KINTEK

Reagent Bottles & Wash Bottles 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.

Custom Ptfe Wide Mouth Reagent Reaction Bottle Corrosion Resistant High Temperature Large Capacity Straight Body Laboratory Vessel

Item Number: PL-CP282

Introduction

High-performance custom PTFE reagent reaction bottles offering extreme chemical resistance and thermal stability. Engineered for high-purity applications, these large-capacity wide-mouth vessels ensure leak-proof storage and reaction processes in demanding industrial laboratory environments.

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Application	Description	Key Benefit
Trace Metal Analysis	Storage and digestion of samples using concentrated nitric or hydrofluoric acid for ICP-MS preparation.	Prevents metal ion leaching and background contamination.
Pharmaceutical Synthesis	Serving as a primary reaction vessel for the synthesis of active pharmaceutical ingredients (APIs) involving corrosive precursors.	High thermal stability and chemical purity ensure batch consistency.
Semiconductor Processing	Handling and storage of ultra-high purity etching chemicals and solvents used in wafer fabrication.	Maintains sub-ppb purity levels by resisting chemical degradation.
Petrochemical Testing	High-temperature storage of petroleum derivatives and catalysts that degrade standard plastic labware.	Excellent durability in the presence of hydrocarbons and heat.
Cryogenic Storage	Preservation of sensitive biological or chemical samples in liquid nitrogen environments.	Retains flexibility and structural integrity at extreme sub-zero temperatures.
Battery Research	Handling of electrolyte solutions and reactive lithium-based components during testing and assembly.	Non-reactive surface prevents interference with sensitive electrochemical tests.
Food & Beverage Quality	Testing of acidic food components and storage of flavoring concentrates that require FDA-compliant materials.	Non-toxic, inert surface prevents flavor carryover and contamination.

Attribute	Specification Detail (PL-CP282)
Model Identifier	PL-CP282 Series
Construction Material	100% Virgin Polytetrafluoroethylene (PTFE)
Fabrication Method	Precision Custom CNC Machined
Specific Gravity	2.10 - 2.20 g/cc
Melting Point	327°C (621°F)
Continuous Service Temp	-200°C to +260°C
Tensile Strength	2990 - 4970 psi
Flexural Strength	2490 psi
Hardness (Shore D)	55D
Coefficient of Friction	0.110 (Dynamic)

Application	Description	Key Benefit
Attribute	**Specification Detail (PL-CP282)**	
Dielectric Constant	2.1	
Water Absorption (24hr)	0.01%	
Heat Deflection Temp (66 psi)	120°C (248°F)	
Vessel Capacity	Customizable (Small scale to Large industrial sizes)	
Mouth Diameter	Customizable (Standard Wide-Mouth or Bespoke)	
Body Style	Straight-walled, heavy-duty construction	
Cap Design	PTFE Screw-cap with integrated sealing ridges	
Surface Finish	Crevice-free, high-purity machined finish	

Custom Ptfe Volumetric Flasks For Advanced Scientific And Industrial Use

Item Number: PL-1018

Introduction

Premium PTFE volumetric flasks for labs – chemical-resistant, non-stick, precise measurements. Ideal for semiconductor, medical & analytical applications. Shop now!

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Volume (mL)	Inner Mouth Diameter (mm)	Max Outer Diameter (mm)	Total Height (mm)	Weight (g)
25	17	41	97	41
50	23	52	117	73
100	23	65	117	111
200	29	88	158	232
250	29	90	169	277
500	34	110	213	409
1000	38	150	260	965

Custom Ptfe Gas Washing Bottle Corrosion Resistant Chemical Absorption Vessel With Quarter Inch Tubing Connections

Item Number: PL-CP41

Introduction

Engineered for extreme chemical environments, this custom PTFE gas washing bottle provides unmatched corrosion resistance for aggressive gas scrubbing and absorption, featuring secure quarter-inch tubing connections and bespoke configurations for high-purity laboratory research and demanding industrial chemical applications.

