

Lithium Rich Manganese Based Cathode Material For Lithium Ion Batteries

Item Number: CL14



Introduction

Discover high performance lithium rich manganese based cathode material for advanced lithium ion batteries offering specific capacity over 250 mAh per g, superior structural stability, low raw material cost, and exceptional rate capability across coin and pouch cell research configurations.

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Application	Description	Key Benefit
Electric Vehicle (EV) Battery R&D	Formulating next-generation traction cells demanding ultra-high gravimetric energy density exceeding conventional ternary limitations.	Significantly increases driving range per pack while reducing dependence on expensive cobalt and nickel resources.
Grid Energy Storage Systems (ESS)	Developing large-format storage cells where raw material abundance, cyclic stability, and cost per kilowatt-hour are paramount metrics.	Delivers a cost-effective, high-capacity cathode matrix with intrinsic thermal resilience and high safety margins.
Industrial Power Tools	Engineering high-drain power tool battery packs operating under rapid discharge and fluctuating thermal loads.	Maintains structural integrity and sustained power output under aggressive rate cycling up to 3C.
Consumer Electronics & Tablets	Designing slim-form-factor pouch cells for smart devices, tablets, and wearable electronics requiring maximum single-charge runtimes.	Provides high volumetric density and thin coating compatibility to fit constrained internal hardware spaces.
Laboratory Academic Research	Conducting fundamental electrochemical characterization in CR2032/CR2016 coin cells and multi-layer experimental pouch cells.	Yields reproducible data across standardized testing protocols with minimal baseline batch variability.
Electronic Toys & Smart Hardware	Integrating reliable power sources into consumer robotics, RC equipment, and connected smart consumer hardware.	Combines high volumetric energy density with cost-competitive material economics for mass-market deployment.

Parameter Category	Specification Metric	Value (Item: CL14)
Model Identification	Product Code	CL14
Physical Properties	Particle Size D10	4.90 μm
	Particle Size D50	9.40 μm
	Particle Size D90	16.8 μm
	BET Specific Surface Area	0.70 m²/g
	Tap Density	2.00 g/cm³
	pH Value	10.86
Chemical Composition & Impurities	Iron (Fe) Content	~0.0032%
	Copper (Cu) Content	~0.0000%
	Magnesium (Mg) Content	~0.0129%
	Gallium (Ga) Content	~0.0099%
	Moisture (H2O) Content	~0.0335%

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Electrochemical Characteristics	Nominal Operating Voltage	3.0 V – 4.6 V (Extended: 2.0 V – 4.8 V)
	Specific Discharge Capacity (0.1C, 3.0–4.6V)	≥200 mAh/g (Coin Cell, 25°C)
	High-Voltage Specific Capacity (2.0–4.8V)	>250 mAh/g
Standard Test Conditions	Coin Cell Capacity Benchmark	25°C, 0.1C constant current discharge, 3.0 V to 4.6 V
	C-Rate Evaluation Protocol	Charge: 25°C, 0.5C CC to 4.8V, CV to <0.02C; Discharge: 0.1C, 0.2C, 0.5C, 1.0C, 2.0C, 3.0C CC to 3.0V
	Cycle Life Evaluation Protocol	Charge: 25°C, 0.5C CC to 4.8V, CV to <0.02C; Discharge: 1.0C CC to 3.0V
Packaging & Form Factor	Available Packaging Options	20 g / 100 g / 500 g / 1000 g sealed protective bottles