Carboxymethyl Cellulose Cmc Powder Binder For Lithium Battery Anode Material

Item Number: CL34

Introduction

Engineered for high-performance battery research, this ultra-pure carboxymethyl cellulose CMC powder binder delivers superior rheological control, robust anti-settling stability, and exceptional aqueous adhesion for lithium-ion battery anode slurries and advanced electrochemical materials development.

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Application	Description	Key Benefit
Lithium-Ion Graphite Anodes	Used as an anti-settling agent and aqueous binder in standard artificial and natural graphite negative electrode slurries.	Prevents active mass agglomeration, enhances slurry shelf life, and ensures smooth doctor-blade coating onto copper foil.
Silicon-Graphite Composite Anodes	Incorporated into high-capacity anode systems containing silicon nanoparticles, SiO, or silicon-carbon blends.	Accommodates extreme volume expansion through flexible hydrogen-bonding networks, preventing particle pulverization and electrode peeling.
Lithium-Sulfur (Li–S) Cathodes	Serves as a multifunctional binder and polysulfide immobilizer in sulfur-carbon composite cathode formulations.	Suppresses the polysulfide shuttle effect, stabilizing capacity retention and extending reversible cycle life.
Aqueous Sodium-Ion Anodes	Utilized in hard carbon and non-graphitizable carbon anode fabrication using environmentally friendly water-based processing.	Eliminates reliance on NMP solvents while establishing robust interfacial bonding on aluminum or copper substrates.
Solid-State Composite Interlayers	Applied as a polymeric binder in thin-film ceramic and composite solid electrolyte slurry preparations.	Provides uniform particle dispersion and flexible mechanical integrity prior to high-density sintering or pressing.
High-Speed Roll-to-Roll Slurry Coating	Integrated into pilot and production electrode slurry lines requiring precise shear-thinning and fast leveling.	Yields defect-free, pinhole-free green coatings with uniform areal mass loading across high-throughput coating lines.

Technical Parameter	Specification Standard	Measured Lot Value (CL34)	Status / Test Method
Product Item Code	CL34	CL34	Reference Standard
Physical Appearance	White Powder	White Powder	Visual Inspection
Chemical Purity	> 99.5%	99.7%	Titration Analysis
Viscosity (2% Aqueous Solution)	7,000 ~ 10,000 mPa·s	7,458 mPa·s	Rotational Viscometer (25°C)
Degree of Substitution (D.S.)	0.6 ~ 0.9	0.86	Chemical Analysis
Water Content	< 10.0%	5.35%	Karl Fischer / Loss on Drying
pH Value (1% Solution)	6.0 ~ 8.5	6.77	pH Potentiometry
Lead (Pb) Impurity	< 15 ppm	Compliant (Pass)	Atomic Absorption Spectroscopy
Iron (Fe) Impurity	< 40 ppm	Compliant (Pass)	Colorimetric / ICP Analysis
Arsenic (As) Impurity	< 2 ppm	Compliant (Pass)	ICP-MS Analysis
Solvent Compatibility	Deionized Water	Deionized Water	Complete Aqueous Dissolution
Primary Function	Anode Thickener / Anti-Settling	Anode Thickener / Anti-Settling	Battery Slurry Preparation