

Multilayer Graphene Powder For Lithium Battery Materials And Advanced Energy Storage Conductive Additives

Item Number: CL29



Introduction

Engineered for high-rate lithium battery materials and energy storage applications, this premium multilayer graphene powder provides outstanding electrical conductivity, high specific surface area, and exceptional mechanical reinforcement for superior electrochemical performance across demanding electrode formulations.

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Application	Description	Key Benefit
Lithium-Ion Cathode Formulations	Incorporated as an advanced conductive additive in high-nickel ternary (NMC/NCA) and lithium iron phosphate (LFP) cathode slurries.	Lowers cathode internal resistance (DCR), improves electron transport across thick electrode coatings, and boosts high-rate C-rate performance.
Silicon-Carbon Composite Anodes	Applied within high-capacity silicon-based and graphite anode blends to accommodate volumetric expansion during lithiation/delithiation.	Maintains electrical contact across expanding silicon particles, suppresses structural pulverization, and dramatically extends cycling capacity retention.
Supercapacitors and Pseudocapacitors	Utilized as the primary or secondary electrode material in electric double-layer capacitors (EDLC) and hybrid energy storage devices.	Maximizes charge accumulation at the electrode-electrolyte interface, delivering elevated power density, rapid charge response, and ultra-long cycle stability.
Solid-State Battery Electrodes	Blended with solid electrolytes and active materials to ensure continuous electronic percolation across rigid solid-solid particulate interfaces.	Overcomes interfacial resistance barriers in all-solid-state cells, enabling efficient charge transfer without liquid electrolyte wetting.
Thermal Interface and Dissipation Materials	Compounded into thermal pads, phase change materials, and dissipation coatings for electronic packaging and battery module heat management.	Provides superior in-plane thermal conductivity pathways, reducing thermal resistance and mitigating hazardous battery pack hotspots.
Conductive Polymer and Elastomer Composites	Compounded into engineering thermoplastics, thermosets, and rubbers to impart antistatic, electromagnetic interference (EMI) shielding, or conductive properties.	Achieves the electrical percolation threshold at minimal additive loading, preserving the host polymer's inherent tensile and mechanical properties.
Electrochemical Sensors and Catalysts	Deployed as a high-surface-area catalytic support substrate in chemical sensing platforms, fuel cell gas diffusion electrodes, and water-splitting devices.	Increases active catalytic surface density and accelerates heterogeneous electron transfer rates across sensitive detection interfaces.

Parameter	Specification (Item: CL29)
Purity	>95 wt%
Layer Count	5 - 10 layers
Thickness	3.4 - 8 nm
Particle Size / Lateral Dimension (D)	10 - 50 μm
Specific Surface Area (BET)	100 - 300 m^2/g
Physical Appearance	Blackish-brown powder
Material Classification	Multilayer Graphene Powder / Advanced Carbon Nanomaterial

Parameter	Specification (Item: CL29)
Primary Compatibility	Lithium battery slurries, conductive masterbatches, polymer matrices