ER34615M (D)

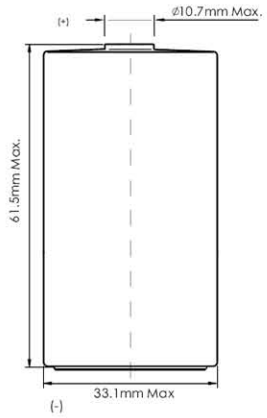
3.6V Lithium Thionyl Chloride Battery
Made in China

Technical Data Sheet

Specifications

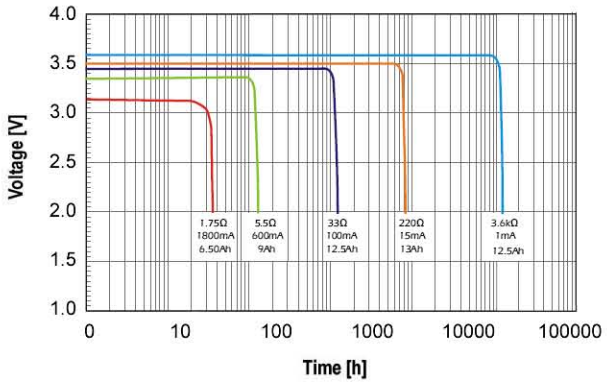
Rated Voltage	3.6V
Nominal Capacity (At 10mA, +25℃, 2.0V cut off. the capacity restored by the cell varies according to current drain,temperature and cut off voltage)	13.0Ah
Max. recommended continuous Current (Toget 50% of the nominal capacity at +25℃ with 2.0V cut off)	2000mA
Max. Pulse Current capability Pulse capability varies according to pulse characteristics, temperature, cell history and the application's acceptable minimun voltage	4000mA
Typical Weight	108g
Operating Temperature	-55℃~+85℃
Storage (recommended) (possible without leakage)	Max 30℃

Dimensions

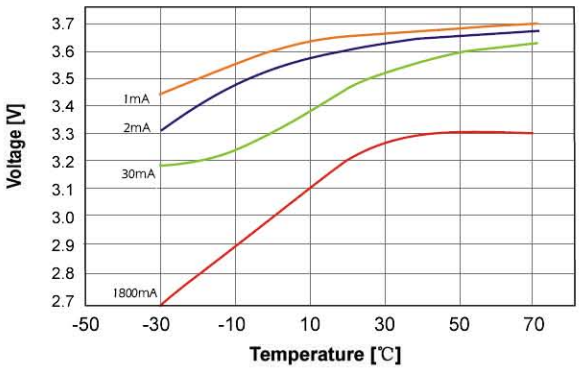


Performance

Discharge performance at 23℃

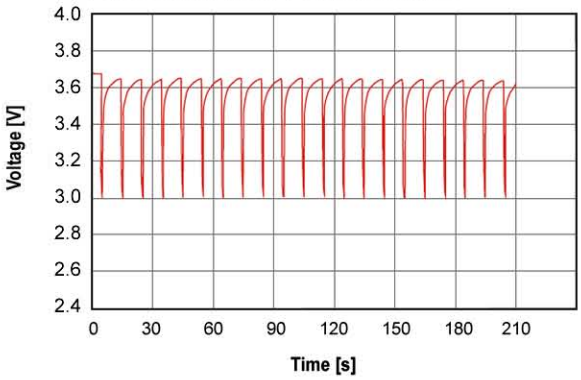


Voltage VS.Temperature

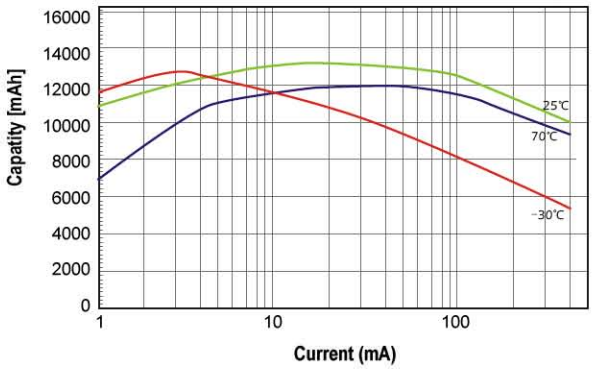


Storage Characteristics

Pulse Current: 4000mA Temperature: 25℃



Capacity at various Current



Warning:

- Fire explosion and sever burn hazard
- Do not recharge,crush,disassemble
- Never solder the body of the battery directly
- Never use or heat the battery out of the operating temperature range
- Please operate according to the specification and remarks of GEB
- Data above is for reference

