

Lithium-ion batteries are widely used in consumer products such as smartphones, tablets, and micromobility devices (e.g. e-scooters, e-bikes, hoverboards, etc.). However, lithium-ion batteries have the potential to catch fire, explode, and release toxic gases. These fires are also intense and can be difficult to extinguish due to a chemical reaction called thermal runaway. Users should follow the steps below to ensure their safety and others around them while using products that are powered by these devices.

Key Hazards

- **Thermal Runaway** – a chain reaction in lithium-ion batteries where overheating causes battery failure, leading to intense fire and rapid, uncontrollable heat increases.
- **Fire and explosion** – overcharging or incompatible charging equipment can cause batteries to rupture, leak, or explode.
- **Toxic Fumes** – burning batteries release hazardous chemicals, including carbon monoxide and hydrogen cyanide
- **Surface Overheating** – charging on soft surfaces (pillows, couches) blocks heat dissipation, increasing fire risks.

Micromobility & Cellular Devices Using Lithium Ion Batteries

- **Use** micromobility products that have demarcation with UL, CE, or other safety certification.
- **Only use the manufacturer-supplied** charger (cord and power adapter).
- **Avoid swapping cables, cords, and chargers** between devices of different sizes and different manufacturers
- **Do not leave** devices unattended when charging, and do not charge overnight, unplug when done.
- **Avoid overcharging** – only charge to an optimal range of 40%-80% to minimize stress on the batteries.
- **Avoid extreme levels** – allowing the battery to hit 0% (full discharge) or keeping it at 100% for long periods can shorten its lifespan
- **Do not charge** in direct sunlight or extreme heat (over 95°F)
- **Remove the case** if the phone feels hot while charging.
- **When charging**, place the device on a hard, flat, non-combustible surface (metal, stone, etc.) and away from flammable materials.
- **Do not block** your primary exits when charging micromobility devices.
- **Never use** a micromobility device with a battery pack that has been modified/reworked or re-purposed with used cells.
- **Stop using** the device if the battery has an odor, changes color, leaks, warps, or makes noises.



- **Always follow the manufacturer's instructions** for proper charging and storage.

Disposal

- **Never throw** lithium batteries into the trash or general recycling.
- **If the battery is in good condition** (not leaking, swollen, or burned, follow these instructions: [Facilities Management's guidance under "Batteries / Printer Cartridges" on their recycling website](#)
- **If the battery is in poor condition** such as leaking, swollen, or has caught on fire, then submit a hazardous waste pickup request: [Hazardous Waste Pickup Request](#)
- **For emergencies** involving battery fires immediately call 9-1-1.



Additional Information

- [Lithium-ion Battery Safety](#) – OSHA Fact Sheet describing potential, chemical, & safety hazards when using Lithium-Ion batteries, and methods to control and/or mitigate the hazards.
- [Undergraduate Housing Policies](#) – UCI policy to reference regarding Transportation and Personal Micromobility Devices in undergraduate housing.
- [UCI E-Scooters, Skate Devices, and Pedestrian Safety](#) – Safety tips and reminders on how to safely ride micromobility devices on campus and being mindful of pedestrians and their safety
- [Electric Scooter & Skate Device Map](#) – Map of acceptable routes micromobility devices are permitted.
- [E-Bike and E-Scooter Safety](#) – National Fire Protection Association (NFPA) guidance on safety tips with e-bikes and e-scooters.
- [U.S. Consumer Product Safety Commission - Micromobility: E-Bikes, E-Scooters and Hoverboards](#) – Safety guidance from U.S. Consumer Product Safety Commission for before, during, and after your ride on micromobility devices.

Electrical Safety Foundation International Flyers

Lithium Ion Battery

[Protect your Electric Bike and Electric Scooter](#)

[Sign of a Battery Problem](#)

[How to Store and Charge Batteries: Lithium-Ion Battery Safety](#)