

ENVIRONMENTAL HEALTH AND SAFETY

RESEARCH SAFETY

LITHIUM-ION BATTERIES



Lithium-Ion Battery Safety

Lithium-ion batteries are widely used across Purdue University. They power everything from smartphones, laptops and tablets to scooters, e-bikes, electric vehicles, power tools and many research devices that require portable electrical power. These batteries are commonly chosen for their lightweight design, high energy density and long lifespan.

While lithium-ion batteries offer many advantages, they also present potential safety risks if not handled properly.

Potential hazards

- Fire and explosion: Batteries can ignite or explode if damaged, improperly charged or exposed to extreme temperatures.
- Chemical exposure: Lithium-ion batteries contain materials such as lithium, cobalt and nickel that can be hazardous if released.

Safety best practices

- Use manufacturer-approved chargers and avoid overcharging batteries.

- Store batteries in cool, dry areas away from flammable materials.
- Regularly inspect batteries for signs of swelling, leakage or physical damage.
- Follow manufacturer guidance for charging and storage.

Emergency preparedness

Laboratories and work areas using lithium-ion batteries should have clear procedures for responding to battery-related incidents. This may include access to appropriate fire extinguishers, emergency protocols and Safety Data Sheets (SDS) to guide proper response to spills or leaks.

Recycling and disposal

Many manufacturers and local programs offer battery take-back or recycling options. Proper disposal of lithium-ion batteries is essential to prevent environmental contamination and reduce fire risks associated with improper disposal.

Following these safety practices can help ensure lithium-ion batteries continue to be used safely across campus while supporting research, learning and daily operations.



Administrative Operations

Environmental Health & Safety

Phone: 765-494-6371 • Email: researchsafety@purdue.edu