

## Section 1 - Identification of the Material and Supplier

**Spillz Pty Ltd**  
**15 Caledonia Crescent**  
**Peakhurst NSW 2110 AUSTRALIA**

Phone: 0422 784 243

Email: office@spillz.com.au

**Chemical nature:** Lithium battery  
**Trade Name:** **Lithium Battery**  
**Product Use:** Power source for electrical devices  
**Creation Date:** **June, 2017**  
**This version issued:** **June, 2017** and is valid for 5 years from this date.  
**Poisons Information Centre: Phone 13 1126 from anywhere in Australia**

## Section 2 - Hazards Identification

### Statement of Hazardous Nature

This product is classified as: Not classified as hazardous according to the criteria of SWA.  
 Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

**SUSMP Classification:** None allocated.

**ADG Classification:** Class 9: Miscellaneous Dangerous Goods.

**UN Number:** 3480, LITHIUM ION BATTERIES



**GHS Signal word: NONE. Not hazardous.**

#### PREVENTION

- P221: Take any precaution to avoid mixing with combustible or flammable materials.
- P232: Protect from moisture.
- P262: Do not get in eyes, on skin, or on clothing.
- P281: Use personal protective equipment as required.

#### RESPONSE

- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P376: Stop leak if safe to do so.
- P370+P378: In case of fire, use carbon dioxide, dry chemical, foam. Dry Agent. Water MUST NOT be allowed to come into contact with the product since a dangerous reaction is likely to take place.

#### STORAGE

- P402: Store in a dry place.
- P410: Protect from sunlight.

#### DISPOSAL

- P501: If they can not be recycled, dispose of contents to an approved waste disposal plant and containers to landfill (see Section 13 of this SDS).

## Emergency Overview

**Physical Description & Colour:** Sealed battery.

**Odour:** No odour.

**Major Health Hazards:** no significant risk factors have been found for this product.

## Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Aluminium foil	7429-90-5	2-10	10	not set
Polyvinylidene fluoride	24937-79-9	<5	not set	not set
Copper foil	7440-50-8	2-10	1	not set
Carbon	7440-44-0	10-30	not set	not set
Electrolyte, nickel and cobalt compounds, rubber and other ingredients	secret	to 100	not set	not set

## SAFETY DATA SHEET

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

## Section 4 - First Aid Measures

### General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

**Inhalation:** First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

**Skin Contact:** Gently brush away excess particles. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 5 minutes or until chemical is removed.

**Eye Contact:** Quickly and gently brush particles from eyes. No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes. Take special care if exposed person is wearing contact lenses.

**Ingestion:** If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

## Section 5 - Fire Fighting Measures

**Fire and Explosion Hazards:** The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

**Extinguishing Media:** In case of fire, use carbon dioxide, dry chemical, foam. Dry Agent. Water MUST NOT be allowed to come into contact with the product since a dangerous reaction is likely to take place. Try to contain spills, minimise spillage entering drains or water courses.

**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade. There is a danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is liquid-tight chemical protective clothing and breathing apparatus.

**Flash point:** No data

**Upper Flammability Limit:** No data.

**Lower Flammability Limit:** No data.

**Autoignition temperature:** No data.

**Flammability Class:** No data.

## Section 6 - Accidental Release Measures

**Accidental release:** In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include no specific manufacturer recommendations. Use impermeable gloves with care. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that dusts are likely to build up in cleanup area, we recommend that you use a suitable dust mask.

Stop leak if safe to do so, and contain spill. Because of the environmentally hazardous nature of this product, special care should be taken to restrict release to waterways or drains. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Consider vacuuming if appropriate. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

## Section 7 - Handling and Storage

**Handling:** Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

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**Storage:** Although this is classed as a Dangerous Good, you may not need a license to store it. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

## Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Aluminium foil	10	not set
Copper foil	1	not set

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

**Ventilation:** This product should only be used where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.

**Eye Protection:** Eye protection such as protective glasses or goggles is recommended when this product is being used.

**Skin Protection:** You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and facial protection when handling this product. See below for suitable material types.

**Protective Material Types:** There is no specific recommendation for any particular protective material type.

**Respirator:** If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable dust mask.

## Section 9 - Physical and Chemical Properties:

<b>Physical Description &amp; colour:</b>	Sealed battery.
<b>Odour:</b>	No odour.
<b>Boiling Point:</b>	Not available.
<b>Freezing/Melting Point:</b>	Solid battery, internal components are a combination of solids and liquids.
<b>Volatiles:</b>	No data.
<b>Vapour Pressure:</b>	No data.
<b>Vapour Density:</b>	Not applicable.
<b>Specific Gravity:</b>	No data.
<b>Water Solubility:</b>	No data.
<b>pH:</b>	No data.
<b>Volatility:</b>	No data.
<b>Odour Threshold:</b>	No data.
<b>Evaporation Rate:</b>	Not applicable.
<b>Coeff Oil/water Distribution:</b>	No data.
<b>Viscosity:</b>	Not applicable.
<b>Autoignition temp:</b>	No data.

## Section 10 - Stability and Reactivity

**Reactivity:** If damaged or short-circuited, the battery cell may generate heat, ignite and/or release corrosive or toxic fumes, especially if the contents come into contact with water.

