

Battery Handling Precautions (Primary Cells and Batteries, LI, LM and LIX Series)

Lithium batteries contain combustible materials such as Lithium metal and organic solvents. Proper handling does not lead to particular dangers, but improper handling may cause heat generation, bursting, fire or at least drastically reduced performance.

To prevent accidents, follow these precautions and refer to them in cases they are described in instructions for equipment or similar documents.



Warnings

- 1 **Do not use batteries for unspecified purposes**
Differences in voltage or terminal configuration may cause an imperfect connection, fire, heat generation leakage or bursting
- 2 **Do not charge**
Charging of this battery type generates gas inside the battery and internal pressure will rise, resulting in heat generation, fire, leakage or bursting
- 3 **Do not heat, disassemble nor dispose of into fire**
By doing this the insulation materials will be damaged and lead to heat generation, fire, leakage or bursting
- 4 **Do not insert batteries with the "+" and "-" polarities reversed**
When using 3 or more batteries, the equipment may operate even though one of the batteries is improperly inserted. This may cause leakage or bursting
- 5 **Do not short-circuit**
Short-circuiting of the "+" and "-" poles by metal or similar conductive materials may result in heat generation or bursting. This applies to all objects as tools, jewelry or others.
- 6 **Keep batteries out of children's reach**
If leaked liquid or a battery is swallowed consult a physician immediately
- 7 **In any case of leakage or a strange smell, keep away from fire to prevent ignition of electrolyte or evading gases**
- 8 **Do not use new and used batteries together. Do not use different types of batteries together.**
- 9 **Do not solder directly**
Doing so may damage the insulation materials. It may also cause heat generation, fire, leakage or bursting
- 10 **Do not apply strong pressure nor handle roughly**
It may cause heat generation, fire, leakage or bursting
- 11 **To prevent damage to the safety vent inside, do not deform the battery in any way**

- 12 **Do not force-discharge**
When a battery is force-discharged by another power source, the voltage drops to 0 V or less (= reverse charge status) and gas is generated inside the battery. It may cause heat generation, fire, leakage or bursting
- 13 **Do not damage, remove or disassemble safety features or connections of any kind**



Caution

- 1 **If leaked liquid gets in the eyes, wash them with plenty of clean water and consult a physician**
- 2 **Do not use or leave batteries in direct sunlight nor in high-temperature areas**
Storage above 30 °C (86 °F) is not recommended for longer periods of time. This may result in leakages. Operating LM series batteries higher than 30 °C (86 °F) leads to reduced capacity, increased self discharge (at least double rating for every 10 deg) and lower effective working voltage. Combination of high temperatures and high discharge rates increases the possibility of leakages.
- 3 **Avoid contact with water or any conductive liquid**
This increases rapidly the danger of short-circuit
- 4 **Follow the respective equipment instruction manual and precautions carefully**
Check the suitability of the battery specifications and performance with the equipment requirements
- 5 **Do not expose batteries to areas with high humidity**
This will increase the self discharge rate and lead to heat generation and leakages
- 6 For disposal wrap battery to insulate and avoid short-circuits
- 7 For disposal, local legal regulations must be followed