

SECTION 1: IDENTIFICATION

1.1 Product identifier

Product name:	Lithium-ion Rechargeable Battery (5000 or 2600 mAh, 3.7V)
Other Names:	Not available.
Model Numbers:	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).
Product Type:	Solid

1.2 Relevant identified uses of the substances or mixture and uses advised against

Not available.

1.3 Details of the supplier of the safety data sheet

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

1.4 Emergency telephone number (24-hour)

800-788-2208

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Product definition: Mixture

Classification according to regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal Word: No signal word

Hazard Statements: None known significant effects or critical hazards.

Precautionary statements

Prevention:	Not applicable.
Response	Not applicable.
Storage	Not applicable.
Disposal	Not applicable.
Supplemental label elements	Safety data sheet available on request.
Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings	Not applicable.
Tactile warning of danger	Not applicable.

2.3 Other hazards

Other hazards which do not result in classification:

None known

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixtures:

Mixture

Product/ingredient name	Identifiers	%	Classification Regulation (EC) No. 1272/2008[CLP]	Type
Cobalt lithium dioxide	EC: 235-362-0 CAS: 12190-79-3	≥25 - <50	Repr. 2, H361f (Fertility)	[1][2]
Graphite, synthetic	EC: 231-955-3 CAS: 7782-42-5	≥10 - <25	Not classified.	[2]
Copper	EC: 231-159-6 CAS: 7440-50-8	≥10 - <25	Not classified.	[2]
Aluminium	EC: 231-072-3 CAS: 7429-90-5 Index: 013-002-00-1	≥5 - <10	Flam. Sol. 1, H228 Water-react. 2, H261	[2]
Carbonic acid, ethyl methyl ester	EC: 433-480-9 CAS: 623-53-0	≥1 - <3	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
Ethylene carbonate	EC: 202-510-0 CAS: 96-49-1	≥1 - <3	Acute Tox. 4, H302 Eye Irrit. 2, H319 STOT RE 2, H373 (kidneys) (oral)	[1]
Lithium hexafluorophosphate(1-)	EC: 244-334-7 CAS: 21324-40-3	≥1 - <3	Acute Tox. 3, H301 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT RE 1, H372 (bones and teeth)	[1]

This battery pack is an article pursuant to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No. 453/2010, is not subject to REACH regulation. 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.

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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

[5] Substance of equivalent concern

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

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact	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.
Inhalation	If contents of an opened cell are inhaled, remove source of contamination or move victim to fresh air. Get medical attention if symptoms occur.

Skin contact	Contact with the contents of an opened cell can cause burns. Flush contaminated skin with plenty of water. Get medical attention if symptoms occur.
Ingestion	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.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both 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.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	No specific treatment

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	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.
Hazardous thermal decomposition products	Decomposition products may include the following materials: Carbon dioxide Carbon monoxide Phosphorus oxides Halogenated compounds Metal oxide/oxides

5.3 Advice for firefighters

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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 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".

6.2 Environmental precautions

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).
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6.3 Methods and materials for containment and cleaning up

Small spill	Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
Large spill	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, labelled waste container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

SECTION 7: HANDLING AND STORAGE

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures	Put on appropriate personal protective equipment (see Section 8).
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.

7.2 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.

7.3 Specific end use(s)

Recommendations	Not available.
Industrial sector specific solutions	Not available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

	Result	NIOSH	OSHA
Cobalt lithium dioxide	TWAs	Not established	Not established
Graphite, synthetic	TWAs	TWA 2.5 mg/m ³ (resp)	Not established
Copper	TWAs	1 mg/m ³ TWA (dust and mist); 0.1 mg/m ³ TWA (fume)	0.1 mg/m ³ TWA (fume); 1 mg/m ³ TWA (dust and mist)
Aluminium	TWAs	TWA 10 mg/m ³ (total) TWA 5 mg/m ³ (resp)	TWA 15 mg/m ³ (total) TWA 5 mg/m ³ (resp)

Key to abbreviations

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Recommended monitoring procedures	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
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DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available.

8.2 Exposure controls

Appropriate engineering controls	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
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Individual protection measures

Hygiene measures	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.
Eye/face protection	Not required under normal conditions of use. Wear safety glasses if handling an open or leaking cell.

