

Technical Notice

Safety data sheet

state of revision: 2004-05-11

1. Identification

- 1.1** Product Name: Inorganic Lithium Battery
Voltage: 3.6 Volts
Chemistry System: Lithium thionyl chloride
Anode: Lithium metal
Cathode: Liquid, thionyl chloride
- 1.2** Company: Sonnenschein Lithium GmbH
Industriestr. 22
D-63654 Büdingen
- Telephone: +49(0)6042/954-0, Fax-190
- 1.3** Emergency Telephone Number: +49(0)6042/954-599

2. Composition/Information on Ingredients

Substance	CAS No.	Approximate percent of total weight	Hazard symbol	R-phrases
Lithium Metal	7439-93-2	2 - 6	F, C	14/15-34
Thionyl Chloride	7719-09-7	18 - 47	C	14-34-37
Aluminium Chloride	7446-70-0	2 - 5		
Lithium Chloride	7447-41-8	1 - 2		
Carbon	7440-44-0	2 - 5		
Steel, Nickel plated	----	35 - 73		
Glass	----	0 - 2		
PVC	9002-86-2	0 - 1		
PMMA	9011-14-7	0 - 1		
PTFE	9002-84-0	0 - 1		

- Hazard Symbols: C Corrosive
F Highly flammable
- R-Phrases: R 14 Reacts violently with water
R 14/15 Reacts violently with water liberating extremely flammable gases
R 34 Causes burns
R 37 Irritating to respiratory system

Important Note: 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.

5. **Fire - fighting measures**

A. **Extinguishing Media**

- Copious amounts of cold water is an effective extinguishing medium for lithium batteries.
- 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

B. **Fire Fighting Procedures**

- 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.

6. **Accidental release measures**

When the battery housing is damaged, small amounts of electrolyte may leak. Seal battery air tight 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.

7. **Handling and Storage**

- Do not allow terminals to short-circuit.
- 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.

8. **Exposure controls / personal protection**

Not applicable

9. **Physical and chemical properties**

Not applicable

10. Stability and reactivity

May rupture violently when heated above 145 °C or when charged.

11. Toxicological information

Not applicable

Refer to information under item 2.

12. Ecological information

The batteries do not contain mercury, cadmium or other heavy metals.

13. Disposal Considerations

- Dispose by incineration or burial at permitted waste treatment and/or disposal sites.
 - Batteries do not contain hazardous materials according to EC directives 91/157/EEC and 93/86/EEC.
 - For large quantities a disposal service is offered upon request.
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14. Transport information

Class 9

UN 3090: LITHIUM BATTERIES

UN 3091: LITHIUM BATTERIES CONTAINED IN EQUIPMENT, or
LITHIUM BATTERIES PACKED WITH EQUIPMENT

Packing group: II

Special provisions and packing instructions:

ADR, RID: 188, 230, 310, 636, P903, P903a

IATA: A45, A88, A99, P903, P912, P918

IMDG-Code: 188, 230, 310, P903

EmS: F-A, S-I

Storage and segregation: Category A

For more information see www.sonnenschein-lithium.de > site map > Transport Regulations

15. Regulatory information

Not applicable

16. Other information

- Sonnenschein Lithium Batteries are registered by Underwriters Laboratories, Northbrook, U.S.A. under file MH 12827.
 - Further information is given in
 - Sonnenschein Lithium Product Data Catalogue
 - Sonnenschein Lithium Technical Brochure.
 - For lithium batteries in general, Safety standard IEC 60086-4 applies. It contains detailed recommendations for manufacturers of equipment and users.
 - Visit our web site under www.sonnenschein-lithium.de.
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