

Solar container lithium battery energy storage Phosphorus chemical industry Fluorine chemical industry





Overview

Are lithium-ion batteries sustainable?

The lithium-ion battery industry is driving the global clean energy transition but faces growing sustainability challenges. Pollution and recycling bottlenecks span the entire materials life cycle, emphasizing the urgent need for integrated chemical, environmental and policy frameworks to guide risk assessments and sustainable development.

Why do lithium-ion batteries cause environmental pollution during recycling?

The fluorine-containing organics in the spent lithium-ion batteries (LIBs) cause environmental pollution during recycling. Recovery of fluorine-containing resources is critical for the recycling process of spent LIBs.

How much money has been invested in China's Lithium hexafluorophosphate project?

The project has a total investment of 10 billion yuan and is constructed in two phases. The main contents include a 400,000-ton/year battery iron phosphate production line, a 200,000-ton/year battery-grade iron phosphate production line, and a 20,000-ton/year battery lithium hexafluorophosphate project.

What materials are used in lithium ion batteries?

Among the commercial LIBs, LiPF₆ (dissolved in carbonate solvents) and polyvinylidene fluoride (PVDF) are the most widely used and representative electrolyte and binder materials (Liu, S. et al., 2024). The total fluorine content in batteries is approximately 1 %–4 % (Wang et al., 2025).



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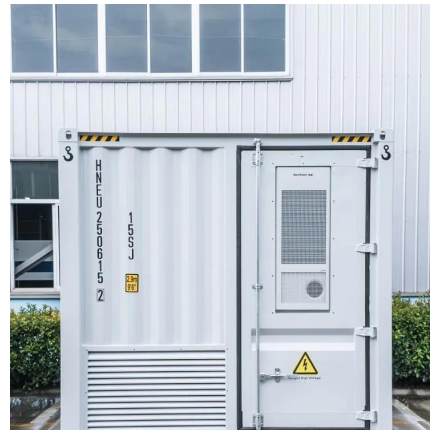


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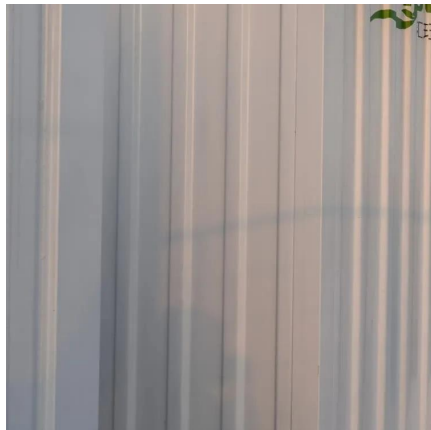
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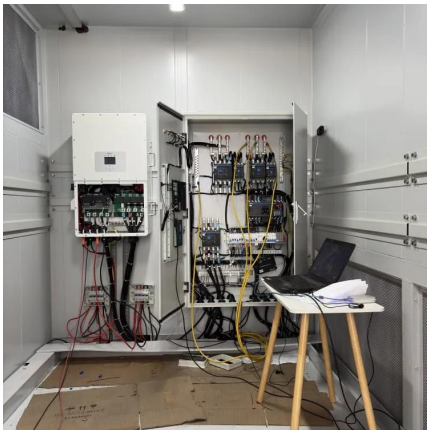
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