Learn More

Application	Description	Key Benefit
Semiconductor Gas Scrubbing	Removal of toxic or reactive process gases like HF or Silane from exhaust streams during wafer fabrication.	Prevents equipment corrosion and ensures environmental compliance in high-purity settings.
Trace Metal Analysis	Preparing samples for ICP-MS by bubbling gases through high-purity acids to trap volatile metallic impurities.	Eliminates background noise and contamination from the vessel material itself.
Pharmaceutical Synthesis	Controlling gas-liquid reactions in the production of Active Pharmaceutical Ingredients (APIs) involving corrosive catalysts.	Maintains product purity and withstands aggressive organic solvent environments.
Environmental Monitoring	Capturing sulfur dioxides or nitrogen oxides from industrial flue gas samples for laboratory quantification.	Ensures accurate sample capture without the risk of the vessel reacting with the target analytes.
Petrochemical Pilot Plants	Testing new catalysts or additives by introducing gaseous reactants into pressurized liquid hydrocarbons.	Provides high-pressure safety and chemical resistance to complex hydrocarbon mixtures.
Electrochemical Cell Venting	Scrubbing corrosive gases generated during high-capacity battery testing or electrolysis experiments.	Protects sensitive laboratory electronics from acid mist and corrosive vapors.
Acid Neutralization	Neutralizing high-concentration acidic vapors produced during digestion processes in metallurgical labs.	Long service life compared to glass scrubbers that etch and fail over time.
Specialty Gas Purification	Removing moisture or trace oxygen from inert gas lines using specialized liquid drying agents or scavengers.	High-integrity seals prevent atmospheric ingress, maintaining gas dryness and purity.

Parameter Type	Specification Details for PL-CP41
Core Material	Virgin High-Purity PTFE (Polytetrafluoroethylene)
Design Type	Custom-fabricated Gas Washing / Absorption Bottle
Standard Port Configuration	Dual-port cap with 1/4 inch (6.35mm) tubing connections
Connection Mechanism	Integrated compression fittings or NPT threaded ports
Volume Capacity	Fully Customizable (Commonly range from 50mL to 5000mL)
Internal Sparger	Optional PTFE frit or perforated dip tube (Customizable porosity)
Operating Temperature	-200°C to +260°C (Consistent performance across range)

Application	Description	Key Benefit
Parameter Type	**Specification Details for PL-CP41**	
Chemical Resistance	Resistant to all known chemicals except molten alkali metals and elemental fluorine	
Sealing Gasket	Integrated PTFE-to-PTFE seal or optional FEP-encapsulated O-rings	
Surface Finish	Smooth CNC-machined finish to minimize residue and facilitate cleaning	
Fabrication Method	100% Precision CNC Machining (No molding or adhesives used)	

Custom Ptfe Bottles For Diverse Industrial Applications

Item Number: PL-1010

Introduction

High-purity PTFE bottles for chemical storage, resistant to acids & solvents. Wide/narrow mouth options, leak-proof, durable. Ideal for labs & industry.

Learn More

Volume	Height	Diameter	Mouth Diameter	Weight
50ml	86mm	45mm	22mm	94.4g
100ml	107mm	54mm	30mm	144.7g
150ml	110mm	62mm	30mm	183.3g
200ml	123mm	70mm	37mm	244.9g
250ml	131mm	71mm	37mm	248g
500ml	153mm	82mm	35mm	364.7g
1000ml	195mm	109mm	51mm	836.2g

Volume	Height	Diameter	Mouth Diameter	Weight
50ml	86mm	45mm	22mm	94.4g
100ml	115mm	54mm	22mm	133.9g
150ml	110mm	62mm	22mm	173.8g
200ml	126mm	70mm	30mm	228g
250ml	135mm	71mm	30mm	242g
500ml	154mm	82mm	30mm	340.7g
1000ml	190mm	109mm	35mm	733.6g

Large Capacity 5L Ptfe Storage Tank And Custom Reagent Bottle Corrosion Resistant Leakproof Screw Seal Laboratory Container With Ptfe Cap

Item Number: PL-CP127

Introduction

High-performance 5L PTFE storage tanks and custom reagent bottles offer exceptional corrosion resistance and leakproof screw seals. Ideal for demanding industrial chemical storage and high-purity laboratory applications requiring durable, inert, and customizable fluoropolymer solutions for aggressive media.

