



KINTEK

Battery Testing Fixtures & Molds Catalog

Contact us for more catalogs of PTFE(Teflon) Products, Sample Preparation & Filtration, Reaction & Synthesis Equipment, High-Purity & Trace Analysis, Custom Machining Services, General Consumables & Seals, Electrochemistry & New Energy Testing, Basic Labware & Containers, Fluid Transfer, Tubing & Valves, etc.

KINTEK

COMPANY PROFILE

>>> About Us

From everyday basic labware (beakers, measuring cylinders, crucibles, dishes, reagent/wash bottles, centrifuge and digestion tubes), high-purity trace analysis instruments, and cleaning/storage tanks, to comprehensive fluid transfer components (tubing, fittings, valves), sample prep and filtration tools (separatory funnels, burettes, filters, pipettes, tweezers, spatulas), and general consumables (stirring bars, O-rings, gaskets, seal tapes, caps, septa), extending all the way to advanced derivative and reaction apparatus like standard or custom electrochemical cells, battery testing fixtures, electrode accessories, hydrothermal synthesis liners, microwave digestion vessels, microchannel reactors, and condensation/reflux devices, KINTEK manufactures virtually all imaginable laboratory supplies crafted from PTFE and PFA. Backed by end-to-end custom CNC fabrication, we are equipped to deliver absolutely everything from complex non-standard machined parts and bespoke laboratory setups to high-volume orders, maintaining an exclusive and absolute focus on high-performance fluoropolymer materials.



Customizable Graphite Electrode Clamp PTFE Coated Corrosion Resistant

Item Number: PL-JM03



Introduction

High-performance graphite electrode clamp with interchangeable sample holders and PTFE coating for superior corrosion resistance. Customizable length and clamping width ensure fit for diverse electrochemical applications. Excellent conductivity and robust construction deliver reliable performance in demanding lab environments.

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Application	Description	Key Benefit
Corrosion Inhibitor Screening	Utilized in weight loss and electrochemical tests to hold metal coupons in inhibited acid solutions for efficiency evaluation.	PTFE coating prevents false readings from clamp corrosion, ensuring inhibitor performance is measured accurately.
Lithium-ion Battery R&D	Positions anode or cathode films within glovebox-integrated cells for charge-discharge and cyclic voltammetry tests.	Interchangeable plates minimize cross-contamination between material batches, critical for research purity.
Electrochemical Sensor Development	Secures functionalized electrodes during potentiometric or amperometric sensor prototyping.	Adjustable clamping pressure protects fragile surfaces while maintaining excellent electrical contact.
Electrodeposition Process Optimization	Serves as a robust cathode contact in custom plating reactors for studying deposit morphology and throwing power.	Chemically inert body eliminates background contamination, enabling clear interpretation of plating kinetics.
Materials Corrosion Education	Used in academic laboratories to demonstrate galvanic corrosion principles with varied metal pairs.	Quick sample change and durable design withstand frequent student use, reducing equipment damage.
Electrochemical Impedance Spectroscopy (EIS)	Holds coated metal panels for impedance analysis in evaluating coating performance.	Low and stable contact impedance ensures accurate EIS spectra without artifacts from the clamp.
Water Electrolysis Component Testing	Secures catalyst-coated membranes or porous transport layers in membrane electrode assembly tests.	Customizable dimensions fit diverse electrolyzer hardware; PTFE resists degradation from oxygen evolution environments.

Specification	Detail
Model Number	PP-JM03
Clamp Material	High-purity graphite
Coating	PTFE (polytetrafluoroethylene) full coverage
Overall Length	80 mm (standard); customization available
Graphite Terminal Post Diameter	10 mm
Maximum Sample Thickness	2 mm (custom clamping widths available upon request)
Sample Plate Features	Interchangeable, replaceable
Electrical Conductivity	High, low resistivity
Corrosion Resistance	Excellent in most laboratory acids, bases, and solvents
Recommended Operating Temperature	Room temperature (approx. 25°C)

Specification	Detail
Customization Options	Length, clamping width, terminal size, and other dimensions
Maintenance	Easy disassembly for cleaning and plate replacement

Pvdf Sample Support Body For Corrosion Testing And Electrochemical Analysis

Item Number: PL-JM02



Introduction

High-performance PVDF sample support body precisely controls working electrode reaction area for accurate corrosion testing and electrochemical analysis. Built for superior chemical resistance and long-term reliability, ideal for critical laboratory applications. Explore custom configurations to meet your specific experimental requirements.

