PAULO VASCONCELOS FREITAS
Tech Atelier

IPHONE TIPS · NO. 11 | UPDATED FOR IOS 27

Power banks: using them safely

When, where and how to use them, flying, and spotting a battery at risk



! Why they need care

A power bank is a **lithium battery** holding a lot of energy in a small space. If it is poor quality, damaged or overheats, it can go into **thermal runaway**: it heats up on its own, gives off toxic smoke and can catch fire within seconds, and it is hard to put out.

1 When, where and how to use them

- ✓ Use and charge the power bank on a **hard, well-ventilated surface**, such as a table.
- ✓ Use **certified cables and chargers** in good condition.
- ✓ Buy well-known brands, with the **CE marking** and the capacity stated in **Wh** on the label.
- ✓ Store it half charged (50 to 70%) if you won't use it for a long time.
- ✗ Charging it **under a pillow, on the bed or on the sofa**, or overnight with nobody around.
- ✗ Leaving it **in the sun or in the car** in summer. Heat degrades the battery.
- ✗ Carrying it loose in a bag with **keys and coins**: the contacts can short-circuit.
- ✗ Using a power bank that **has been dropped, got wet or is deformed** without checking it.

2 How much energy does your power bank hold?

Airline rules count energy in **watt-hours (Wh)**. If the label only shows mAh, work it out: **mAh × 3.7 ÷ 1000 = Wh**.

CAPACITY	ENERGY (APPROX.)	ON A PLANE
10,000 mAh	37 Wh	**Allowed in the cabin**
20,000 mAh	74 Wh	**Allowed in the cabin**
26,800 mAh	99 Wh	**Allowed in the cabin**
27,000 to 43,000 mAh	100 to 160 Wh	**Only with the airline's approval**
Over 43,000 mAh	Over 160 Wh	**Forbidden**

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3 When flying



- **Hand luggage only**, or on you. In checked baggage it is **always forbidden**.
- If your cabin bag is **checked in at the aircraft door**, take the power bank out first.
- **No more than two** power banks per person, up to 100 Wh each (the rule at TAP and many airlines).
- Protect the contacts: original packaging, a pouch or insulating tape over the ports.
- **You cannot use or charge the power bank on board**, at any stage of the flight. International rules became stricter in 2026.
- Some airlines also won't let you put it in the **overhead locker**: keep it with you, in the seat pocket or under the seat in front.
- A power bank **without its capacity stated** on the label may be refused at boarding.

> **Always check before you fly**
> Rules change and differ between airlines (TAP, SATA, easyJet, Ryanair...). Check your airline's **dangerous goods** page before you pack. Charge your phone before boarding, or use the aircraft's sockets where available.

4 Signs of wear and danger



Normal
Sits flat, seams closed

Swollen battery
Bulging top, seam opening, runs hot

- **Swelling:** the case bulges, rocks on the table or the seams start to open.
- **Abnormal heat**, while charging or even when idle.
- A chemical or sweet **smell**, **hissing** or crackling.
- **Dents, cracks or drop marks** on the case.
- The charge **runs down fast** or the power bank switches itself off.
- **Loose or scorched ports**, or cables that get hot at the connection.

After a drop

A drop can damage the cells inside without anything showing on the outside. For the next few hours, only charge it **where you can see it**, on a non-flammable surface, and check that it doesn't heat up or swell.

Swelled up suddenly? Do this

1. **Stop using it** and unplug every cable. Don't charge it again.
2. **Don't squeeze it, pierce it or try to open it**, not even to "let the air out".
3. Place it on a **non-flammable surface** (stone, ceramic, metal), away from people and anything that burns, preferably outdoors.
4. If there is **smoke or fire**, move away, ventilate the area and call **112** (the European emergency number).

5 At end of life

Power banks and batteries **never go in household waste**. Take them to a battery collection point, such as the **pilhões** (battery collection bins) and electronics shops. Swollen batteries should go in a bag or box, with the contacts covered.

6 Power banks and iPhone

- Choose a power bank with **USB-C Power Delivery** (20 W or more): it charges the iPhone faster and with less heat.
- **Magnetic** power banks (MagSafe compatible) are handy but run hotter: take off a thick case if the iPhone gets very warm.
- If the iPhone shows a **temperature** warning, disconnect the power bank and let it cool in the shade.
- Don't use the iPhone while charging in a pocket or under clothing: the heat is trapped and wears both batteries.

An iPhone can have a swollen battery too: the screen lifts at one edge or the back bulges. Switch it off, don't charge it and bring it to PAULO VASCONCELOS FREITAS – Tech Atelier, in Funchal or Horta.