

High Purity 99.9% Lithium Chips Coin Cell Battery Materials

Item Number: FZ40



Introduction

Engineered for coin cell fabrication and advanced battery research, our high-purity 99.9% lithium chips deliver exceptional surface consistency, ultra-low trace impurities, and precise dimensional tolerances to guarantee reproducible electrochemical performance in next-generation energy storage systems.

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Application	Description	Key Benefit
Coin Cell Half-Cell Assembly	Serves as the counter and reference electrode for testing cathode materials (NMC, LFP, LCO, sulfur) in CR2016, CR2025, and CR2032 form factors.	Provides a stable, unpolarised baseline potential with minimal voltage hysteresis across cycling profiles.
Solid-State Battery R&D	Acts as the metallic lithium anode interface paired against oxide, sulfide, or polymer solid-state electrolytes.	Flat, smooth surface topography minimizes interfacial contact impedance and voids at the solid-solid boundary.
Electrolyte Formulation Screening	Used in symmetrical Li-Li coin cells to evaluate stripping/plating overpotentials and Coulombic efficiency of advanced liquid or gel electrolytes.	High chemical purity prevents trace-metal-induced catalytic decomposition of sensitive fluorinated additives and solvents.
Anode Interphase (SEI) Studies	Provides a pristine metallic surface for in-situ and ex-situ characterization (XPS, AFM, SEM) of artificial SEI coatings and surface treatments.	Absence of native oxide or nitride contaminants ensures true observation of engineered interface dynamics.
Lithium-Sulfur & Lithium-Air Cells	Functions as a high-capacity negative electrode in exploratory open-system and high-energy-density multi-electron chemistry testing.	High bulk purity mitigates chemical crossover degradation and maintains anode integrity over high-depth-of-discharge cycles.
Academic Material Science Training	Standardized consumable for university laboratories conducting fundamental electrochemistry and cyclic voltammetry experiments.	High batch-to-batch consistency ensures experimental reproducibility across multiple student cohorts and research groups.

Specification Parameter	Standard Value	Typical Analysis Value	Unit / Condition
Product Identifier	FZ40	FZ40	—
Chemical Formula	Li	Li	Metallic Element
Lithium (Li) Purity	≥ 99.90	99.95	% (min)
Melting Point	180.5	180.5	°C
Density	0.534	0.534	g/cm³
Sodium (Na) Impurity	≤ 0.02	0.005	% (max)
Potassium (K) Impurity	≤ 0.005	0.001	% (max)
Calcium (Ca) Impurity	≤ 0.02	0.005	% (max)
Silicon (Si) Impurity	≤ 0.008	0.002	% (max)
Iron (Fe) Impurity	≤ 0.005	0.002	% (max)
Aluminum (Al) Impurity	≤ 0.005	0.002	% (max)
Nickel (Ni) Impurity	≤ 0.003	0.001	% (max)
Chloride (Cl) Impurity	≤ 0.006	0.002	% (max)
Nitrogen (N) Impurity	≤ 0.02	0.005	% (max)

Specification Parameter	Standard Value	Typical Analysis Value	Unit / Condition
Diameter Range (Small)	4.0 to 16.0	Tolerance: ± 0.02	mm
Thickness (Small Diameter, Thin)	0.2 to 0.3	Tolerance: ± 0.01	mm
Thickness (Small Diameter, Standard)	>0.3 to 0.6	Tolerance: ± 0.02	mm
Diameter Range (Large)	>16.0 to 21.0	Tolerance: ± 0.02	mm
Thickness (Large Diameter, Thin)	0.3 to 0.5	Tolerance: ± 0.02	mm
Thickness (Large Diameter, Medium)	>0.5 to 1.0	Tolerance: ± 0.03	mm
Thickness (Large Diameter, Thick)	>1.0 to 2.0	Tolerance: ± 0.04	mm
Surface Appearance	Flat, bright, lustrous, oil-free	No visible oxides, nitrides, holes, or folds	Visual inspection
Edge Quality	Clean cut, burr-free, no cracks	Smooth perimeter contour	Mechanical inspection
Inner Packaging	Argon-filled sealed metal can / Al-plastic bag	Packaged under controlled dry room conditions	Inert gas preservation
Outer Packaging	Corrugated carton or steel drum	Padded interior cushioning to avoid shifting	Transport protection
Storage Conditions	Dry, clean, rainproof, well-ventilated	Non-corrosive atmosphere; no outdoor storage	Ambient control
Product Shelf Life	6	From certified date of production	Months
Hazardous Classification	Dangerous Goods (Class 4.3 Water-Reactive)	Requires compliance documentation for shipping	Transport regulation