

Novega Produktionssysteme GmbH, Gewerbepark 2, 87477 Sulzberg (See)

Revised: 2008-07-15_Rev.1.1

Distribution Class 1 General

Technical Notice**Safety data sheet lithium battery 350-17350****1. Identification:**

1.1	Product Name	Novega High Energy Lithium Battery
	Voltage:	3.6 Volts
	Chemistry System:	Lithium thionyl chloride
	Lithium quantity	0,65g per battery in one beacon
	Anode:	Lithium metal
	Cathode:	Liquid, thionyl chloride
1.2	Company:	Novega Produktionssysteme GmbH Gewerbepark 2 D-87477 Sulzberg (See)

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.

3. Hazards Identification

Warning: Fire, explosion, and severe burn hazard. Do not recharge, disassemble, heat above 100°C, incinerate, or expose contents to water.

4. First Aid Measures**A. Electrolyte Contact**

- Skin Immediately flush with plenty of water for at least 15 minutes. If symptoms are present after flushing, get medical attention.
- Eyes Immediately flush with plenty of water for at least 15 minutes and get medical attention.
- Respiratory system with large quantities and irritation of the respiratory tract medical surveillance for 48 hours.

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B. Lithium Metal Contact

- 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.
 - Eyes Immediately flush with plenty of water for at least 15 minutes and get immediate medical attention.
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5. Fire fighting measures

A. Extinguishing Media

- During a fire with lithium batteries, copious amounts of cold water is 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

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.
 - Where the cells or batteries are not at the centre 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 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 fire fighting. It should be noted that a hazard of hydrogen formation exists whenever hot lithium metal comes into contact with water.
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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.
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8. Exposure controls / personal protection

Not applicable

9. Physical and chemical properties

Not applicable

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10. Stability and reactivity

May rupture violently when heated above 150 °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

15. Regulatory information

Not applicable

16. Other information

- Novega Lithium Batteries are registered by Underwriters Laboratories, Northbrook, U.S.A. under file MH 12827.
 - For lithium batteries in general, Safety standards IEC 60086-4 applies. It contains detailed recommendations for manufacturers of equipment and users.
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The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customer