Series 9 High Nickel Ncm Polycrystalline And Single Crystal Cathode Material For Lithium Ion Batteries

Item Number: CL05

Introduction

Engineered for high energy density lithium storage systems this premium Series 9 high nickel NCM cathode material delivers ultra high capacity exceptional first cycle efficiency low residual lithium content and superior cycling stability for cylindrical prismatic and pouch cells

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Application	Description	Key Benefit
Automotive EV Traction Cells	High-energy cell fabrication for electric passenger vehicles and commercial fleet powertrains in prismatic and pouch configurations.	Maximizes vehicle driving range via 214–217 mAh/g capacity while maintaining long-term cyclic retention.
High-Performance Cylindrical Cells	Applied in 18650, 21700, and 4680 cylindrical formats using polycrystalline powder for power tools and performance EVs.	Delivers high initial coulombic efficiency and superior compaction density for fast automated winding.
Premium Consumer Electronics	Thin-profile pouch cells for high-end smartphones, ultrabooks, and wearable devices requiring maximum energy density in compact footprints.	Enables thin electrode coatings with high volumetric energy density and minimal swelling during extended use.
Commercial Aerospace & Drones	Lightweight, high-capacity battery packs for unmanned aerial vehicles (UAVs), eVTOL craft, and electric marine propulsion.	Reduces total battery pack weight while delivering reliable high-voltage discharge profiles.
Grid-Scale Energy Storage	Advanced energy storage systems operating under high-utilization duty cycles requiring high round-trip energy efficiency.	Provides sustained multi-thousand-cycle durability with reduced degradation rates under controlled thermal conditions.
Solid-State Battery Research	Functional positive electrode active material for solid-state and semi-solid battery prototyping and interface characterization.	Low surface residual alkali ensures high interfacial compatibility with polymer, oxide, and sulfide solid electrolytes.

Parameter	CL05-C2 (Polycrystalline)	CL05-S (Single Crystal)
Product Item Number	CL05	CL05
Chemistry Classification	Ni90 High-Nickel NCM	Ni90 High-Nickel NCM
Crystal Structure / Morphology	Polycrystalline Spherical Agglomerate	Monolithic Single Crystal
Median Particle Size (D50)	12 ± 1.0 μm	3.5 ± 1.0 μm
Surface Residual OH^-	≤ 0.20 wt%	≤ 0.20 wt%
Surface Residual CO_3^{2-}	≤ 0.20 wt%	≤ 0.20 wt%
Specific Discharge Capacity (0.1C, Coin Cell)	217 ± 3 mAh/g	214 ± 3 mAh/g
First Cycle Efficiency (0.1C, Coin Cell)	89 ± 1 %	87 ± 1 %
Applicable Cell Form Factors	Cylindrical, Prismatic, Pouch	Prismatic, Pouch
Recommended Processing Environment	Dry Room (Dew Point ≤ -40°C)	Dry Room (Dew Point ≤ -40°C)