



# Lifepo4 deep cycle meaning

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LithiumHub batteries are built tough, from materials you can count on. But great quality is just the beginning. We're constantly chasing after innovative ways to make our batteries safer, smarter, and more efficient.

LiFePO<sub>4</sub> batteries, also known as LFP batteries, are taking charge of the battery world. But what exactly does LiFePO<sub>4</sub> mean? What makes these lithium iron phosphate &#8211; LiFePO<sub>4</sub> batteries better than other types? (Not to be confused with the lithium-ion battery &#8211; these are not the same.)

You might remember some of these elements from chemistry class. That&#8217;s where you spent hours memorizing the periodic table (or staring at it on the wall in school). That&#8217;s where you performed experiments (or, stared at your crush while pretending to pay attention to the experiments).

Long story short, that's how the LiFePO<sub>4</sub> battery was born. (In 1996, by the University of Texas, to be exact). LiFePO<sub>4</sub> is now known as the safest, most stable, and most reliable lithium battery.

The LiFePO<sub>4</sub> battery began with John B. Goodenough and Arumugam Manthiram. They were the first to discover the materials employed in lithium-ion batteries. Anode materials are not very suitable for use in lithium-ion batteries. Why? Because they're prone to early short-circuiting.

Scientists discovered that cathode materials are better alternatives for lithium-ion batteries. And this is very clear in the LiFePO<sub>4</sub> battery variants. Fast-forward: We increase stability and conductivity and improve all sorts of things, and poof! LiFePO<sub>4</sub> batteries are born.

Today, there are rechargeable LiFePO<sub>4</sub> batteries everywhere. These batteries have many applications - boats, solar systems, electric vehicles, gas-powered vehicles, and more.

LiFePO<sub>4</sub> batteries are cobalt-free, and cost less than most of its alternatives (over time). It's not toxic, and it lasts longer. But we'll get to that more soon. The future holds very bright prospects for the LiFePO<sub>4</sub> battery.

The LiFePO<sub>4</sub> battery is not great for wearable devices like watches. They have a lower energy density compared to lithium-ion batteries. But for things like solar energy systems, RVs, golf carts, bass boats, semi-trucks, and electric motorcycles, they&#8217;re the best by far. Why?

And last but not least, LiFePO<sub>4</sub> batteries can not only reach 3,000-5,000 cycles or more&#8230; They can reach 100% depth of discharge (DOD). Why does that matter? Because that means, with LiFePO<sub>4</sub> (unlike other batteries), you don&#8217;t worry about over-discharging your LiFePO<sub>4</sub> battery.

Also, you can use it longer as a result. In fact, you can use a quality LiFePO<sub>4</sub> battery for many years longer



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than other battery types. These batteries are rated to last about 5,000 cycles &#8211; that&#8217;s roughly ten years. So the average cost over time is much better.

Lithium battery safety is vital. The newsworthy "exploding" lithium-ion laptop batteries have made that clear. One of the most critical advantages LiFePO4 has over other battery types is safety. LiFePO4 is the safest lithium battery type. It&#8217;s the safest of any type.

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