA List I Chemicals (Precursor Chemicals)</p>	<p>Not listed.</p>
<p>DEA List II Chemicals (Precursor Chemicals)</p>	<p>Not listed.</p>

**SARA 302/304**

Composition/information on ingredients

**Version: 1**

**Date:** October, 13<sup>th</sup>, 2015

No products were found  
SARA 304 RQ: Not applicable

### SARA 311/312

Classification: Not applicable.

Composition/information on ingredients.

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Cobalt lithium dioxide	≥25 - <50	No.	No.	No.	No.	Yes.
Carbonic acid, ethyl methyl ester	≥1 - <3	Yes.	No.	No.	Yes.	No.
Ethylene carbonate	≥1 - <3	No.	No.	No.	Yes.	Yes.
Lithium hexafluorophosphate(1-)	≥1 - <3	No.	No.	No.	Yes.	Yes.
N-methyl-2-pyrrolidone	≥0.3 - <1	Yes.	No.	No.	Yes.	Yes.

### SARA 313

	Product name	CAS number	%
<b>Form R –Reporting requirements</b>	Cobalt lithium dioxide	12190-79-3	≥25 - <50
	Copper	7440-50-8	≥10 - <25
	Aluminium	7429-90-5	≥5 - <10
<b>Supplier notification</b>	Cobalt lithium dioxide	12190-79-3	≥25 - <50
	Copper	7440-50-8	≥10 - <25
	Aluminium	7429-90-5	≥5 - <10

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

<b>Massachusetts</b>	The following components are listed: Dimethyl carbonate; Ethylene carbonate; Aluminium; Copper; Graphite, synthetic
<b>New York</b>	The following components are listed: Copper
<b>New Jersey</b>	The following components are listed: Cobalt lithium dioxide; Dimethyl carbonate; Aluminium; Copper; Graphite, synthetic
<b>Pennsylvania</b>	The following components are listed: Cobalt lithium dioxide; Dimethyl carbonate; Ethylene carbonate; Aluminium; Copper; Graphite, synthetic

### California Prop. 65

**WARNING:** This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
N-methyl-2-pyrrolidone	No.	Yes.	No.	3200 µg/day (inhalation)

### Canada - Canadian lists

<b>Canadian NPRI</b>	The following components are listed: Aluminium; Copper
<b>CEPA Toxic substances</b>	None of the components are listed.
<b>Canada inventory</b>	At least one component is not listed in DSL but all such components are listed in NDSL.

## SECTION 16: OTHER INFORMATION

Review date: October, 13<sup>th</sup>, 2015

Version: 1

Key to abbreviations:

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

**Notice to reader:**

**To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.**

**Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.**