

Lithium-Ion Battery Fires

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Lithium-Ion battery fires are becoming an increasing safety issue for consumers. As many have seen in the news recently, they are causing major fires when the battery overheats or becomes compromised. The batteries are used in everyday items ranging from cell phones, laptops, e-bikes and up to larger ones found in automobiles. When these batteries fail, they usually overheat giving off a flammable toxic gas that can ignite with an explosive fire.

The batteries themselves get to this explosive state by being subjected to one of the following situations:

- If the battery becomes too hot or too cold, it can have a thermal reaction.
- If it has been impacted, crushed, or pierced it will have a physical reaction.
- Overcharging or forced discharging can cause a short circuit or an electrical malfunction.
- If the battery becomes wet, it may have a chemical reaction.

All or just one of these may be the reaction needed to start a fire.

If a fire does occur, it can be very difficult to extinguish. Most lithium-ion battery fires take copious amounts of water to extinguish. Even after extinguishment, the battery can rekindle on its own up to 24 hours later. The best option if there is a fire is to extinguish the fire initially with water (dry chemical extinguishers are ineffective on this type of fire) and then find a container that will fit the size of the unit on fire and place it in the container submerged in water.

Following a few safety precautions can lessen the chance of a lithium-ion battery fire.

- Avoid storing the battery in high or low temperatures
- Avoid overcharging the battery
- Do not charge the battery overnight
- If device is hot to the touch while charging, unplug the device
- Routinely inspect the battery for cracks, bulges, or leaks

As always consult the manufacturer's suggested best practices for battery care in the owner's manual. Always use commonsense and error on the side of safety if you feel there is a problem with any lithium-ion battery in any device you may own or use. If you do see a problem, consult with your local fire department for best practice for disposal of a battery that has been compromised.