Learn More

Application	Description	Key Benefit
Semiconductor Processing	Storage and dispensing of ultra-pure etchings and cleaning solvents.	Prevents metallic contamination critical for wafer yields.
Pharmaceutical Research	Containment of reactive intermediate compounds and bulk pharmaceutical ingredients.	Ensures batch purity and prevents material-reagent interaction.
Petrochemical Analysis	Handling of aggressive crude oil samples and corrosive refining chemicals.	Long-term durability against hydrocarbon solvents and acids.
Trace Metal Analysis	Preparation and storage of calibration standards for ICP-MS and AAS.	Minimal leaching and superior cleaning for low-level detection.
Battery Material Testing	Storage of electrolytes and corrosive battery slurry components during R&D.	Resistance to aggressive lithium salts and acidic compounds.
Cryogenic Storage	Preservation of biological samples or specialized chemicals in liquid nitrogen.	Retains flexibility and sealing performance at -200°C.
High-Temperature Dissolution	Digestion of mineral samples using concentrated acids at elevated temperatures.	Safe containment of pressurized acid vapors up to 260°C.
Bulk Reagent Distribution	Centralized storage for lab-wide distribution of high-purity acids and bases.	Reduces refill frequency and minimizes handling risks.

Parameter	Specification Detail (Model PL-CP127)
Model Series	PL-CP127
Base Capacity	5000ml (5L) / Fully Customizable Sizes Available
Material Construction	100% High-Purity Virgin PTFE
Closure Type	PTFE Screw Cap with Precision Sealing Surface
Operating Temperature Range	-200°C to +260°C (-328°F to +500°F)
Chemical Resistance	Universal (Except molten alkali metals and elemental fluorine)
Surface Finish	CNC Machined, Crevice-Free Ultra-Smooth Interior
Customization Options	Dimensions, Volume, Porting, and Fittings per client specification
Sealing Performance	Leak-proof, vapor-tight under standard laboratory conditions
Wall Type	Heavy-duty, thick-wall industrial grade

Ptfe Fluoropolymer Reagent Bottles And Sampling Containers For Corrosion Resistant Low Background Chemical Storage

Item Number: PL-CP73

Introduction

Secure high-purity chemical storage with these corrosion-resistant PTFE sampling bottles. Designed for low-background trace analysis and extreme temperatures, these durable Teflon containers provide leak-free performance for aggressive acids and pharmaceutical research in demanding industrial laboratory environments.

Learn More

Application	Description	Key Benefit
Trace Element Analysis	Storage of ultra-pure acids and standards for sensitive spectroscopy.	Minimal leaching ensures analytical accuracy.
Semiconductor Processing	Containment of aggressive etching chemicals like hydrofluoric acid.	Absolute resistance to chemical degradation.
Pharmaceutical Research	Storage of active pharmaceutical ingredients (APIs) and reactive intermediates.	Inert environment prevents sample degradation.
Cryogenic Sampling	Preservation of biological or chemical samples in liquid nitrogen environments.	Maintains flexibility and seal at -200°C.
Petrochemical Testing	Handling of high-temperature hydrocarbons and corrosive additives.	High thermal stability prevents deformation.
Environmental Monitoring	Collection of soil and water samples for volatile organic compound (VOC) testing.	Zero gas permeability and non-reactive walls.
Battery Technology R&D	Storage and transfer of corrosive electrolytes for lithium-ion research.	Prevents contamination of high-purity liquids.

Feature	Specification Details (PL-CP73)
Product Item Number	PL-CP73
Material Composition	Virgin PTFE (Polytetrafluoroethylene)
Capacity Options	250ml, 500ml (Standard); Custom volumes available
Temperature Range	-200°C to +260°C (-328°F to +500°F)
Chemical Compatibility	Universal (Except elemental fluorine and molten alkali metals)
Sealing Mechanism	Precision-machined PTFE screw cap (Leak-proof)
Wall Thickness	Heavy-wall industrial grade (Customizable)
Internal Finish	Super-smooth, crevice-free (Low background)
Surface Properties	Hydrophobic, Non-stick, Non-toxic
Manufacturing Method	High-precision molding and CNC finishing
Compliance	Suitable for FDA-regulated environments

High Purity Ptfe Gas Washing Bottle With Sintered Filter Ball Corrosion Resistant Slender Laboratory Scrubber Customizable Height And Width

Item Number: PL-CP291

Introduction

Precision engineered PTFE gas washing bottle featuring a sintered filter ball and fully customizable slender profile. This corrosion-resistant scrubber offers exceptional thermal stability and chemical inertness for demanding industrial laboratory gas purification and trace analysis workflows delivering superior results consistently.