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Application	Description	Key Benefit
Potentiodynamic Polarization for Corrosion Rate Determination	Used in linear polarization resistance (LPR) and Tafel extrapolation experiments per ASTM G59 to quantify corrosion current density (i_{corr}). The holder fixes the sample area at 1 cm ² , simplifying calculations and improving reproducibility.	Standardized area eliminates a major source of variability, ensuring corrosion rates are directly comparable across test batches.
Electrochemical Impedance Spectroscopy (EIS) for Coating Evaluation	Mounts coated metallic specimens as working electrodes to measure impedance changes over time, detecting coating delamination and water uptake. The stable electrical connection provided by the integrated electrode rod is critical for low-noise EIS measurements.	Consistent contact and restrained edge leakage yield impedance spectra with higher fidelity, enabling early detection of coating failure.
Cyclic Voltammetry for Corrosion Mechanism Studies	Facilitates sweeping potential to study oxidation/reduction processes, passivity, and pitting nucleation on metallic surfaces. The defined exposure area allows quantitative analysis of charge transfer and film formation kinetics.	Isolates the sample surface of interest, preventing parasitic currents from sample edges distorting voltammograms.
Material Screening for Chemical Processing Equipment	Tests candidate alloys, composites, and weldments in simulated process environments (e.g., chlorinated brines, hot acids) to rank corrosion resistance. Quick specimen clamping enables efficient screening of numerous materials.	Streamlines the material selection process, reducing development time and risk of in-service failure.
Galvanic Corrosion and Zero-Resistance Ammetry Studies	Used in ZRA mode to measure coupling currents between dissimilar metals, essential for evaluating galvanic compatibility. The holder ensures both samples have identical, controlled exposure areas.	Accurate area matching eliminates ambiguity in galvanic current density calculations.
Quality Control of Anodized or Passivated Surfaces	Evaluates the sealing performance and corrosion resistance of anodized aluminum or passivated stainless steel in production quality labs. The holder's non-metallic construction prevents any galvanic interference with the sample.	Provides a non-destructive, rapid electrochemical check of surface treatment effectiveness.
Undergraduate and Graduate Electrochemistry Instruction	Demonstrates concepts like mixed potential theory, polarization resistance, and Tafel behavior in university labs. The robust, user-friendly design withstands repeated use by novice operators.	Enhances hands-on learning with reliable, repeatable experiments that reinforce theoretical concepts.
Electrochemical Biosensor and Sensor Material Development	Holds test materials for evaluating electroactivity, sensitivity, and selectivity in analyte solutions, ensuring a consistent active area. The chemical inertness of PVDF avoids interfering background signals.	Supports reproducible sensor prototyping, accelerating development of reliable detection platforms.

Parameter	Value
Model	PL-JM02
Material	PVDF (Polyvinylidene Fluoride)
Electrode Rod Length	100 mm
Terminal Length	20 mm

Parameter	Value
Reaction Area	Approx. 1 cm ²
Maximum Sample Diameter	< 14.8 mm
Maximum Sample Thickness	< 5 mm
Primary Application	Control working electrode reaction area for corrosion testing

Stainless Steel Electrode Clip With Replaceable Tips For Electrochemical Research

Item Number: PL-JM01



Introduction

High-quality stainless steel electrode clip designed for secure sample holding in electrochemical cells. Features replaceable electrode tips and customizable dimensions for versatile lab use. Ideal for cyclic voltammetry, corrosion studies, and battery testing. Reliable electrical contact, 80mm length, customizable.

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Application	Description	Key Benefit
Cyclic Voltammetry (CV)	Securely attaches the working electrode for potential sweep experiments.	Stable contact ensures smooth current-voltage curves without noise.
Electrochemical Impedance Spectroscopy (EIS)	Holds the electrode stationary during frequency response analysis.	Minimizes impedance artifacts from mechanical movement, providing accurate spectra.
Linear Sweep Voltammetry (LSV)	Used to fix the electrode in place for rapid potential scans.	Fast and repeatable clamping prevents sample slippage.
Corrosion Rate Monitoring	Grips metallic test coupons for Tafel and linear polarization resistance measurements.	Stainless steel construction resists corrosive media, preventing galvanic interference.
Battery Electrode Testing	Holds anode or cathode films for charge/discharge cycling in coin cell or three-electrode setups.	Customizable length allows integration into custom battery holders.
Electroplating Studies	Clamps substrates for deposition of metals or conductive polymers.	Replaceable tips avoid cross-contamination between different plating baths.
Sensor Characterization	Fixes sensor elements during amperometric or potentiometric evaluation.	Repeatable clamping force ensures consistent sensor-to-electrolyte contact.
Educational Laboratories	Simple and robust tool for teaching electrochemical principles.	User-friendly design reduces setup time and enhances student learning.

Specification	Value
Model Number	PL-JM01
Material	Stainless Steel
Electrode Clip Length	80 mm (standard, customizable)
Terminal Length	20 mm
Clamp Gap Width	≤ 5 mm (standard, customizable)
Electrode Tip	User-replaceable, compatible with various metals (customizable)
Operating Temperature Range (with optional PTFE jacket)	-200 °C to +250 °C
Dielectric Strength (with optional PTFE jacket)	>60 MV/m

Replaceable Platinum Electrode Clamp PTFE Corrosion Resistant Sample Holder

Item Number: PL-JM04



Introduction

High-performance replaceable platinum electrode clamp with PTFE holder and pure platinum connection, offering superior corrosion resistance and electrical conductivity. Standard 80mm length supports 1.5mm samples; fully customizable. Ideal for electrochemistry and corrosion studies. Contact KINTEK for a custom solution.

