



VAPEVINE

LITHIUM-ION SAFETY BOOKLET

THE RECHARGEABLE REVOLUTION IS IN YOUR HANDS

The rechargeable revolution is here, and lithium-ion is now the premier way to store energy. These futuristic cells are powering the next generation of devices. They are the engines powering mods, laptops, cars, drones, phones, and even the Mars rovers.

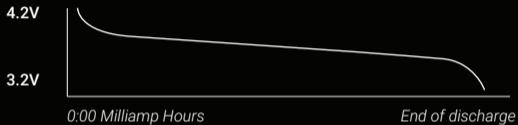
The golden rule is: if your battery gets unusually hot, let it rest.

The 18650 cell contains flammable chemicals such as organic solvents. If the battery is mishandled, it may cause fire, smoke, or an explosion and the battery's functionality will be seriously damaged. 18650 batteries are the most popular type of lithium-ion batteries. Even though there are many safety precautions, they are surprisingly hardy and safe-to-use. Each authentic cell is rigorously tested for safety, including one-meter drop tests, before they reach you. Nonetheless, you must treat your 18650 battery with respect.

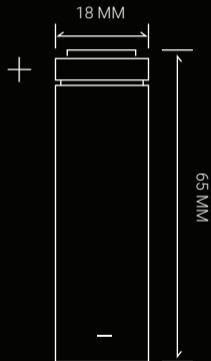
The two most common mistakes people make:

- 1. Exceeding your battery's maximum continous discharge rating.** High-drain cells are rated for use at 20 amps or higher (check your model's specs).
- 2. Short-circuiting your battery.** NEVER place a battery in your pocket! Or put them somewhere with loose change, metal objects, or other loose batteries.

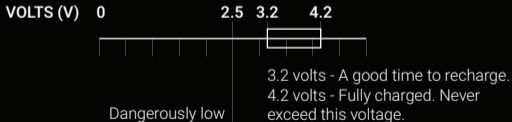
TYPICAL DISCHARGE CURVE



SIZE



TYPICAL VOLTAGE SPECTRUM



SAFETY PRECAUTIONS



1. IMMERSION

Do not immerse the battery in liquid such as water, ocean water, soda, or beer.



2. HIGH TEMPERATURE

Do not use or place the battery near fire or high temperatures (more than 70°C).



3. WRONG CHARGER

Do not use unauthorized chargers. Max. charge should be 4.20V for most 18650s.



4. REVERSE POLARITY

Make sure the + and - poles are oriented correctly. Do not force into the mount.



5. DIRECT CONNECTION

Do not connect the battery with AC plug (outlet) or car plugs.



6. SHORT-CIRCUIT

Do not connect the + and - terminals with conductive material. Keep out of pockets.



7. IMPACT

Avoid unnecessary impact to the battery. Keep in a hard case during transport.



8. PENETRATION

Be careful to not penetrate with a nail or strike with a hammer.

SAFETY PRECAUTIONS



9. SOLDERING

Do not directly solder on to the battery: the insulator could melt or damage the vent.



10. DISASSEMBLY & RECONSTRUCTION

Do not disassemble the battery. You may damage the protection circuit or worse.



11. DEFORMATION

Do not use a battery with conspicuous damage or deformation.



12. INGESTION

The battery should be kept away from infants.



13. STORING

Do not put the battery in the microwave or other cooking appliances.



14. MIXED USE

Do not use the battery with other batteries unless they will always be used together.



15. RUST, COLOR CHANGE

Stop using battery if there is abnormal smell, heat, deformities, or discoloration.



16. CHARGING TIME

Stop charging if the battery cannot finish charging within the specified time.

SAFETY PRECAUTIONS



17. LEAKAGE

Do not touch leaking battery. Battery liquid in your eye will cause significant damage.



18. TRANSPORT

To prevent short-circuits or damage, tightly pack the battery in a case or box.



19. DIRECT SUNLIGHT

Do not use or leave the battery in excessive heat such as in a car in direct sunlight.



20. STATIC ELECTRICITY

Do not use battery where it generates more than 100V of static electricity.



21. CHARGING TEMPERATURE

The charging temperature range is regulated between 10°C and 45°C.



22. MANUAL

You should read both the manual for your device and the battery charger before use.



23. USE BY CHILDREN

Parents must teach how to use the battery and system, and check back periodically.



24. FIRST TIME USE

If battery has unusual odor, heat generation, or rusts, contact vendor.

SAFETY PRECAUTIONS



25. FLAMMABLE MATERIALS

Do not charge or discharge near flammable materials like a bed mattress.



26. LEAKAGE ON SKIN

If leakage gets on skin or clothing, flush with water to help prevent irritation.



27. INSULATION

If wires or metal objects come out from battery, please seal and insulate them.



28. RECYCLE

Recycle battery at local battery drop-off point or contact vendor you bought from.

GLOSSARY

OHM'S LAW

Voltage = current (amps) x resistance (ohms).

AMPS (A)

Ampere (A) is a unit of electric current.

MILLIAMP-HOUR (mAh)

The most common battery capacity rating.

VOLT (V)

The unit of electromotive force (amps x ohms).

WATT (W)

The rate of energy consumption (volts x amps).

PARALLEL CONNECTION

Batteries are connected to increase capacity.

SERIAL CONNECTION

Batteries are connected to increase voltage.

STAY SAFE

Please note: This booklet is an unofficial guide. It is not a substitute for official guides like safety manuals and data sheets. Failure to research and follow official handling rules can make you liable for misuse.