

# SAFETY DATA SHEET

According to Safe Work Australia

Printing date 04.04.2013

Revision: 04.04.2013

## 1 . IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

**Product Name:** LITHIUM PRIMARY BUTTON CELL

**Recommended Use of the Chemical and Restriction on Use:**

Battery - 3.0 V (or multiples of this in case of multi-cell configurations)

**Details of Manufacturer or Importer:**

Element 14 Pty Ltd  
72 Ferndell Street  
Chester Hill NSW 2162

**Phone Number:** 02 9644 7722

**Emergency telephone number:** 13 11 26

## 2 . HAZARDS IDENTIFICATION

**Hazardous Nature:**



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.

Water-react. 1 H260 In contact with water releases flammable gases which may ignite spontaneously.



GHS08 health hazard

Repr. 1B H360 May damage fertility or the unborn child.



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

**Label Elements**

**Signal Word** Danger

**Hazard Statements**

H225 Highly flammable liquid and vapour.

H260 In contact with water releases flammable gases which may ignite spontaneously.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H360 May damage fertility or the unborn child.

**Precautionary Statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P231+P232 Handle under inert gas. Protect from moisture.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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P240	Ground/bond container and receiving equipment.
P233	Keep container tightly closed.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P321	Specific treatment (see on this label).
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P330	Rinse mouth.
P370+P378	In case of fire: Use for extinction: CO <sub>2</sub> , powder or water spray.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P335+P334	Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
P362+P364	Take off contaminated clothing and wash it before reuse.
P405	Store locked up.
P403+P235	Store in a well-ventilated place. Keep cool.
P402+P404	Store in a dry place. Store in a closed container.
P501	Dispose of contents/container in accordance with local/regional/national regulations.

### 3. COMPOSITION AND INFORMATION ON INGREDIENTS

#### Chemical Characterization: Mixtures

**Description:** Mixture of substances listed below with nonhazardous additions.

#### Hazardous Components:

1313-13-9	Manganese oxide ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332	13-40%
108-32-7	1,3-Dioxolan-2-one, 4-methyl- ⚠ Eye Irrit. 2, H319	3-9%
110-71-4	Ethane, 1,2-dimethoxy- ⚠ Flam. Liq. 2, H225; ⚠ Repr. 1B, H360; ⚠ Acute Tox. 4, H332	1-5%
7439-93-2	Lithium ⚠ Water-react. 1, H260; ⚠ Skin Corr. 1B, H314	1-3%
7791-03-9	lithium perchlorate ⚠ Ox. Sol. 1, H271; ⚠ Acute Tox. 3, H301; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	0.3-1.5%

#### Additional information:

Heavy metals content:

7440-43-9 Cadmium <0.0001%

7439-92-1 Lead <0.001%

7439-97-6 Mercury <0.00001%

The battery is sealed hermetically and designed to withstand temperatures and pressures encountered during normal use. Thus, the ingredients have no hazard potential except if the battery is violated or dismantled.

If exposed to a fire, mechanical shocks, and electric stress by miss-use, the battery cell case will be breached and the hazardous materials may be released and acrid gas may be emitted. Therefore the batteries should not short circuit, recharge, puncture, incinerate, immerse in water, force discharge or expose to temperatures

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above the temperature range of the cell or battery.

### 4 . FIRST AID MEASURES

**Inhalation:**

If battery is leaking, contents may be irritating to respiratory passages. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if breathing problems develop.

**Skin Contact:**

If battery is leaking and material contacts the skin, immediately remove contaminated clothing and wash affected areas with water for at least 15 minutes. Seek medical attention if symptoms occur.

**Eye Contact:**

If battery is leaking and material contacts the eye, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.

**Ingestion:**

If battery is swallowed, seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as two hours after ingestion. If mouth area irritation or burning has occurred, rinse the mouth and surrounding area with tepid water for at least 15 minutes.