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Application	Description	Key Benefit
Corrosion Rate Measurement	Working electrode holder in potentiodynamic polarization and linear polarization resistance tests on metal coupons.	Secure clamping prevents crevice corrosion artifacts and ensures uniform current distribution.
Battery Electrode Screening	Holds anode or cathode foils during cyclic voltammetry and galvanostatic charge-discharge cycling in coin cell or three-electrode setups.	Rapid sample exchange enables parallel screening of dozens of electrode formulations per day.
Electroplating Process Development	Used as a cathode clamp in Hull cell or beaker-scale plating experiments to evaluate deposit quality.	Inert materials eliminate contamination that could alter plating bath chemistry or deposit properties.
Electrocatalytic Activity Testing	Mounts catalyst-coated substrates (e.g., glassy carbon, metal mesh) for oxygen reduction, hydrogen evolution, or CO ₂ reduction studies.	Pure platinum contact minimizes background currents, improving detection limits for faradaic processes.
Electrochemical Sensor Fabrication	Clamps functionalized electrodes during amperometric or potentiometric sensor calibration and testing.	Interchangeable sample design allows direct comparison of different receptor films on identical substrates.
Ionic Conductivity Studies	Holds thin electrolyte membranes or solid-state electrolytes for impedance spectroscopy in temperature-controlled cells.	Adjustable slit width accommodates delicate membranes without fracturing them.
Teaching and Academic Laboratories	Demonstrates fundamental electrochemical concepts (e.g., Tafel plots, diffusion-limited currents) using disposable metal coupons.	Rugged, chemically resistant construction withstands harsh student handling and repeated cleaning.
Quality Control in Metal Finishing	Used in passivation or anodizing tests to verify surface treatment effectiveness on production parts.	Reliable electrical contact and inert holder ensure test repeatability across batches.

Specification	Value
Product Item Number	PP-JM04
Outer Sleeve Material	PTFE (Polytetrafluoroethylene)
Connection Material	Pure Platinum
Electrode Clamp Length	80 mm (standard), custom lengths available
Binding Post Length	20 mm
Clamp Slit Width	≤ 1.5 mm (supports sample pieces up to 1.5 mm thickness), customizable
Diameter Tolerance	±0.1 mm
Length Tolerance	±2 mm
Recommended Operating Temperature	Room temperature (ambient conditions recommended for optimal platinum contact integrity)

Specification	Value
Sample Exchange Mechanism	Tool-free replacement; sample piece is pressure-fitted

Peek Glassy Carbon Electrode Clamp With Replaceable Tips For Electrochemical Analysis

Item Number: PL-JM05



Introduction

Glassy carbon electrode clamp with PEEK body and replaceable tips, clamping width up to 2mm. 80mm length, 20mm terminal. Ideal for electrochemical cells, corrosion studies. Custom dimensions available. Request a quote for bulk orders or tailored solutions. Get competitive pricing.

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Application	Description	Key Benefit
Electrochemical Sensor R&D	Holding microelectrodes or modified surfaces in a three-electrode cell for characterizing sensor responses to analytes.	Quick tip swapping accelerates screening of multiple electrode modifications without recalibrating the setup.
Corrosion and Electrochemical Testing	Mounting metal alloy or coated samples for potentiodynamic polarization scans and EIS in aggressive acidic or saline environments.	PEEK body eliminates the risk of galvanic corrosion or contamination from metal components, preserving solution integrity.
Battery Material Evaluation	Clamping electrode films or pellets during cyclic voltammetry and galvanostatic cycling to assess capacity and stability.	Uniform clamping force ensures consistent electrical contact, preventing artifacts in electrochemical data.
Electroplating Process Development	Holding cathode substrates during metal deposition, requiring stable contact in acidic or alkaline plating baths.	Glassy carbon tip resists deposition and can be polished clean, maintaining reproducible surface conditions.
Photoelectrochemistry Studies	Securing semiconductor photoelectrodes in illuminated cells for water splitting or CO2 reduction experiments.	Adjustable design accommodates various substrate thicknesses, and black PEEK minimizes light reflection artifacts.
Academic Laboratory Demonstrations	Teaching fundamentals of voltammetry and electrode kinetics with robust, student-proof equipment.	Durable, easy-to-clean clamp withstands frequent handling and reduces the cost of consumables in education.
Electrocatalysis Research	Immobilizing catalyst-coated electrodes for oxygen evolution or CO2 reduction studies in flow cells.	Stable clamping prevents catalyst delamination, ensuring accurate assessment of turnover frequencies.
Environmental Monitoring	Holding screen-printed electrodes for on-site heavy metal detection in water samples.	Field-deployable thanks to chemical robustness and easy cleaning between samples.

Parameter	Specification
Model Number	PL-JM05
Body Material	PEEK
Electrode Tip Material	Glassy Carbon
Clamp Length	80 mm (standard, custom lengths available)
Terminal Post Length	20 mm
Clamping Width	≤2 mm (supports samples up to 2 mm, can be customized)
Tip Replacement	Tool-free, interchangeable tips
Customization Options	Length, clamping width, terminal post, tip material - contact for details



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