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General Electronics Battery Co., Ltd

Material Safety Data Sheet

Lithium/ Thionyl chloride single cells and multi-cell battery packs
ER34615M

1. Identification of the Substance or Preparation and Company

Product	**Primary Lithium/ Thionyl chloride Battery** **ER34615M**
Product site	**General Electronics Battery Co., Ltd.** **Tel: 0755-81762726** **Fax: 0755-81762723**

2. Composition & Information on Ingredients

Each cell consists of a hermetically sealed stainless steel container containing a number of chemicals and materials, of which the following could potentially be hazardous upon release.	
Ingredient	Content
Lithium (Li)	3.1%
Thionyl chloride ($SOCl_2$)	37.4%
Lithium aluminum tetrachloride ($LiACl_4$)	6.7%
Acetylene Black (Carbon C)	4.4g

3. Hazards Identification

Do not short circuit, recharge, puncture, incinerate, crush, immerse, force discharge or expose to temperatures above the declared operating temperature range of the product. Risk of fire or explosion. The Lithium-Thiony chloride batteries described in this Material Safety Data Sheet are sealed units, which are not hazardous when used according to the recommendations of the manufacturer. Under normal conditions of use, the electrode materials and liquid electrolyte they contain are not exposed to the outside, provided the battery integrity is maintained and seals remain intact. Risk of exposure only in case of abuse (mechanical, thermal, electrical), which leads to the break of the glass seal and/ or the rupture of the battery containers. Electrolyte leakage, electrode materials reaction with moisture / water or battery vent/ explosion/fire may follow, depending upon the circumstances.

4. First Aid Measures

Inhalation	Remove from exposure, rest and keep warm. In severe cases obtain medical attention.
Skin contact	Wash off skin thoroughly with water. Remove contaminated clothing and wash before reuse. In severe cases obtain medical attention.
Eye contact	Irrigate thoroughly with water for at least 15minutes, Obtain medical attention.
Ingestion	Wash out mouth thoroughly with water and give plenty of water to drink. Obtain medical attention.
Further treatment	All cases of eye contamination, persistent skin irritation and casualties who have swallowed this substance or been affected by breathing its vapors should be seen by a Doctor.

5. Fire Fighting Measures

CO_2 extinguishers or copious of water-based foam can be used to cool down burning Li-$SOCl_2$ cells and batteries, as long as the extent of the fire has not progressed to the point that the lithium metal they contain is exposed. Do not use for this purpose sand, dry powder or soda ash, graphite powder or fire blankets. Check with local regulations. Use only metal (Class D) extinguishers on raw lithium.	
Extinguishing media	Use water or CO_2 on burning Li-$SOCL_2$ cells or batteries and class D fire extinguishing agent only on raw lithium.

6. Accidental Release Measures

Remove personnel from area unit fumes dissipate. Do not breathe vapors or touch liquid with bare hands. If the skin has come into contact with the electrolyte, it should be washed thoroughly with water. Sand or earth should be used to absorb any exuded material, seal leaking battery and contaminated absorbent material in plastic bag and dispose of as special waste in accordance with local regulations.

7. Handling and storage

Handling	Do not crush, pierce, short (+) and (-) battery terminals with conductive (i.e. metal) goods. Do not directly heat or solder. Do not throw into fire. Do not mix batteries of different types and brands. Do not mix new and used batteries. Keep batteries in non conductive (i.e. plastic) trays.
Storage	Store in a cool (preferably below 30°C) and ventilated area, away from moisture, sources of heat, open flames, food and drink .Keep adequate clearance between walls and batteries .Temperature above 100°C may result in battery leakage and rupture .Since short circuit can cause burn, leakage and rupture hazard, Keep batteries in original packing unit use and do not jumble them.
Other	Lithium-Thionyl chloride batteries are not rechargeable and should not be tentatively changed .Follow Manufacturers recommendation regarding maximum recommended currents and operating temperature range .Applying pressure on deforming the battery may lead to disassembly followed by eye ,skin and throat irritation

8、Exposure Control Personal Protection

Respiratory protection	In all fire situation, use self-contained breathing apparatus
Hand protection	In the event of leakage wear gloves
Eye protection	Safety glasses are recommended during handing
Other	In the event of leakage, wear chemical apron

9、Physical and Chemical Properties

Appearance	Cylindrical shape
Odor	If leaking, gives off a pungent corrosive odor
Ph	Not applicable
Flash point	Not applicable unless individual component exposed
Flammability	Not applicable unless individual component exposed
Relative density	Not applicable unless individual component exposed
Solubility (water)	Not applicable unless individual component exposed
Solubility (other)	Not applicable unless individual component exposed