### 5 . FIRE FIGHTING MEASURES

**Suitable Extinguishing Media:**

Metal fire extinction powder, rock salt or dry sand. Carbon dioxide (CO<sub>2</sub>) is not suitable. Water has to be avoided.

**Specific Hazards Arising from the Chemical**

Cells may explode and release metal parts.

At contact of anode material with water extremely flammable hydrogen gas and caustic liquid are released.

**Special Protective Equipment and Precautions for Fire Fighters**

Wear Safe Work Australia approved self-contained breathing apparatus and full protective clothing.

### 6 . ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures:**

Wear Safe Work Australia approved self-contained breathing apparatus, solvent resistant gloves, protective clothing, apron and boots. Evacuate all non-essential personnel from affected area and allow the vapours to dissipate. Avoid eye and skin contact and inhalation of vapors or fumes. Ensure adequate ventilation. Irritating and flammable vapors may be released from leaking or ruptured batteries. Eliminate all ignition sources. Avoid sparks and open flames. No smoking.

**Environmental Precautions:**

In the event of a major spill, prevent spillage from entering drains or water courses.

**Methods and Materials for Containment and Cleaning Up:**

If battery casing is dismantled, small amounts of electrolyte may leak. Package the battery tightly including ingredients together with lime, sand or rock salt and dispose. Clean the area with water.

### 7 . HANDLING AND STORAGE

**Precautions for Safe Handling:**

Always follow the warning information on the batteries and in the manuals of devices. Only use the recommended battery types.

Keep batteries away from children.

For devices to be used by children, the battery casing should be protected against unauthorized access.

Unpacked batteries shall not lie about in bulk.

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In case of battery change always replace all batteries by new ones of identical type and brand.

Do not swallow batteries.

Do not throw batteries into water.

Do not throw batteries into fire.

Do not short-circuit batteries.

Do not recharge primary batteries.

**Conditions for Safe Storage:**

Store in a cool, dry and well ventilated area at room temperature (~ 20 °C). Protect from direct sunlight. Do not expose to higher temperatures because the electrical performance may be reduced. If possible, store the batteries in original packaging. Storage of unpacked batteries can cause short circuit and heat generation.

### 8 . EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Exposure Standards (Safe Work Australia):**

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

**Engineering Contols:**

Under normal conditions (during discharge) release of hazardous vapours does not occur. Engineering controls are not necessary under conditions of normal use.

**Personal Protective Equipment (PPE):**

**Respiratory Protection:** Not necessary under conditions of normal use.

**Skin Protection:**

Not necessary under conditions of normal use.

Use neoprene or natural rubber gloves and protective clothing if handling an open or leaking battery.

**Eye and Face Protection:**

Not necessary under conditions of normal use.

Wear safety glasses with sideshields or goggles if handling an open or leaking battery.

### 9 . PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:**

**Form:** Solid - battery - button cell

### 10 . STABILITY AND REACTIVITY

**Possibility of Hazardous Reactions:** Hazardous polymerisation will not occur.

**Chemical Stability:** Stable at ambient temperature and under normal conditions of use.

**Conditions to Avoid:**

Heat, sparks, open flames, hot surfaces and direct sunlight. When heated above 100 °C the risk of rupture occurs.

Do not disassemble battery, heat, dispose of in fire or short circuit.

**Incompatible Materials:** No further relevant information available.

**Hazardous Decomposition Products:**

Thermal decomposition may produce hazardous fumes of lithium and manganese and other toxic by-products.

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## 11 . TOXICOLOGICAL INFORMATION

**Toxicity:**

<b>LD<sub>50</sub>/LC<sub>50</sub> Values Relevant for Classification:</b>	
<b>1313-13-9 Manganese oxide</b>	
Oral LD <sub>50</sub>	>3478 mg/kg (rat)
<b>108-32-7 1,3-Dioxolan-2-one, 4-methyl-</b>	
Oral LD <sub>50</sub>	29000 mg/kg (rat)
<b>110-71-4 Ethane, 1,2-dimethoxy-</b>	
Oral LD <sub>50</sub>	5370 mg/kg (rat)

**Acute Health Effects****Inhalation:** Contents of an open battery can cause respiratory irritation.**Skin:** Contents of an open battery can cause skin irritation.**Eye:** Contents of an open battery can cause eye irritation.**Ingestion:**

Harmful if swallowed. Contents of an open battery can cause serious chemical burns of mouth, esophagus and gastro-intestinal tract.

