

Sodium Ion Battery Prussian Blue Cathode Material High Capacity Active Powder

Item Number: CL09



Introduction

High performance sodium ion battery prussian blue cathode material offering $\text{Na}_2\text{FeFe}(\text{CN})_6$ chemistry, rapid Na ion diffusion, low lattice strain, and discharge capacity above 100 mAh per gram for advanced battery research and full cell testing workflows.

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Application	Description	Key Benefit
Sodium-Ion Full-Cell Fabrication	Used as the primary positive electrode active material paired against hard carbon or alloy anodes in coin and pouch cells.	Eliminates pre-sodiumation steps due to pristine Na-rich state, streamlining cell production workflows.
Fast-Charging Battery Research	Formulated into low-impedance composite electrodes to test high-rate capability and low internal resistance.	Large lattice channels allow fast Na^+ transport, maintaining capacity under high C-rate cycling.
Low-Temperature Battery Prototyping	Evaluated in low-temperature electrolytes for energy storage operating under extreme environmental conditions.	Low activation energy for Na^+ insertion minimizes capacity drop-off in cold ambient settings.
Electrode Rheology & Process Development	Utilized in pilot line mixing, coating, and roll-pressing optimization studies to establish baseline electrode densities.	Stable particle distribution and moderate surface area simplify slurry formulation and calendaring.
Grid-Scale Energy Storage Evaluation	Integrated into long-cycle life research cells aiming for low-cost, cobalt-free grid-scale storage solutions.	Earth-abundant iron and carbon building blocks drastically lower active material cost per kWh.

Parameter	Specification / Value
Product Item Number	CL09
Material Classification	Sodium-Ion Battery Prussian Blue Cathode Powder
Chemical Formula	$\text{Na}_2\text{FeFe}(\text{CN})_6$
Physical Appearance	Light Blue Powder
Particle Size Distribution (D10)	8.9 μm
Particle Size Distribution (D50)	21 μm
Particle Size Distribution (D90)	40.5 μm
Specific Surface Area (BET)	$\leq 25 \text{ m}^2/\text{g}$
Material pH	8.19
First Discharge Specific Capacity	$\geq 100 \text{ mAh/g}$ (Na half-cell, 0.1C rate, 2.0V-3.8V window)
Hygroscopic Properties	Hydrophilic; readily absorbs ambient moisture
Storage & Handling Recommendations	Store at room temperature in sealed, moisture-proof packaging. Open container under dry room conditions and consume promptly, or store within an inert atmosphere glove box.
Transport & Packaging Safety	Non-flammable, non-hazardous cargo under intact packaging conditions