Tadiran High Energy Lithium Battery
Safety Data Sheet

Section 1. Identification of the material and the supplier

Product: **Tadiran High Energy Lithium Battery, or Sonnenschein Lithium Inorganic Lithium Battery (6194687)**

Voltage: 3.6 volts

ANZ Distributor:	**Getinge Australia**	**Getinge Australia (NZ Branch)**
Address	11 Help Street Level 7, Suite 701 Chatswood NSW 2067 AUS	600 Great South Road Building B, Level 2 Ellerslie, Auckland, 1051 NZ
Telephone	1800 438 464	0800 1 438 4643

Emergency Telephone: **AUS +61 2 8014 4558**
NZ +64 9 929 1483 or **0800 764 766** (National Poison Centre)

Date of SDS Preparation: 13 June 2023

Section 2. Hazards Identification

This substance is NOT hazardous according to the EPA Hazardous Substances (Classification) Notice 2020 - This product is considered as a Manufactured Article.

Warning: Fire, explosion, and severe, burn hazard. Do not recharge, disassemble, heat above 100 °C (series SL-500: 150 °C), incinerate, or expose contents to water.

Protection from charging:
Whenever lithium batteries are not the single power source in a circuit the following measures recommended by Underwriters Laboratories are relevant. The cells should not be connected in series with an electrical power source that would increase the forward current through the cells. The circuit for these cells shall include one of the following:

A. Two suitable diodes or the equivalent in series with the cells to prevent any reverse (charging) current. The second diode is used to provide protection in the event that one should fail. Quality control, or equivalent procedures, shall be established by the device manufacturer to ensure the diode polarity is correct for each unit.

B. A blocking diode or the equivalent to prevent any reverse (charging) current and a resistor to limit current in case of a diode failure. The resistor should be sized to limit the reverse charging) current to the maximums given in the data sheets.

Section 3. Composition / Information on Ingredients

MATERIAL OR INGREDIENTS	Content (wt %)	CAS #
Lithium Metal	2 - 6	7439-93-2
Thionyl Chloride	18 - 47	7719-09-7
Aluminum Chloride	2 - 5	7446-70-0
Lithium Chloride	1 - 2	7447-41-8

Carbon	2 - 5	7440-44-0
Steel, Nickel plated	35 - 73	--
Glass	0 - 2	--
Organic polymers	0 - 2	Different

Section 4. First Aid Measures

The material in this section may only represent a hazard if the integrity of the battery is compromised, or if the battery is physically or electrically abused.

Electrolyte Contact

If in Eyes — Rinse eyes with water for 15 minutes and seek medical attention.

If on Skin — Wash area thoroughly with soap and water and seek medical attention.

If Swallowed — If swallowed, obtain medical attention immediately. Drink milk/water and induce vomiting; seek medical attention.

If Inhaled — With large quantities and irritation of the respiratory tract medical surveillance for 48 hours. Immediately inhale Cortisone Spray, e.g. "Sanasthmax".

Lithium Metal Contact

If in Eyes — Rinse eyes with water for 15 minutes and seek medical attention.

If on Skin — Remove particles of lithium from skin as rapidly as possible. Immediately flush with plenty of water for at least 15 minutes and get medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: No effect under routine handling and use.

Section 5. Fire Fighting Measures

Hazard Type	Cell is not flammable but internal organic material will burn if the cell is incinerated.
Hazards from products	No data available
Suitable Extinguishing media	During a fire with lithium batteries, copious amounts of cold water are an effective medium to prevent expansion of the fire. Do not use warm water or hot water. Lith-X (Class D extinguishing media) is effective on fires involving only a few lithium batteries. Do not use CO2 or Halon type extinguishers. Dry chemical type extinguishers have limited extinguishing potential.
Precautions for firefighters and special protective clothing	Use a positive pressure self-contained breathing apparatus if batteries are involved in a fire. Full protective clothing is necessary. During water application caution is advised as burning pieces of lithium may be ejected from the fire. Where the cells or batteries are not at the center of the fire copious amounts of water may be supplied to the cells using a diffuser type nozzle so that the cells remain cool during the containment and extinguishing of the fire. A sprinkler system should be sufficient for this purpose the critical factor being that the lithium cells do not experience temperatures above the melting point of lithium. Small amounts of water should never be used such as the volumes contained within portable fire extinguishers. Standard dry powder

	extinguishers are ineffective. Halon extinguishers must not be used when fighting lithium fires as toxic gases may be generated during firefighting. It should be noted that a hazard of hydrogen formation exists whenever hot lithium metal comes into contact with water.
HAZCHEM CODE	**4Y**

Section 6. Accidental Release Measures

Wear protective equipment as detailed in Section 8.
When the battery housing is damaged, small amounts of electrolyte may leak. Seal battery airtight in a plastic bag, adding some chalk (CaCO3) or lime (CaO) powder or Vermiculite. Electrolyte traces may be wiped off dryly using household paper. Rinse with water afterwards.

