

Safe Lithium Battery Usage on Campus

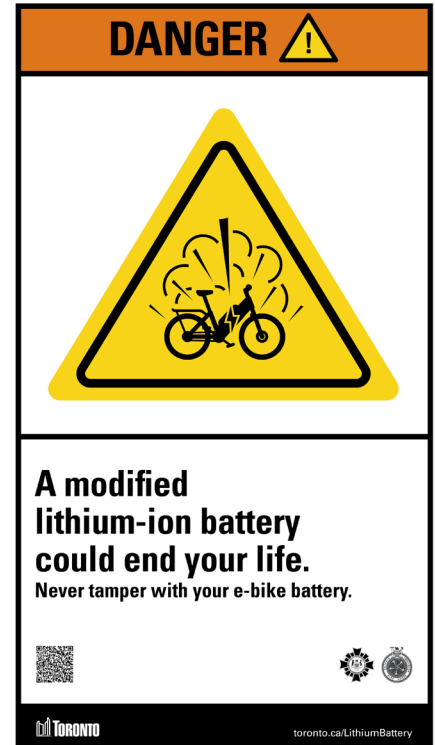
Lithium batteries are commonly found in cell phones, laptops, electric power tools, e-bikes and assistive devices such as wheelchairs and mobility scooters. While generally safe, they can potentially lead to fires if mishandled. Always follow the manufacturer's guidelines. In the case of a lithium battery fire/explosion, you must act quickly due to its rapid spread.

For lithium batteries used for research or project purposes, please refer to the research risk assessments. This tip sheet is not intended to replace the risk assessment and is intended for safe recreational use.

This tip sheet provided guidance on how you can protect yourself and others and prevent lithium battery fires.

Charging lithium batteries

- Only use chargers that have one of the recognized Canadian certification marks such as CSA, cUL, or cETL. Follow all the manufacturers instructions and warnings.
- Do not modify or tamper with your battery.
- Once the battery is full, disconnect it from the charger.
- Use the charger that came with the device, or as permitted by the manufacturer.
- Monitor your devices while they are charging in case they overheat.
- Charge e-bikes on surfaces that cannot catch on fire such as concrete floors or tiles and away from flammable materials.
- Avoid charging your battery in sub-zero temperatures, as this can cause dendrite growth on the Li-ion cells, leading to short circuits and fire hazards.
- If a battery has been exposed to very cold temperatures, allow it to warm up to room temperature before charging.



- Avoid charging in high temperatures (above 40°C) as this can lead to thermal runaway and accelerated battery degradation (ideal charging temperature range between 10 °C to 30 °C).
- Ensure the charging area is well-ventilated and away from direct sunlight or heat sources
- Do not charge or store batteries near a single exit point.

Storing lithium batteries

- Avoid storing a device in a highly damp or humid environment.
- Store batteries at temperatures between 0°C or 40°C and keep it away from anything that can catch fire.
- When storing the battery for a long time, charge it to about 60%.
- Regularly inspect the battery for signs of damage and replace immediately. Do not use batteries that have been damaged.

E-bikes and assistive devices at TMU

- Do not charge e-bikes on campus, including offices, classrooms and washrooms. If you must charge your assistive device such as wheel-chairs or mobility scooters on campus, do not leave it unattended.
- TMU offers [bicycle parking](#).
- Ensure the device is turned off when inside any buildings.

Reminder: Electric scooters are not permitted for use in most public spaces in Toronto

It's important to note that as per the [City of Toronto Municipal Code](#) Chapters 950, 886 and 608, e-scooters are not allowed to be operated, left, stored or parked on any public street in Toronto. They are not permitted on roadways (vehicle lanes), bicycle lanes (painted only), multi-use trails or paths (including those designed for pedestrians or, joggers, etc), or sidewalks.



Disposing of lithium batteries

- Lithium batteries should never be placed in garbage bins, blue bins or green bins as they are hazardous waste.
- Lithium batteries should be brought to one of the [city's drop-off](#) or [community environment day](#) depots for safe disposal.
- A free [Toxic Taxi pickup](#) can be arranged from the city if there is between 10 to 50 litres/kilograms of household waste. If you do not live in Toronto, check your municipality's programs for hazardous waste.
- Drop off damaged lithium batteries for safe disposal as soon as possible.
- Lithium batteries are not part of the battery recycling program at TMU and so cannot be disposed of on campus.

Emergency procedure in case of a fire

- Evacuate the area immediately.
- Activate the nearest fire alarm.
- Call 911 and if it is safe to do so, notify TMU Security at 416-979-5040.