

A-Core Container

Suriname lithium iron phosphate battery pack



Overview

What is lithium hexafluorophosphate in a LiFePO₄ battery pack?

The electrolyte in a LiFePO₄ battery pack serves as the medium for the transport of lithium ions between the anode and the cathode. It is typically composed of a lithium - containing salt dissolved in an organic solvent. Lithium hexafluorophosphate (LiPF₆) is a commonly used salt in the electrolyte.

What is a lithium iron phosphate cathode?

The lithium iron phosphate cathode material enables the seamless use of large-capacity lithium batteries in series. The LiFePO₄ battery operates within a voltage range of 2.8V to 3.65V, with a nominal voltage of 3.2V, and functions effectively across a wide temperature range (-20°C to +75°C).

What is the energy density of a LiFePO₄ battery?

Modern LiFePO₄ battery packs can achieve a gravimetric energy density of up to 180 - 200 Wh/kg, which is sufficient for many applications where weight is a crucial factor, such as in electric vehicles. In terms of volumetric energy density, values can reach up to 500 - 600 Wh/L.

How many cycles does a lithium phosphate battery last?

A Lithium Phosphate LiFePO₄ Battery charged at 1C can typically achieve around 2000 cycles. It offers notable safety features, such as resistance to puncture-induced explosions and a reduced risk of burning when overcharged. The lithium iron phosphate cathode material enables the seamless use of large-capacity lithium batteries in series.

Are lithium-ion batteries ethical?

Cobalt is a crucial component in many lithium-ion batteries. It is associated with environmental and ethical concerns due to mining practices in some regions. LiFePO₄ batteries, on the other hand, contain no cobalt. So,

mitigating concerns related to its scarcity and unethical sourcing is not a worry.

What is lithium hexafluorophosphate?

Lithium hexafluorophosphate (LiPF₆) is a commonly used salt in the electrolyte. When dissolved in the organic solvent, LiPF₆ dissociates into lithium ions (Li⁺) and hexafluorophosphate ions (PF₆⁻), providing a source of mobile lithium ions for the battery's operation.

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