Prussian White Sodium Ion Battery Cathode Material Na2Mnfe Cn 6 Powder For Advanced Sodium Ion Energy Storage Research

Item Number: CL08

Introduction

High purity Prussian white sodium ion battery cathode material featuring a robust 3D open framework structure delivering high specific capacity of 130 mAh/g and excellent rate performance engineered for precision cell fabrication slurry processing and advanced energy storage battery research

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Application	Description	Key Benefit
Sodium-Ion Cell Prototype Assembly	Serves as the primary active cathode material for fabricating sodium-ion half-cells and full-cells in R&D laboratories.	Enables direct assembly with sodium-poor anodes without complex pre-sodiumation, saving preparation time.
High-Power Rate Performance Evaluation	Integrated into cathode slurry formulations to test rapid charge and discharge capabilities under high current densities.	Delivers 118 mAh/g specific capacity at 2C rates due to short ion diffusion pathways and open lattice channels.
Battery Slurry & Electrode Coating Research	Combined with conductive carbon additives and binders to evaluate rheological behavior and electrode film compaction.	Controlled D50 particle size (13.2 µm) ensures consistent doctor-blade slurry spreading and defect-free foil adhesion.
Long-Term Galvanostatic Cycle Life Studies	Subjected to extended cycling tests across diverse current rates to analyze degradation mechanisms and structural durability.	Retains 67.74% capacity after 300 cycles at a demanding 4C rate, validating long-term crystal framework stability.
Fundamental Electrochemical Kinetics Research	Utilized in academic and industrial laboratories to investigate sodium insertion dynamics, redox plateaus, and lattice strain.	Clear dual redox reaction centers yield distinct potential plateaus between 2.0V and 3.8V vs. Na/Na+.

Parameter	Specification Details (Item Ref: CL08)
Product Identification	Item CL08
Material Classification	Prussian White Cathode Powder (Sodium-Ion Battery Active Material)
Chemical Formula	Na2MnFe(CN)6
Physical Appearance	Fine White Powder
Particle Size Distribution (D10)	3.8 µm
Particle Size Distribution (D50)	13.2 µm
Particle Size Distribution (D90)	31.5 µm
Specific Surface Area (BET)	≤ 25 m^2/g
pH Value	8.34
First Charge/Discharge Specific Capacity (Na, 0.1C, 2.0–3.8V)	≥ 120 mAh/g
Specific Capacity at 0.2C Rate	~130 mAh/g
Specific Capacity at 2C Rate	118 mAh/g

Parameter	Specification Details (Item Ref: CL08)
Cycle Life Retention (4C Rate, 300 Cycles)	67.74%
Recommended Voltage Window	2.0 V to 3.8 V (vs. Na/Na+)
Hygroscopicity & Storage Guidelines	Readily absorbs moisture; requires moisture-proof sealing. Store at room temperature. Use promptly after opening or store within an inert atmosphere glove box.
Transport Safety Classification	Non-flammable solid; safe for transit in intact, sealed packaging