



Simple Guidelines for Charging Lithium-based Batteries

1. Never put your battery on a charger and leave it unattended i.e. do not charge your battery overnight or leave the area for an extended period. Check the “time required to fully re-charge” and plan to have someone be in attendance.
2. Discontinue using charger and/or battery if the battery gets excessively warm. If the pack temperature rises more than 18 degrees Fahrenheit on a regular charge it is considered too warm.
3. Always charge at moderate temperatures. See below table:

Battery type	Charge temperature	Discharge temperature	Charge advisory
Li-ion	0°C to 45°C (32°F to 113°F)	-20°C to 60°C (-4°F to 140°F)	No charge permitted below freezing. Good charge/discharge performance at higher temperature but shorter life.

4. If the battery does not charge in the approximate time suggested by the manufacturer contact the manufacturer to determine if the problem is with the battery or the charger. Do not continue charging the cell.

Simple Guidelines for Using Lithium-ion Batteries

- Exercise caution when handling and testing lithium-ion batteries.
- Do not short-circuit, overcharge, crush, drop, mutilate, penetrate with foreign objects, apply reverse polarity, expose to high temperature or disassemble packs and cells.
- Use only lithium-ion cells with a designated protection circuit and approved charger.
- Discontinue using the battery and/or charger if the pack temperature rises more than 10°C (18°F) on a regular charge.
- The electrolyte is highly flammable and battery rupture can cause physical injury.
- Use a foam extinguisher, CO2, dry chemical, powdered graphite, copper powder or soda (sodium carbonate) to extinguish a lithium-ion fire. Only pour water to prevent the fire from spreading.
- If the fire of a burning lithium-ion battery cannot be extinguished, allow the pack to burn out on its own in a controlled and safe manner.