

Lithium-Ion Battery Safety

“In 2022, there were 216 fires in NYC linked to batteries resulting in 147 injuries and 6 deaths.”¹

“As of Feb 2023, at least 30 fires, 40 injuries, and 2 deaths were caused by lithium-ion batteries.”¹

Lithium-ion batteries are integral to many of the world’s commonly used rechargeable electronic devices, from smart phones, laptops and tablets, to scooters, bikes and electric cars. As they become more prevalent in the community, the need to address their risks and how to use them safely increases.

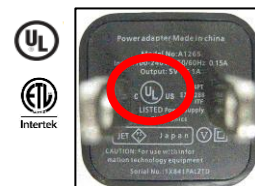
Hazards & Risks

- Lithium-based batteries are capable of storing a large amount of energy in a small containment unit.
- Batteries are designed to be used in a specific manner, deviations from this can be dangerous.
- Like any consumer product, defects can be found in a small number of these batteries leading to overheating, fire, or explosion.



Safety Guidelines

- **Purchase** and use devices from reputable sources and only batteries and devices that have an **Underwriters Laboratories (UL)** or **Electrical Testing Laboratories (ETL)** mark, which indicate that the battery and/or device has been safety tested and will perform as expected compared to non-UL or non-ETL products.
- **Charge** the device or batteries in accordance with the manufacturer’s instructions at all times.
- **Charge** the device using **chargers** that bear the UL or ETL mark, and do not overload outlets.
- **Charge** the device in a safe place, never under a pillow, on a bed or couch, or similar setting. **“Fleet charging” of multiple e-scooter or e-bike batteries is NOT permitted** inside any Columbia University campus or residential building or on Columbia University property.
- **Store** the device/battery at **room temperature**, out of direct sunlight.
- **Store** the device/battery away from **open flames** or anything flammable.
- **Discontinue use immediately** if a battery or device appears to be **overheating, bulging, changing color, leaking, or emitting a strange odor or sound**. If safe to do so, **unplug and move the object** away from anything combustible and call 911.



Battery Disposal

- Do not discard lithium-ion batteries in trash.
- Follow chemical/hazardous waste procedures for disposal of fabricated batteries in research.
- Non-damaged small (< 2 lbs. in weight) batteries should be placed in one of the many specific battery recycling bins found on campus (Scan QR code for locations).
- Prior to battery recycling place clear tape on battery terminals to prevent contact with another terminal and a short circuit.



For any question, contact EHS@columbia.edu, cumcfiresafety@columbia.edu, or FireSafety@columbia.edu

1. Wilde, J. (2023, March 6). *E-bike batteries are exploding, setting buildings on fire*. Morning Brew. Retrieved March 7, 2023, from https://www.morningbrew.com/daily/stories/2023/03/06/e-bike-batteries-are-exploding-fire?cid=30749356_2095005&mid=a4cd0982cd7292ba9a2a4b76b4c3312&utm_campaign=mb&utm_medium=newsletter&utm_source=morning_brew