Lithium Aluminum Titanium Phosphate Latp Powder Li1.3Al0.3Ti1.7 Po4 3 Solid State Electrolyte Sse Lithium Ion Battery Material

Item Number: FZ62

Introduction

High purity lithium aluminum titanium phosphate LATP powder Li1.3Al0.3Ti1.7 PO4 3 engineered for solid state electrolyte lithium ion battery research features submicron particle size high ionic conductivity low impurity levels and exceptional chemical stability for cell fabrication applications

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Application	Description	Key Benefit
All-Solid-State Lithium Metal Batteries (ASSLBs)	Utilized as the primary ceramic solid electrolyte layer separating the lithium metal anode and high-voltage cathode.	Prevents lithium dendrite penetration while enabling high thermal stability and enhanced energy density without liquid leakage risks.
Composite Polymer-Ceramic Electrolyte Membranes	Blended with polymer matrices (such as PEO, PVDF, or PAN) to formulate flexible hybrid solid electrolyte sheets.	Combines the high mechanical flexibility of polymers with the high ionic conductivity and mechanical strength of inorganic LATP fillers.
Rigid Ceramic Electrolyte Separator Disks	Formed via uniaxial or cold isostatic pressing followed by high-temperature sintering to create dense ceramic separator plates.	Delivers relative densities above 86% with low grain boundary resistance, ideal for coin cell and pouch cell research.
Lithium-Air and Aqueous Lithium Battery Protection Layers	Used as a water-impermeable, lithium-ion conducting protective barrier membrane in semi-solid or hybrid aqueous battery designs.	Prevents moisture ingress to the lithium anode while maintaining continuous lithium-ion transport during charge and discharge.
Thin-Film & Micro-Battery Component Fabrication	Processed into specialized target materials or suspensions for advanced thin-film electrolyte deposition and micro-electronic energy storage.	Ensures precise stoichiometry and uniform grain structure across micro-scale solid electrolyte thin films.
Battery R&D & Academic Prototyping	Applied in benchmark laboratory research testing new cathode materials, interlayers, and solid-state cell assembly methodologies.	Provides reliable, standardized material performance for reproducible academic and industrial testing results.

Parameter Category	Specification Details	Value / Standard
Product Identifier	Item / Model Number	FZ62
Chemical Identity	Material Name	Lithium Aluminum Titanium Phosphate (LATP) Powder
Chemical Identity	Chemical Formula	Li1.3Al0.3Ti1.7(PO4)3
Chemical Identity	CAS / Structure Type	NASICON-type Solid State Electrolyte
Physical Properties	Powder Color	White
Physical Properties	Standard Package Net Weight	1000 g
Physical Properties	Median Particle Diameter (D50)	1.66 μm
Chemical Purity	Overall Material Purity (wt%)	≥ 99.95% (3N5 Grade)
Stoichiometric Ratio	Molar Ratio (Li : Al : Ti : P : O)	1.3 : 0.3 : 1.7 : 3 : 12 (mol)
Electrochemical Metrics	Room Temperature Ionic Conductivity (K)	4.1×10^{-3} S/m
Trace Impurity Profile	Iron (Fe) Maximum Limit	≤ 10 ppm

Parameter Category	Specification Details	Value / Standard
Trace Impurity Profile	Copper (Cu) Maximum Limit	≤ 6 ppm
Trace Impurity Profile	Nickel (Ni) Maximum Limit	≤ 5 ppm
Trace Impurity Profile	Calcium (Ca) Maximum Limit	≤ 7 ppm
Trace Impurity Profile	Sodium (Na) Maximum Limit	≤ 6 ppm
Trace Impurity Profile	Potassium (K) Maximum Limit	≤ 5 ppm
Trace Impurity Profile	Magnesium (Mg) Maximum Limit	≤ 10 ppm
Trace Impurity Profile	Silicon (Si) Maximum Limit	≤ 15 ppm
Trace Impurity Profile	Zirconium (Zr) Maximum Limit	≤ 10 ppm
Processing Compatibility	Cold Isostatic Pressing (CIP) Response	Dense green body formation with minimal internal pore gradients
Processing Compatibility	Sintered Pellet Relative Density	> 86% achieved after high-temperature densification