

Conductive Carbon Black Additive Powder For High Performance Battery Electrode Manufacturing

Item Number: FZ25



Introduction

Engineered for high-performance energy storage, this premium conductive carbon black additive delivers a 45 m²/g surface area, ultra-low metal impurities, and superior percolation networks to maximize battery rate capability, cyclic stability, and long-term electrode conductivity across demanding electrochemical cell systems.

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Application	Description	Key Benefit
Lithium-Ion Cathode Slurries	Incorporated into high-nickel (NCM, NCA) and lithium iron phosphate (LFP) formulations to create resilient electron pathways between primary active particles and aluminum foil substrates.	Drastically reduces internal cell impedance (ESR), improves rate performance up to 10C+, and prevents capacity loss over thousands of deep discharge cycles.
Silicon-Graphite Anodes	Applied as a resilient conductive backbone to accommodate the severe mechanical strain and volume expansion typical of silicon-dominant and silicon-graphite composite anodes.	Maintains electrical contact during repetitive lithiation/delithiation volume swings, suppressing active material isolation and electrode pulverization.
Solid-State Battery Electrodes	Utilized in composite cathode and solid electrolyte interface formulations where mechanical contact and electronic transport are inherently constrained.	Establishes low-tortuosity electron channels across solid-solid interfaces without degrading moisture-sensitive sulfide or oxide solid electrolytes.
Electric Double-Layer Capacitors (EDLC)	Blended with high-surface-area activated carbons to bridge particle voids and enhance instantaneous power discharge in supercapacitor electrodes.	Minimizes equivalent series resistance, increases instantaneous power density, and enables ultra-fast charge/discharge responsiveness under extreme pulse conditions.
Sodium-Ion Battery Systems	Formulated into hard carbon anode and Prussian blue/layered oxide cathode pastes for scalable sodium-ion energy storage systems.	Delivers consistent chemical stability across wide electrochemical windows while ensuring cost-effective, high-conductivity electrode architectures.
Conductive Polymers & Coatings	Compounded into technical plastics, antistatic coatings, and EMI shielding composites requiring stable volumetric conductivity.	Achieves robust antistatic and electromagnetic dissipation properties without degrading the host polymer's mechanical elasticity or tensile strength.

Parameter	Unit / Condition	Specification Value (Item FZ25)
Product Identifier	—	FZ25
Chemical Name	—	Carbon Black (Conductive Additive)
CAS Number	—	1333-86-4
BET Nitrogen Surface Area	m ² /g	45
Absorption Stiffness Value	ml/5g	36
Moisture Content	%	0.1
Volatile Matter	% max	0.4
Toluene Extract	% max	0.2
Bulk Density	kg/m ³	160

Parameter	Unit / Condition	Specification Value (Item FZ25)
Ash Content (600 °C)	%	0.01
Sulfur Content	%	0.02
pH Value	—	7
Grit Content (> 45 μm)	ppm	< 2
Grit Content (> 20 μm)	ppm	12
Iron (Fe) Content	ppm	2
Nickel (Ni) Content	ppm	1
Vanadium (V) Content	ppm	< 1
Chromium (Cr) Content	ppm	< 1
Copper (Cu) Content	ppm	< 1