**Conditions to Avoid:** This product should be kept in a cool place, preferably below 30°C. Containers should be kept dry. Keep away from heat, flames and sparks. Protect this product from light.

**Incompatibilities:** acids, bases, strong oxidising agents, halogenated hydrocarbons, water.

**Fire Decomposition:** Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. May form hydrogen fluoride gas and other compounds of fluorine. Aluminium compounds, lithium compounds, nickel compounds, cobalt compounds. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

**Polymerisation:** Polymerisation reactions are unlikely; they are not expected to occur.

## SAFETY DATA SHEET

## Section 11 - Toxicological Information

### Local Effects:

**Target Organs:** There is no data to hand indicating any particular target organs.

## Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Aluminium Foil	No risk phrases
	<ul style="list-style-type: none"><li>Substance or mixture which in contact with water emits flammable gas - category 2</li><li>Pyrophoric solid - category 1</li></ul>

Nickel compounds are known to be human carcinogens based on sufficient evidence of carcinogenicity from studies in humans, including epidemiological and mechanistic information, which indicates a causal relationship between exposure to nickel compounds and human cancer. The findings of increased risk of cancer in exposed workers are supported by evidence from experimental animals that shows that exposure to an assortment of nickel compounds by multiple routes causes malignant tumours to form at various sites in multiple species of experimental animals. A report may be found at <http://ntp.niehs.nih.gov/ntp/roc/eleventh/profiles/s118nick.pdf>

## Potential Health Effects

### Inhalation:

**Short Term Exposure:** Available data indicates that this product is not harmful. However product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.

**Long Term Exposure:** No data for health effects associated with long term inhalation.

### Skin Contact:

**Short Term Exposure:** Available data indicates that this product is not harmful. It should present no hazards in normal use. In case of leakage or damage, the battery contents are very irritating to the skin.

**Long Term Exposure:** No data for health effects associated with long term skin exposure.

### Eye Contact:

**Short Term Exposure:** This product may be irritating to eyes, but is unlikely to cause anything more than mild transient discomfort. In case of leakage or damage, the battery contents are very irritating to the eyes.

**Long Term Exposure:** No data for health effects associated with long term eye exposure.

### Ingestion:

**Short Term Exposure:** Significant oral exposure is considered to be unlikely. This product, while believed to be not harmful, is likely to cause headache and gastric disturbance such as nausea and vomiting if ingested in significant quantities. If the battery leaks, the contents may cause severe irritation to the digestive tract.

**Long Term Exposure:** No data for health effects associated with long term ingestion.

### Carcinogen Status:

**SWA:** No significant ingredient is classified as carcinogenic by SWA.

**NTP:** No significant ingredient is classified as carcinogenic by NTP.

**IARC:** No significant ingredient is classified as carcinogenic by IARC.

## Section 12 - Ecological Information

This product is not biodegradable; it may accumulate in the soil or water and cause long term problems.

## Section 13 - Disposal Considerations

**Disposal:** Batteries which have not been fully discharged are considered a reactive hazardous waste product due to the unconsumed lithium remaining in the battery. Disposal by untrained personnel may cause a dangerous incident. We suggest that you contact a specialist disposal company to arrange disposal. Wherever possible, discharge batteries fully before disposal.

Discharged lithium batteries may be accepted by some battery recycling programs, and should be recycled wherever possible. If the batteries cannot be recycled, dispose of fully discharged batteries as household waste.

## SAFETY DATA SHEET

## Section 14 - Transport Information

**Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.**

**UN Number:** 3480, LITHIUM ION BATTERIES

**Hazchem Code:** 4W

**Special Provisions:** 188, 230

**Limited quantities:** ADG 7 specifies a Limited Quantity value of NONE for this class of product.

**Dangerous Goods Class:** Class 9: Miscellaneous Dangerous Goods.

**Packing Group:** II

**Packing Instruction:** P903

Class 9 Miscellaneous Dangerous Goods shall not be loaded in the same vehicle or packed in the same freight container with Dangerous Goods of Class 1 (Explosives).

## Section 15 - Regulatory Information

**AICS:** All of the significant ingredients in this formulation are compliant with NICNAS regulations.

## Section 16 - Other Information

**This SDS contains only safety-related information. For other data see product literature.**

### Acronyms:

<b>ADG Code</b>	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 <sup>th</sup> edition)
<b>AICS</b>	Australian Inventory of Chemical Substances
<b>SWA</b>	Safe Work Australia, formerly ASCC and NOHSC
<b>CAS number</b>	Chemical Abstracts Service Registry Number
<b>Hazchem Code</b>	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
<b>IARC</b>	International Agency for Research on Cancer
<b>NOS</b>	Not otherwise specified
<b>NTP</b>	National Toxicology Program (USA)
<b>R-Phrase</b>	Risk Phrase
<b>SUSMP</b>	Standard for the Uniform Scheduling of Medicines & Poisons
<b>UN Number</b>	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (Feb 2016)

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<http://www.kilford.com.au/> Phone (02)8321 8866

## SAFETY DATA SHEET