Learn More

Application	Description	Key Benefit
Semiconductor Gas Scrubbing	Removal of acidic or basic impurities from specialized process gases used in wafer fabrication.	Prevents contamination of high-purity environments.
Trace Metal Analysis	Preparation of samples using concentrated mineral acids where glass leaching would interfere with results.	Ensures ultra-low detection limits are maintained.
Environmental Monitoring	Scrubbing of air samples through reagents to capture pollutants or atmospheric gases for study.	High capture efficiency due to sintered ball dispersion.
Battery Research	Handling of aggressive electrolyte gases and volatile organic compounds during cycle testing.	Material longevity in the presence of reactive lithium salts.
Chemical Pilot Plants	Scaling up reactions that involve the introduction of corrosive gases into liquid phases.	Customizable dimensions to match specific pilot-scale volumes.
Pharmaceutical Synthesis	Neutralization of toxic byproduct gases during the synthesis of active pharmaceutical ingredients (APIs).	Absolute chemical purity prevents batch contamination.
Desiccant Gas Drying	Passing moist gas through sulfuric acid or other liquid desiccants to achieve ultra-dry gas streams.	High thermal resistance during exothermic hydration.
Trace Analysis Scrubber	Final stage purification of inert gases (Argon/Nitrogen) to remove residual oxygen or moisture.	Maintains gas purity at the parts-per-billion level.

Specification Category	Parameter Details for PL-CP291	Data / Range
Model Identifier	Product Item Number	PL-CP291 Series
Base Material	Primary Construction	High-Purity PTFE (White)
Filter Element	Type	Integrated Sintered PTFE Filter Ball
Temperature Range	Operational Limits	-400°F to +500°F (-240°C to +260°C)
Chemical Resistance	Range of Media	Universal (Acid, Alkali, Organic Solvents)
Dimensions: Height	Vertical Profile	Fully Customizable (Bespoke per order)
Dimensions: Width	Vessel Diameter	Fully Customizable (Bespoke per order)
Connection Type	Interface Style	Standard Threaded or Custom Machined

Application	Description	Key Benefit
Specification Category	**Parameter Details for PL-CP291**	**Data / Range**
Surface Friction	Coefficient	Extremely Low (Facilitates easy cleaning)
Mechanical Property	Tensile Strength	High Resistance to Deformation
Weight Class	Handling Profile	Lightweight / High Strength-to-Weight Ratio

High Purity Pfa Volumetric Flask Acid Resistant Perfluoroalkoxy Trace Analysis Container Custom Mold Fabrication 1000Ml 2000Ml

Item Number: PL-CP399

Introduction

High-purity PFA volumetric flasks designed for trace analysis and strong acid environments. Featuring exceptional chemical resistance and ultra-low metal leaching, these 1000ml and 2000ml containers support custom mold fabrication for specific laboratory precision and performance requirements.

Learn More

Application	Description	Key Benefit
Trace Arsenic Detection	Processing and storage of digestion solutions for environmental monitoring and food safety.	Prevents analytical bias caused by container adsorption or metal leaching.
Semiconductor Processing	Handling of ultra-pure acids and etching solutions during wafer fabrication and cleaning.	Maintains ultra-high purity levels required for sub-micron manufacturing processes.
Pharmaceutical Quality Control	Preparation of standard solutions for heavy metal testing in drug development and manufacturing.	Ensures accurate concentration maintenance without interference from the vessel material.
Geochemical Analysis	Acid digestion of geological samples using concentrated HF and mineral acids for elemental profiling.	Withstands aggressive acid mixtures that would dissolve or contaminate glass containers.
Petrochemical Research	Storage and measurement of volatile organic compounds and corrosive catalysts in R&D labs.	Provides long-term durability and chemical resistance in harsh industrial research settings.
Battery Material Testing	Handling of electrolyte solutions and precursor chemicals for lithium-ion battery development.	Chemical inertness ensures that sensitive electrochemical properties are not altered by the container.
Environmental Water Sampling	Collection and stabilization of water samples for regulatory trace metal analysis in offshore or remote sites.	Lightweight, shatterproof construction combined with high-purity storage capabilities.