Section 7. Handling and Storage

Precautions for Handling:

- Do not allow terminals to short-circuit.

Precautions for Storage:

- Storage preferably in a cool (below 21 °C), dry area that is subject to little temperature change.
- Do not place near heating equipment, nor expose to direct sunlight for long periods. Elevated temperatures can result in reduced battery service life.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	**TWA ppm**	**TWA mg/m³**	**STEL ppm**	**STEL mg/m³**
Thionyl chloride [7719-09-7]	Ceiling	1		

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices APRIL 2022 13TH EDITION.

Engineering Controls
Lithium batteries are products, from which no substance is released under normal and reasonably foreseeable conditions of use.

Personal Protection Equipment:

Eyes	Not required.
Hands	Not required for handling of cells.
Skin	Steel toed shoes recommended for large container handling.
Respiratory	Not required during normal operations. SCBA required in the event of a fire.

Section 9 Physical and Chemical Properties

Appearance	Solid
Colour	Not available
Odour	Not available
Odour Threshold	Not available
pH (typical)	Not available

Boiling Point	Not available
Melting Point	Not available
Freezing Point	Not available
Flash Point	Not available
Flammability	Not available
Upper and Lower Explosive Limits	Not available
Vapour Pressure	Not available
Vapour Density	Not available
Relative Gas Density	Not available
Water Solubility	Insoluble
Partition Coefficient:	Not available
Auto-ignition Temperature	Not available
Viscosity	Not available
Particle Characteristics	Not available

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Possibility of hazardous reactions	May rupture violently when heated above 150 °C or when charged.
Conditions to Avoid	Avoid exposure to heat, open flame, and corrosives. Do not puncture, crush or incinerate.
Incompatible Materials	None during normal operation.
Hazardous Decomposition Products	No data available.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Does not contain any ingredients classified as acutely toxic.
Dermal	Does not contain any ingredients classified as acutely toxic.
Inhalation	Does not contain any ingredients classified as acutely toxic.
Eye	Does not contain any ingredients classified as an eye irritant/corrosive.
Skin	Does not contain any ingredients classified as an skin irritant/corrosive.

Chronic Effects:

Carcinogenicity	Does not contain any ingredients classified as carcinogenic.
Reproductive Toxicity	Does not contain any ingredients classified as toxic for reproduction.
Germ Cell Mutagenicity	Does not contain any ingredients classified as mutagenic.
Aspiration	Does not contain any ingredients classified as Asp Tox.
STOT/SE	Does not contain any ingredients classified as STOT SE.
STOT/RE	Does not contain any ingredients classified as STOT RE.

Section 12. Ecotoxicological Information

Not classified as dangerous for the environment. The batteries do not contain mercury, cadmium or other heavy metals.

Section 13. Disposal Considerations

Disposal Method:
Dispose of according to local regulations as per battery disposal.

Disposal methods to avoid: Do not pierce, crush or burn.

Section 14 Transport Information

This product is classified as a Dangerous Good for transport in NZ ; NZS 5433:2020 and SNZ HB 5433:2021

Road, Rail, Sea and Air Transport

UN No	3090
Class - Primary	9
Packing Group	III
Proper Shipping Name	LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT, or LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT
Marine Pollutant	No
Special Provisions	188 230 310

Section 15 Regulatory Information

This substance is NOT hazardous according to the EPA Hazardous Substances (Classification) Notice 2020 - This product is considered as a Manufactured Article.

Section 16 Other Information

Glossary

EC_{50}	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
HSW	Health and Safety at Work.
LC_{50}	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD_{50}	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017
2. Workplace Exposure Standards and Biological Exposure Indices April 2022 edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2020
5. HSW (Hazardous Substances) Regulations 2017

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