Are power banks lithium batteries

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Generally speaking, power banks are manufactured using two main types of rechargeable batteries: Lithium-ion and Lithium-polymer. And of the two, Lithium-ion power banks are the most common ones. However, Lithium-polymer power banks have been recently gaining ground in the market.

The two main questions customers have regarding Lithium-ion and Lithium-polymer power banks are "How different do they perform?" and especially "Which one is better?". Judging from our experience, there"s too much confusion concerning this topic. To clear it up, we are exploring and comparing the main differences between Lithium-ion and Lithium-polymer portable chargers.

Let"s begin with the basics, what"s exactly a lithium-ion battery?

According to Battery University, a free educational website offering hands-on battery information, the lithium-ion battery, or Li-ion, was conceived in the early nineties as an answer to safety concerns over rechargeable metallic lithium batteries. Sony first commercialized it in 1991, and since then, it has become the most widely used battery in the electronic market.

There are four main components of Li-ion batteries:

On the other hand, lithium-polymer batteries, also known as LiPo, have evolved from Li-ion batteries and follow the same design. For making the battery conductive at room temperature, nowadays, the type of electrolyte in the manufacturing of most LiPo cells is a gel, while a microporous separator replaces the traditional one.

As expected, the change in electrolytes results in slight differences between one another.

On the one hand, Li-ion cells usually have a low manufacturing cost, and while they have a limited mAh capacity, they tend to last longer as they don"t have the memory effect. This phenomenon occurs when the battery experiences losses in usable capacity from charging-discharging and recharging over time.

On the other hand, LiPo cells are made thinner and lighter, to the point of resembling a credit card, and can store slightly higher specific energy than Li-ion ones, but they"re more expensive to manufacture. Besides, they do suffer from the memory effect and have shorter lifespans.

The following table summarizes the most significant differences between Li-ion and LiPo power banks:

As the table shows, the main advantage of power banks with LiPo batteries is that they"re more compact and lightweight. Besides, two of the main features users are looking for in a power bank are how compact it is and

how much power it can deliver.

Thus, logically, LiPo batteries offer both of these qualities; in fact, they allow manufacturers to capitalize and play with different shapes and sizes (lipstick, credit card) as well as lightweight, making them more attractive to buyers.

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