Feature	Specification Details for PL-CP399
Product Item Number	PL-CP399
Material Construction	100% Virgin High-Purity Perfluoroalkoxy (PFA)
Available Capacities	1000ml, 2000ml, and Custom Sizes
Chemical Compatibility	Universal (Strong Acids, Bases, Solvents, Oxidizers)
Contamination Profile	Ultra-low background for trace metal analysis
Temperature Resistance	Customizable based on application requirements
Fabrication Method	Support for custom mold processing and precision CNC machining
Closure Type	Precision-threaded PFA screw cap with leak-proof seal
Volumetric Accuracy	Class A standards or Bespoke Tolerance Specifications
Customization Options	Available for specialized dimensions, shapes, and volume markings

Corrosion Resistant Ptfe Gas Washing Bottle For Chemical Absorption With Series Connection Support And Precision Quarter Inch Tube Fittings

Item Number: PL-CP406

Introduction

High-performance PTFE gas washing bottle designed for superior chemical resistance and modular series connection in demanding laboratory environments. Features precision 1/4 inch fittings and customizable dimensions to meet specific industrial gas absorption and high-purity fluid processing requirements.

Learn More

Application	Description	Key Benefit
Semiconductor Gas Scrubbing	Removing corrosive etching byproducts and dopants from exhaust streams during wafer fabrication.	Prevents equipment corrosion and ensures environmental compliance.
Trace Metal Analysis	Washing carrier gases to remove impurities before they reach high-purity analytical instruments like ICP-MS.	Eliminates background noise and improves detection limits.
Petrochemical Pilot Plants	Absorbing sulfur compounds and volatile organic compounds (VOCs) from hydrocarbon gas samples.	High-pressure resistance and chemical stability under heavy loads.
Pharmaceutical Synthesis	Neutralizing acidic gases such as HCl or SO2 generated during large-scale organic synthesis reactions.	Protects laboratory staff and prevents vessel pressure build-up.
Environmental Monitoring	Collecting airborne pollutants by bubbling ambient air through specific chemical absorption media.	Durable for field use and resistant to diverse outdoor contaminants.
Acid Digestion Pre-treatment	Scrubbing hazardous fumes generated during the digestion of ore or soil samples in mineralogy labs.	Long-term resistance to high-concentration acid vapors.
Hydrogen Fuel Cell Testing	Humidifying or purifying hydrogen gas streams before they enter the fuel cell stack for performance evaluation.	Maintains gas purity without adding metallic or ionic contaminants.

Feature	Specification Details for PL-CP406
Model Identifier	PL-CP406
Core Material	100% High-Purity Virgin PTFE (Polytetrafluoroethylene)
Connection Interface	1/4" (Quarter Inch) Compression Fittings or NPT Threads
Configuration	Single-unit or Series-connectable (Modular Design)
Standard Volume Range	Customizable (Available in 100ml, 250ml, 500ml, 1000ml, and Bespoke Sizes)
Operating Temperature	-200°C to +260°C (-328°F to +500°F)
Chemical Resistance	Universal resistance to nearly all acids, alkalis, and solvents
Machining Precision	CNC-machined for high-tolerance sealing and wall consistency
Internal Components	Customizable dip tube length and gas dispersion frit porosity

Application	Description	Key Benefit
Feature	**Specification Details for PL-CP406**	
Fitting Compatibility	Compatible with PFA, PTFE, and FEP tubing systems	
Pressure Rating	Dependent on custom wall thickness and fitting selection	
Cleaning Requirements	Compatible with ultrasonic cleaning and autoclave cycles	

Large Capacity Ptfe Reaction Bottle 2L Wide Mouth Fluoropolymer Extraction Vessel Compatible With Rotary Agitators

Item Number: PL-CP319

Introduction

High-performance 2L PTFE reaction bottles designed for extreme chemical resistance and compatibility with rotary shakers. Ideal for trace analysis and corrosive extractions, these wide-mouth vessels offer superior leak-proof sealing and end-to-end laboratory customization for demanding industrial processes.

