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PackSafe - Lithium Batteries

Power Banks, cell phone battery charging cases, rechargeable and non-rechargeable lithium batteries, cell phone batteries, laptop batteries, power banks, external batteries, portable rechargers

While, lithium batteries are required to undergo safety testing, all lithium-ion batteries are capable of overheating and undergoing a process called thermal runaway. Thermal runaway can occur without warning as a result of various factors, including if the battery is damaged, overheated, exposed to water, overcharged, or improperly packed. Thermal runaway can also occur on its own due to manufacturing defects.

Flight crews are trained to recognize and respond to lithium battery fires in the cabin. Passengers should notify flight crew immediately if their lithium battery or device is overheating, expanding, smoking or burning.

Spare (uninstalled) lithium ion and lithium metal batteries, including power banks and cell phone battery charging cases, must be carried in **carry-on baggage only**. When a carry-on bag is checked at the gate or at planeside, all spare lithium batteries and power banks must be removed from the bag and kept with the passenger in the aircraft cabin. The battery terminals must be protected from short circuit.

This covers spare lithium metal and spare rechargeable lithium ion batteries for personal electronics such as cameras, cell phones, laptop computers, tablets, watches, calculators, etc. This also includes external battery chargers (portable rechargers) containing a lithium ion battery. *For lithium batteries that are installed in a device (laptop, cell phone, camera, etc.), see the entry for "portable electronic devices, containing batteries".*

Size limits: Lithium metal (non-rechargeable) batteries are limited to 2 grams of lithium per battery. Lithium ion (rechargeable) batteries are limited to a rating of 100 watt hours (Wh) per battery. These limits allow for nearly all types of lithium batteries used by the average person in their electronic devices. With airline approval, passengers may also carry up to two spare larger lithium ion batteries (101–160 Wh) or Lithium metal batteries (2-8 grams). This size covers the larger after-market extended-life laptop computer batteries and some larger batteries used in professional audio/visual equipment.

Quantity limits: None for most batteries — but batteries must be for use by the passenger. Batteries carried for further sale or distribution (vendor samples, etc.) are prohibited. There is a limit of two spare batteries per person for the larger lithium ion batteries described above (101–160 watt hours per battery).

Batteries must be protected from damage.

Battery terminals (usually the ends) must be protected from short circuit (i.e., the terminals must not come in contact with other metal). Methods include: leaving the batteries in their retail packaging, covering battery terminals with tape, using a battery case, using a battery sleeve in a camera bag, or putting them snugly in a plastic bag or protective pouch.

See the regulation: [49 CFR 175.10\(a\)\(18\)](#)

Damaged or recalled batteries and battery-powered devices, which are likely to create sparks or generate a dangerous evolution of heat must not be carried aboard an aircraft (e.g. carry-on or checked baggage) unless the damaged or recalled battery has been removed, or otherwise made safe. The airline may offer further public guidance on transporting individual recalled products.

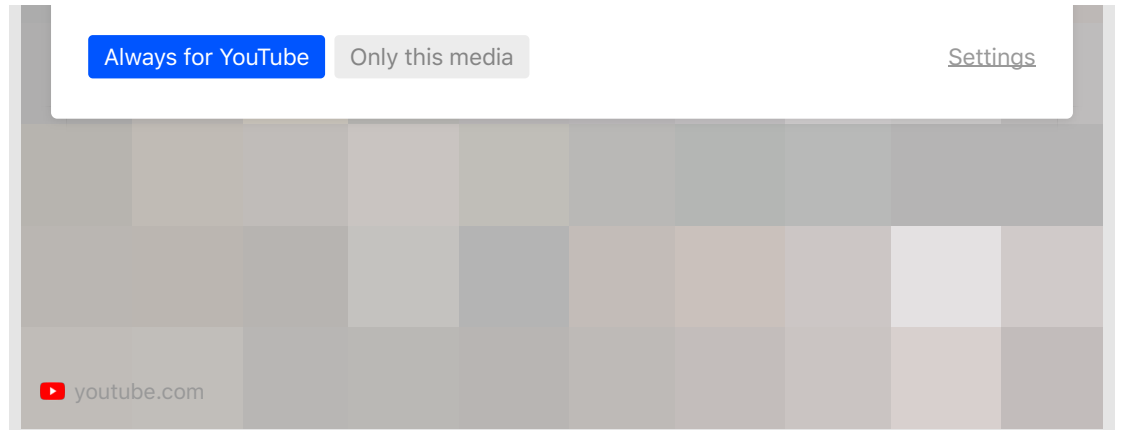
For additional information on recalls, visit the [Consumer Product Safety Commission](#), manufacturer, or vendor website.

Tip: Newer lithium ion batteries have the Wh rating marked on them. To calculate Wh, multiply the battery voltage by the Amp hours (Ah).

View our illustrated guide at [Airline Passengers and Batteries](#).

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