**Skin Corrosion / Irritation:** Causes skin irritation.**Serious Eye Damage / Irritation:** Causes serious eye damage.**Respiratory or Skin Sensitisation:** No sensitising effects known.**Germ Cell Mutagenicity:** Not expected to be a hazard.**Carcinogenicity:**

Cadmium and cadmium compounds are classified by IARC as a Group 1 - Recognized carcinogen.

Lead is classified by IARC as a Group 2B - Possibly carcinogenic to humans.

Mercury classified by IARC as a Group 3 - Not classifiable as to its carcinogenicity to humans.

**Reproductive Toxicity:**

Suspected of damaging fertility or the unborn child.

1,2-Dimethoxyethane is classified by Safe Work Australia as Toxic to Reproduction Category 2.

**Specific Target Organ Toxicity (STOT) - Single Exposure:** Not expected to be a hazard.**Specific Target Organ Toxicity (STOT) - Repeated Exposure:** Not expected to be a hazard.**Aspiration Hazard:** Not expected to be a hazard.**Chronic Health Effects:** No chronic effects would be expected from handling a leaking battery.

## 12 . ECOLOGICAL INFORMATION

**Ecotoxicity:**

Lithium primary button cells do not contain heavy metals. They belong to the category of mercury-free battery (mercury content lower than 0.0001%).

**Aquatic toxicity:** No further relevant information available.**Persistence and Degradability:** No further relevant information available.**Bioaccumulative Potential:** No further relevant information available.**Mobility in Soil:** No further relevant information available.

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## 13 . DISPOSAL CONSIDERATIONS

**Disposal Methods and Containers:** Dispose according to applicable local and state government regulations.

**Special Precautions for Landfill or Incineration:**

Please consult your state Land Waste Management Authority for more information.

## 14 . TRANSPORT INFORMATION

<b>UN Number</b> ADG, IMDG, IATA	3090
<b>Proper Shipping Name</b> ADG, IMDG, IATA	LITHIUM METAL BATTERIES (including lithium alloy batteries)
<b>Dangerous Goods Class</b> ADG Class:	9 Miscellaneous dangerous substances and articles.
<b>Packing Group:</b> ADG, IMDG, IATA	II
<b>Marine pollutant:</b>	No
<b>Hazchem Code:</b>	4W
<b>Special Provisions:</b>	188, 230, 310
<b>Limited Quantities:</b>	Not applicable
<b>Packagings &amp; IBCs - Packing Instruction:</b>	P903
<b>Packagings &amp; IBCs - Special Packing Provisions:</b>	Not applicable
<b>Portable Tanks &amp; Bulk Containers - Instructions:</b>	Not applicable
<b>Portable Tanks &amp; Bulk Containers - Special Provisions:</b>	Not applicable

## 15 . REGULATORY INFORMATION

**Australian Inventory of Chemical Substances:**

All ingredients are listed.

## 16 . OTHER INFORMATION

**Creation Date:** 04.04.2013

**Prepared by:** MSDS.COM.AU Pty Ltd

[www.msds.com.au](http://www.msds.com.au)

**Abbreviations and acronyms:**

ADG: Australian Dangerous Goods

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

IARC: International Agency for Research on Cancer

**Disclaimer**

This MSDS is prepared in accord with the Safe Work Australia document "Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals - December 2011"

The information contained in this material safety data sheet is provided in good faith and is believed to be accurate at the date of issuance. Element 14 Pty Ltd makes no representation of the accuracy or

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