PackSafe

Federal Aviation Administration

Batteries Carried by Airline Passengers

Frequently Asked Questions

Q1. **Are passengers allowed to travel with batteries in their checked or carry-on bags?**

A1. Passengers can carry most batteries and portable electronic devices, such as laptops, cell phones, vaping devices, and mobility aids, for their personal use in their carry-on baggage when following the proper safety precautions (see the chart for additional details). Lithium-ion batteries are allowed in your carry on based on watt hours (Wh). Batteries 0-100 Wh are allowed on passenger aircraft, 101-160 Wh require air carrier approval, and batteries exceeding 160 Wh are forbidden. There are additional safety requirements and limitations when placing batteries in checked bags or when involving to mobility aids, check the chart below for details.

Q2. **Why are all lithium-ion batteries recommended to be transported in carry-on and not checked bags?**

A2. Lithium-ion batteries are required to undergo safety testing. All lithium-ion batteries are capable of overheating and experiencing 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 protected. Thermal runaway can also occur on its own due to manufacturing defects. Flight crews are trained to recognize and respond to lithium-ion battery fires in the cabin. Passengers should notify the flight crew immediately if their lithium-ion battery or portable electronic device is overheating, expanding, smoking, or burning.

Q3. **How do I determine a lithium-ion battery's watt hours (Wh) rating?**

A3. A lithium-ion battery's Wh should be marked on the battery; if not, you will need to determine the Wh. To determine Wh, multiply the volts (V) by the amp hours (Ah). Example: A 12-volt battery rated to 8 Ah is rated at 96 Wh (12 x 8 = 96). For milliamp hours (mAh), divide mAh by 1000 (to get to Ah) and then multiply by the V.

Q4. **Is there a limit to the number of lithium-ion batteries or devices I can carry?**

A4. There is a two-spare battery limit on the large lithium-ion (101-160 Wh) and non-spillable batteries (see the chart on the next page) in carry-on only. Spare larger lithium-ion batteries and power banks (101-160 Wh) are forbidden in checked baggage.

Q5. **If my battery is damaged or recalled can I travel with it?**

A5. 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. We recommend contacting your specific airline to see if they offer further guidance on transporting damaged or recalled batteries.

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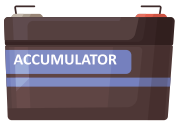
Batteries Allowed in Airline Passenger Baggage in the US

Based on US DOT regulations (49 CFR, Sec. 175.10). Transportation Security Administration (TSA) security, individual airline, and international rules may, at times, be more restrictive.

Item	Examples	Info	Carry on	Checked
 **Baggage Equipped with Lithium Batteries**	Baggage equipped with lithium batteries.	Bags must be carried as carry-on bags unless the batteries can be removed from the baggage. Removed batteries must be carried in accordance to the same restrictions as spare batteries.	**YES**	**YES**
 **Dry Alkaline Batteries**	Most A, AA, AAA, C, D, or button cell batteries	Must be protected from damage and short circuit	**YES**	**YES**
 **Dry Rechargable**	Nickel metal hydride (NiMH), nickel cadmium (NiCad), etc.	Must be protected from damage and short circuit	**YES**	**YES**
 **Portable Electronic Devices**	Lithium-ion powered: cell phone, laptop, tablets, gaming systems, watches, cameras, etc.	The same watt hour (Wh) restrictions for spare batteries apply to these devices. They can only be checked only when powered off and protected from short circuit and unintentional activation.	**YES**	**YES** (see info)
 **Spare Battery or Power Bank**	Lithium-ion powered: power bank, portable chargers, charging cases, cell phone battery, laptop battery, external batteries	Lithium-ion batteries are limited to a rating of 100 watt hours (Wh) per battery. With airline approval, passengers may also carry up to two spare larger lithium-ion batteries (101–160 Wh). Must be carry-on only and protected from damage and short circuit	**YES**	**NO**
 **Electronic Cigarettes and Vaping Devices**	Lithium-ion battery powered: E-cigarettes (e-cigs), vaporizers, vape pens, atomizers, electronic nicotine delivery systems	Must be protected from damage and short circuit, carry-on only.	**YES**	**NO**
 **Location Trackers**	Air tags, tile tracker	Bluetooth baggage trackers equipped with lithium batteries are only allowed in checked baggage when containing lithium content not exceeding 0.3 grams, or lithium-ion batteries with a watt hour (Wh) rating not exceeding 2.7 Wh.	**YES**	**YES** (see info)
 **Lithium Metal Batteries**	Non-rechargeable as used in small consumer electronics such as camera, LED flashlights, watches, etc.	Must be protected from damage and short circuit. Spare batteries can be carried in carry-on only. 2 grams or less lithium per battery.	**YES**	**YES** (see info)

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Item	Examples	Info	Carry on	Checked
 **Non Spillable Wet Batteries (Absorbed Electrolyte)**	Used for portable electronic devices, 12 volts and 100 watt hours	Must be protected from damage and short circuit and in strong packaging. Battery and outer packaging must be marked “non spillable.”	**YES**	**YES**
 **Wheelchairs and Mobility Devices with Lithium-ion Batteries that are Not Adequately Protected and Batteries Removed**	Electric wheelchair, mobility scooter	Lithium-ion battery size is limited to 300 watt hours (Wh). The lithium-ion batteries must be carried in carry-on baggage only. The passenger must advise the airline of the battery location. Lithium metal (non-rechargeable lithium) batteries are forbidden with these devices.	**YES** (see info)	**NO**
 **Wheelchairs and Mobility Devices with Lithium-ion Batteries, with Batteries Installed and Protected by Design**	Electric wheelchair, mobility scooter	The passenger must advise the airline of the battery location on the device. Mobility device with battery installed and not removed must be checked and not carried on. Lithium metal (non-rechargeable lithium) batteries are forbidden with these devices.	**NO**	**YES**
 **Spare Lithium Battery Wheelchair and Mobility Device Battery**	Spare or removed wheel-chair or mobility device battery	A maximum of one spare battery not exceeding 300 watt hours (Wh) or two spare batteries not exceeding 160 Wh each carry-on only.	**YES** (see info)	**NO**
 **Wheelchairs and Mobility Devices with Spillable, Non-Spillable, or Dry Batteries**	Electric wheelchair, mobility scooter	For complete passenger instructions contact your airline as advanced arrangements and extra check-in time may be necessary.	**NO**	**YES** (see info)

▶ Scan this QR code to find more information about PackSafe for passengers

For questions about traveling with dangerous goods (chemicals, batteries, battery-powered devices, gases, aerosols, flammables, etc.) you may contact the FAA Office of Hazardous Materials Safety at 405-954-0088 or via e-mail at hazmatinfo@faa.gov.