

Safety Data Sheet

Issue date: 08/03/2016

v 1

Last Revision Date: 08/03/2016

1 Identification

- **Product identifier**
 - **Trade name: LITHIUM-ION BATTERY 3.7V CONTAINED IN EQUIPMENT**
 - **Part number:** 413025
 - **Application of the substance / the mixture** Lithium-ion battery - rechargeable
- **Details of the supplier of the safety data sheet**
 - **Manufacturer/Supplier:**
CPS Products Canada Ltd.
1324 Blundell Road
Mississauga, ON L4Y 1M5
Canada
Phone: (905) 615-8620
email: info@cpsproducts.com
 - **Emergency telephone number:**
CHEMTREC International +1 (703) 527-3887 (outside the US), 1-800-424-9300 (in the US) 24 hr

2 Hazard(s) identification

- **Classification of the substance or mixture**
The product is not classified according to the Globally Harmonized System (GHS).
- **Label elements**
 - **GHS label elements** Not Applicable
 - **Hazard pictograms** Not Applicable
 - **Signal word** Not Applicable
 - **Hazard statements** Not Applicable
- **Other hazards**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
 - **Description:** Mixture: consisting of the following hazardous components.

· Chemical components:		
7440-65-5	yttrium	40-<50%
12190-79-3	Lithium cobalt(III) oxide	10-<25%
7782-41-4	fluorine	2.5-<10%
7440-44-0	carbon	2.5-<10%
21324-40-3	Lithiumhexafluorophosphat(1-)	2.5-<10%
7429-90-5	aluminium powder (stabilised)	2.5-<10%
7782-42-5	Graphite	2.5-<10%
7440-09-7	potassium	1-<2.5%
7440-23-5	sodium	1-<2.5%
7440-24-6	strontium	0.1-<2.5%

(Contd. on page 2)

NA

Safety Data Sheet

Issue date: 08/03/2016

v 1

Last Revision Date: 08/03/2016

Trade name: **LITHIUM-ION BATTERY 3.7V CONTAINED IN EQUIPMENT**

(Contd. of page 1)

· **Additional information:**

The Lithium-Ion rechargeable batteries described in this Safety Data Sheet are sealed units which are not hazardous when used according to the recommendations of the manufacturer.

Under normal conditions of use, the solid electrode materials and liquid electrolyte they contain are non- reactive provided the battery integrity is maintained and seals remain intact. There is Risk of fire only in cases of abuse (mechanical, thermal, electrical), which leads to the activation of the safety valve and/or the rupture of the battery container. Electrolyte leakage, electrode materials reaction with moisture/water or battery vent/fire may follow, depending upon the circumstances. In case of excessive internal pressure and/or temperature Winston batteries are fitted with a safety vent for protection and/or rupture of the cell case.

4 First-aid measures· **Description of first aid measures**· **General information:**

In case of battery rupture, fume or fire, evacuate personnel from contaminated area and provide maximum ventilation to clean out fumes/gases. Meantime, spray the battery with water or put the smoking battery into basin at once. In all cases, seek medical attention.

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:**

Rinse cautiously with water. Remove contact lenses, if present and easy to do. Get medical attention if eye irritation develops or persists.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

DO NOT INDUCE VOMITING. Get immediate medical attention.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** See section 11.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Fire-fighting measures· **Extinguishing media**

· **Suitable extinguishing agents:** CO₂, sand, extinguishing powder. Do not use water.

· **For safety reasons unsuitable extinguishing agents:** Water

· **Special hazards arising from the substance or mixture** See section 10 for additional information.

· **Advice for firefighters**· **Protective equipment:**

Do not inhale explosion gases or combustion gases.

Wear fully protective suit.

Recommend wearing self-contained breathing apparatus.

NA

(Contd. on page 3)

Safety Data Sheet

Issue date: 08/03/2016

v 1

Last Revision Date: 08/03/2016

Trade name: **LITHIUM-ION BATTERY 3.7V CONTAINED IN EQUIPMENT**

(Contd. of page 2)

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

The material contained within the batteries would only be expelled under abusive conditions. Soak under water or spray with copious amounts of water, place in approved container (after cooling if necessary) and dispose in accordance with local regulations.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- **Handling:**

- **Precautions for safe handling**

The batteries should not be opened, destroyed nor incinerate since they may leak or rupture and release in the environment the ingredients they contain.

Do not crush, pierce, short battery terminals with conductive (i.e. metal) goods. Do not directly heat or solder. Do not throw into fire. Do not mix batteries of different types and brands. Do not mix new and used batteries. Keep batteries in non-conductive (i.e. plastic) trays.

- **Information about protection against explosions and fires:** No special measures required.

- **Conditions for safe storage, including any incompatibilities**

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

See section 10 for incompatible materials.

- **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from flammable substances.

- **Further information about storage conditions:**

Store in dry conditions.

Protect from humidity and water.

Protect from heat and direct sunlight.

Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.

- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**

- **Personal protective equipment:**

- **Breathing equipment:**

Not required.

In case of leakage, use self-contained full face respirator equipment.

(Contd. on page 4)

Safety Data Sheet

Issue date: 08/03/2016

v 1

Last Revision Date: 08/03/2016

Trade name: **LITHIUM-ION BATTERY 3.7V CONTAINED IN EQUIPMENT**

(Contd. of page 3)

- **Protection of hands:**
Not required.
In case of leakage, use viton rubber gloves.
- **Eye protection:**
Not required.
In case of leakage, Wear safety goggles or glasses with side shields.