Skin protection

Hand protection	Not required under normal conditions of use. Wear neoprene or natural rubber gloves if handling an open or leaking cell.
Body protection	Not required under normal conditions of use.
Other skin protection	Not required under normal conditions of use.
Respiratory protection	Not required under normal conditions of use.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance

Physical state	Solid. [Cell.]
Color	Not available.
Odor	Not available.
Odor threshold	Not applicable.
pH	Not applicable.
Melting point/freezing point	Not applicable.
Initial boiling point and boiling range	Not applicable.
Flash point	Closed cup: Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Upper/lower explosive limits	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	Not available.
Solubility(ies)	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.
Explosive properties	Not applicable.
Oxidising properties	Not applicable.

9.2 Other information

No additional information.

SECTION 10: STABILITY AND REACTIVITY

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

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 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	-

Acute toxicity estimates

Route	ATE value
Oral	7575.8 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	There is no data available.
Reproductive toxicity	There is no data available.
Teratogenicity	There is no data available.
Aspiration hazard	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

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

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.

Other information

Not available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 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

12.2 Persistence and degradability | There is no data available.

12.3 Bioaccumulative potential

Product/ingredient name	LogPow	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

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc})	No data available.
Mobility	Not available.

12.5 Results of PBT and vPvB assessment

PBT	Not applicable.
vPvB	Not applicable.

12.6 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: DISPOSAL CONSIDERATIONS

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods





Product

Methods of disposal	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.
Hazardous waste	Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

Packaging

Methods of disposal	The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
Special precautions	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 spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: TRANSPORT INFORMATION

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	UN3480/UN3481	UN3480/UN3481	UN3480/UN3481	UN3480/UN3481
14.2 UN proper shipping name	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)	LITHIUM ION BATTERIES (including lithium ion polymer batteries)/ LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries)
14.3 Transport hazard class(es)	9 	9 	9 	9 
14.4 Packing group	II	II	II	II
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	The environmentally hazardous substance mark may appear if required by other transportation regulations.

14.6 Special precautions for user	Transport within user's premises: 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.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV – List of substances subject to authorization

Annex XIV	None of the components are listed.
Substances of very high concern	None of the components are listed.

Annex XVII – Restrictions on the manufacture placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

Other EU regulations

Europe inventory	Not determined.
Integrated pollution prevention and control list (IPPC) - Air	Listed.
Integrated pollution prevention and control list (IPPC) - Water	Listed.

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
Cobalt lithium dioxide	-	-	-	Repr.2, H361f (Fertility)

Seveso Directive

This product is not controlled under the Seveso Directive.

15.2 Chemical Safety Assessment

This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: OTHER INFORMATION

Review date: November, 2nd, 2015

Version: 1

Abbreviations and acronyms:

ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 vPvB = Very Persistent and Very Bioaccumulative

Lithium-ion Rechargeable Battery

Version: 1

Date: November, 2nd, 2015

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	

Full text of abbreviated H statements:	H226 H228 H261 H301 H302 H314 H315 H318 H319 H335 H361f (Fertility) H372 (bones and teeth) H373 (kidneys)	Flammable liquid and vapor. Flammable solid. In contact with water releases flammable gases. Toxic if swallowed. Harmful if swallowed. Causes severe skin burns and eye damage. Causes skin irritation. Causes serious eye damage. Causes serious eye irritation. May cause respiratory irritation. Suspected of damaging fertility. Causes damage to organs through prolonged or repeated exposure. (bones and teeth). May cause damage to organs through prolonged or repeated exposure if swallowed. (kidneys)
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Full text of classifications [CLP/GHS]:	Acute Tox. 3, H301 Acute Tox. 4, H302 Eye Dam. 1, H318 Eye Irrit. 2, H319 Flam. Liq. 3, H226 Flam. Sol. 1, H228 Repr. 2, H361f (Fertility) Skin Corr. 1A, H314 Skin Irrit. 2, H315 STOT RE 1, H372 (bones and teeth) STOT RE 2, H373 (kidneys) (oral) STOT SE 3, H335 Water-react. 2, H261	ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (oral) - Category 4 SERIOUS EYE DAMAGE/ EYE IRRITATION – Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION – Category 2 FLAMMABLE LIQUIDS - Category 3 FLAMMABLE SOLIDS - Category 1 TOXIC TO REPRODUCTION (Fertility) - Category 2 SKIN CORROSION/IRRITATION - Category 1A SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (bones and teeth) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys) (oral) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SUBSTANCES AND MIXTURES, WHICH IN CONTACT WITH WATER, EMIT FLAMMABLE GASES - Category 2
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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.