

Acid Resistant Ptfе Button Cell Battery Test Fixture Customizable Machining High Purity Electrochemical Testing Clamp

Item Number: PL-CP35



Introduction

High-purity PTFE button cell testing fixtures provide exceptional acid resistance and electrical insulation for precise electrochemical analysis. These customizable clamps eliminate stray currents and prevent electrolyte corrosion during rigorous battery research and development processes in demanding labs.

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Application	Description	Key Benefit
Next-Generation Li-ion R&D	Characterizing new electrolyte formulations and cathode/anode materials in coin cell formats.	Prevents electrolyte contamination and side reactions with the fixture.
Solid-State Battery Testing	Evaluating ion conductivity and interface stability in solid-state electrolytes under controlled pressure.	High insulation prevents baseline noise in low-current measurements.
Supercapacitor Analysis	Measuring charge-discharge profiles and ESR in high-performance electrochemical capacitors.	Low parasitic capacitance ensures accurate high-frequency response data.
Acidic Electrolyte Studies	Testing lead-acid or flow battery components in highly corrosive sulfuric acid environments.	Long-term resistance to acid mist and direct liquid contact.
Corrosion Research	Investigating the degradation of metallic components within electrochemical cells.	Material inertness ensures the fixture does not contribute to the corrosion profile.
EIS Characterization	Performing high-precision impedance spectroscopy to identify internal resistance components.	Minimal signal distortion due to superior dielectric properties of PTFE.
Aerospace Battery Testing	Conducting performance audits of button cells destined for extreme vacuum or high-altitude environments.	Outgassing-resistant materials maintain vacuum integrity and sample purity.

Feature	Specification Details (Model PL-CP35)
Base Material	High-Purity Polytetrafluoroethylene (PTFE)
Manufacturing Process	High-Precision Custom CNC Machining
Volume Resistivity	$> 10^{18} \Omega\cdot\text{cm}$
Dielectric Strength	$\sim 60 \text{ MV/m}$
Dielectric Constant	2.1 (at 1 MHz)
Chemical Resistance	Universal (Except molten alkali metals and fluorine gas)
Maximum Operating Temperature	Refer to specific custom configuration (Typically up to 260°C)
Contact Material Options	Customizable (Gold-plated, Stainless Steel, Platinum, etc.)
Cell Compatibility	Customizable (Commonly 2016, 2025, 2032, and bespoke sizes)
Customization Scope	Dimensions, terminal types, number of electrodes, and pressure mechanisms