9 Physical and chemical properties· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

- **Form:** Solid
- **Color:** According to product specification

· **Odor:** Characteristic· **Odor threshold:** Not determined.· **pH-value:** Not applicable.· **Change in condition**

- **Melting point/Melting range:** Undetermined.
- **Boiling point/Boiling range:** 2500 °C

· **Flash point:** Not applicable.· **Flammability (solid, gaseous):** Contact with water liberates extremely flammable gases.· **Ignition temperature:** 400 °C· **Decomposition temperature:** Not determined.· **Auto igniting:** Spontaneously flammable in air.· **Danger of explosion:** Not determined.· **Explosion limits:**

- **Lower:** Not determined.
- **Upper:** Not determined.

· **Vapor pressure:** Not applicable.· **Density:** Not determined.

- **Relative density** Not determined.
- **Vapor density** Not applicable.
- **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

- **Water:** Insoluble.

· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**

- **Dynamic:** Not applicable.
- **Kinematic:** Not applicable.

(Contd. on page 5)

NA

Safety Data Sheet

Issue date: 08/03/2016

v 1

Last Revision Date: 08/03/2016

Trade name: **LITHIUM-ION BATTERY 3.7V CONTAINED IN EQUIPMENT**

(Contd. of page 4)

· Solvent content:	
· Organic solvents:	0.0 %
· Solids content:	72.4 %
· Other information	10.36 WH (Watt-Hours)

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
 - **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid**
Heat above 85 °C or incinerate. Deform, mutilate, crush, pierce, disassemble. Short circuit. Prolonged exposure to humid conditions.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
Corrosive/Irritant Hydrogen fluoride (HF) is produced in case of reaction of lithium hexafluorophosphate (LiPF₆) with water. Combustible vapors and formation of Hydrogen fluoride (HF) and phosphorous oxides during fire.

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**
 - **Primary irritant effect:**
 - **on the skin:** The electrolyte solution contained in the battery causes skin irritation.
 - **on the eye:** The electrolyte solution contained in the battery is irritant to ocular tissues.
 - **Inhalation:**
Contents of a leaking or ruptures battery can cause respiratory tract, mucus, membrane irritation and edema.
 - **Ingestion:**
The ingestion of electrolyte solution causes tissue damage to throat and gastro/respiratory tract.
 - **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)
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None of the ingredients is listed.

(Contd. on page 6)

NA

Safety Data Sheet

Issue date: 08/03/2016

v 1

Last Revision Date: 08/03/2016

Trade name: **LITHIUM-ION BATTERY 3.7V CONTAINED IN EQUIPMENT**

(Contd. of page 5)

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
 - **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
 - **Bioaccumulative potential** No further relevant information available.
 - **Mobility in soil** Not Determined
- **Additional ecological information:**
 - **General notes:** At present there are no ecotoxicological assessments.
- **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
 - **Recommendation:** Contact waste processors for recycling information.
- **Uncleaned packagings:**
 - **Recommendation:**
Send to authorized recycling facilities.
Incineration should never be performed by battery users but eventually be trained professionals in authorized facilities with proper gas and fumes treatment.
Disposal must be made according to official regulations.

14 Transport information

- | | |
|----------------------------------|--|
| · UN-Number | |
| · DOT, IMDG, IATA | UN3481 |
| · TDG | UN3481 |
| · UN proper shipping name | |
| · DOT, IMDG, IATA | Lithium ion batteries contained in equipment |
| · TDG | Lithium ion batteries contained in equipment |

(Contd. on page 7)

NA

Safety Data Sheet

Issue date: 08/03/2016

v 1

Last Revision Date: 08/03/2016

Trade name: **LITHIUM-ION BATTERY 3.7V CONTAINED IN EQUIPMENT**

(Contd. of page 6)

· Transport hazard class(es)

· DOT



· Class

9 Miscellaneous dangerous substances and articles

· Label

9

· TDG

· Class

9 Miscellaneous dangerous substances and articles

· Label

9

· IMDG, IATA



· Class

9 Miscellaneous dangerous substances and articles

· Label

9

· Packing group

· DOT, IMDG, IATA

II

· TDG

II

· Environmental hazards:

Not applicable.

· Special precautions for user

Warning: Miscellaneous dangerous substances and articles

· EMS Number:

F-A,S-I

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

· Transport/Additional information:

· Excepted quantities (EQ)

Code: E0

Not permitted as Excepted Quantity

· IMDG

· Limited quantities (LQ)

0

· UN "Model Regulation":

UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9, II

NA

(Contd. on page 8)

Safety Data Sheet

Issue date: 08/03/2016

v 1

Last Revision Date: 08/03/2016

Trade name: **LITHIUM-ION BATTERY 3.7V CONTAINED IN EQUIPMENT**

(Contd. of page 7)

15 Regulatory information· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Sara**· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65**· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **Canadian substance listings:**· **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients is listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

None of the ingredients is listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:** Engineering Department· **Issue Date** 2015/10/09

(Contd. on page 9)

Safety Data Sheet

Issue date: 08/03/2016

v 1

Last Revision Date: 08/03/2016

Trade name: LITHIUM-ION BATTERY 3.7V CONTAINED IN EQUIPMENT

(Contd. of page 8)

· **Revision Changes:** v 1.0 - original SDS release (2015/10/09)

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NA