10、Stability and Reactivity

Product is stable under conditions described in section 7	
Condition to avoid	Heat above 100^{o}C or incinerate. Deform. Mutilate. Crush. Pierce. Disassemble. Recharge. Short circuit. Expose over a long period to humid conditions.
Materials to avoid	Oxidizing agents, alkalis, and water. Avoid electrolyte contact with aluminum or zinc.
Hazardous decomposition products	Hydrogen (H_2) as well as Lithium oxide (Li_2O) and Lithium hydroxide (LiOH) dust is produced in case of reaction of lithium metal with water. Chlorine(Cl_2), Sulfur dioxide(SO_2) and Disulfur dichloride (S_2Cl_2) are produced in case of thermal decomposition of thionyl chloride above 140℃, hydrochloric acid (HCl) and Sulfur dioxide (SO_2) are produced in case of reaction of thionyl chloride with water at room temperature, Hydrochloric acid (HCl) fumes, Lithium oxide(Li_2O),Lithium hydroxide (LiOH) and aluminum hydroxide($Al(OH)_3$) dust are produced in case of reaction of Lithium tetrachloride aluminum($LiAlCl_4$) with water.

11. Toxicological Information

Signs & symptoms	None, unless battery ruptures, in the event of exposure to internal contents, corrosive fumes will be very irritating to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.
Inhalation L	Lung irritant
Skin contact	Skin irritant
Eye contact	Eye irritant
Ingestion	Tissue damage to throat and gastro-respiratory tract if swallowed.
Medical conditions generally aggravated	In the event of exposure to internal contents, eczema, skin allergies, lung injuries, asthma and other respiratory disorders may occur.

by exposure	

12. Ecological Information

Mammalian effects	None known if used/disposed of correctly
Eco-toxicity	None known if used/disposed of correctly
Bioaccumulation potential	None known if used/disposed of correctly
Environmental fate	None known if used/disposed of correctly

13. Disposal Considerations

Do not incinerate, or subject cell to temperatures in excess of 100℃. Such abuse can result in loss of seal, leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations.

14. Transport Information

General Consideration	The batteries are not subject to the transport regulation for dangerous goods, because they fulfill the following requirement. The batteries are certified by UL for safety. The batteries are isolated in the packaging to avoid short circuits. The packs are marked as UN and US DOT required. The total mass per pack is not exceeding 30Kg. If any emergency occurs, follow the measures specified in Sections 5 and 6 to terminate the emergency.
Label for conveyance	Use Miscellaneous Class 9 label.
Shipping name	Lithium batteries
UN number	UN3090
Hazard classification	ADR Class 9
EmS	EMS: F:F-A S:S-I F-A:General fire schedule S-I:Flammable solids (repacking possible)
Packing group	II
Marine pollutant	No

15. Regulatory Information

Risk phrases	Lithium (Li)	Reacts violently with water, liberating extremely flammable gases. Harmful in contact with skin. Harmful if swallowed. Causes burn. Risk of serious damage to eye. May cause sensitization by inhalation and skin contact.

	Thionyl Chloride ($SOCl_2$)	Reacts with water. Harmful if swallowed. Irritating to respiratory system. Risk of serious damage to eye. May cause sensitization by inhalation and skin contact.
	Lithium aluminum tetrachloride ($LiAlCl_4$)	Reacts with water. Harmful if swallowed. Causes burn. Irritating to respiratory system. Risk of serious damage to eye. May cause sensitization by inhalation and skin contact.
Safety phrases	Lithium (Li)	Keep out of reach of children. Keep away from moisture. In case of incident, seek medical attention.
	Thionyl Chloride ($SOCl_2$)	Keep out of reach of children. Keep away from moisture. Avoid contact with skin. In case of contact of with eyes, rinse immediately with plenty of water. Wear suitable protective clothing. Wear suitable gloves. In case of incident, seek medical attention.
	Lithium aluminum tetrachloride ($LiAlCl_4$)	Keep out of reach of children. Keep away from moisture. Do not breathe dust. Avoid contact with skin. In case of contact of with eyes, rinse immediately with plenty of water. Wear suitable protective clothing.

16. Other information

This information has been compiled from sources considered to be dependable and is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy, reliability and completeness of the information contained herein. This information relates to the special materials designated and may not be valid for such material used in combination with any other materials or in any process. It is the use's responsibility to satisfy himself as to the suitability and completeness of this information for his particular use.

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