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Application	Description	Key Benefit
Environmental Leachate Extraction	Used in TCLP and other regulatory leaching protocols to identify hazardous waste characteristics.	Total resistance to acidic leaching fluids and mechanical durability during 18-hour rotation cycles.
Trace Metal Analysis	Preparation and storage of high-purity samples for ICP-MS or AAS analysis in cleanroom environments.	Zero background contamination and ultra-low adsorption of metal ions onto vessel walls.
Semiconductor Chemical Prep	Handling of ultra-pure etchants and cleaning solutions used in wafer fabrication processes.	Maintains the extreme purity of electronic-grade chemicals without leaching silica or boron.
Pharmaceutical Formulation	Mixing and synthesis of volatile or highly reactive pharmaceutical intermediates and active ingredients.	Excellent compatibility with organic solvents and ease of sterilization for aseptic processes.
Battery Research	Testing of electrolyte stability and synthesis of cathode/anode materials in corrosive environments.	Resistance to lithium salts and high-temperature stability during electrochemical testing.
Pesticide Residue Analysis	Extraction of residues from agricultural products using organic solvents and intensive shaking.	Non-reactive surface ensures that delicate organic molecules are not degraded or absorbed.
Geochemical Digestion	Dissolution of mineral ores and soil samples using concentrated hydrofluoric or nitric acids.	Safely contains dangerous acids that would dissolve glass or compromise standard polymers.

Parameter	Specification for PL-CP319	Customization Options
Model Number	PL-CP319	Bespoke variants available
Nominal Capacity	2000ml (2L)	50ml to 50L custom volumes
Material Construction	High-Purity Virgin PTFE (F4)	PFA, TFM, or Modified PTFE options
Mouth Diameter	Wide-mouth industrial standard	Custom neck diameters and taper angles
Closure Type	PTFE Screw Cap (Heavy Duty)	Septum caps, GL45 threads, or flat seals
Temperature Range	-200°C to +260°C	Enhanced thermal stabilization available
Chemical Compatibility	Universal (except molten alkali metals)	Specialized liners for fluorine gas
Wall Thickness	Standard heavy-duty (Reinforced)	Variable thickness for pressure resistance
Compatible Equipment	FZ-4 Rotary Shakers and equivalents	Custom adapters for specific shaker brands
Internal Finish	< 0.5µm Ra (Crevice-free)	Ultra-mirror polishing available

Application	Description	Key Benefit
Parameter	**Specification for PL-CP319**	**Customization Options**
Dimensions	Standard 2L Form Factor	Fully customizable height and width profiles
Handling Features	Integrated ergonomic grips	Optional lifting handles or fluted sides

High Purity Ptfe Gas Washing Bottle Corrosion Resistant Custom Gas Absorption Unit 1/4 Inch Tube Connection

Item Number: PL-CP192

Introduction

Engineered for extreme chemical environments, this custom PTFE gas washing bottle provides universal corrosion resistance and high-purity gas absorption. Optimized for 1/4 inch tubing, it ensures leak-proof performance and precise humidity regulation for sensitive industrial applications.

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Application	Description	Key Benefit
Trace Metal Analysis	Used to scrub impurities from carrier gases before they enter high-sensitivity analytical instruments like ICP-MS.	Prevents background noise and ensures sub-ppb detection limits by eliminating leachable contaminants.
Semiconductor Gas Processing	Scrubbing of corrosive process gases (e.g., HF, HCl) used in wafer etching and cleaning steps.	High-purity PTFE prevents metal ion contamination which can ruin semiconductor device yields.
Environmental Simulation	Creating specific humidity environments to test the degradation mechanisms of materials under controlled climatic conditions.	Delivers highly stable and uniform humidity gradients compared to mechanical atomizers.
Petrochemical Refining	Absorption of hydrogen sulfide (H2S) or other acidic components from gas streams in pilot plant reactors.	Near-universal corrosion resistance ensures long-term operation in extremely aggressive sulfurous environments.
Pharmaceutical Synthesis	Controlling the flow of reagent gases through liquid catalysts or absorption buffers in specialized reaction paths.	Ensures the purity of the final API by providing a completely inert reaction environment.
Battery Research	Used in electrolyte testing and gas evolution analysis during battery charge/discharge cycles.	Withstands corrosive electrolytes and provides precise control over gas capture for volumetric analysis.
Aerosol Research	Pre-conditioning of gas streams through controlled bubbling to achieve specific vapor pressures.	Precision machining allows for optimized bubble size and distribution, improving absorption efficiency.
Custom Lab Setups	Integration into bespoke vacuum lines or pressure-regulated manifolds for specialized chemical engineering tasks.	Customizable port sizes and bottle volumes allow for perfect fitment in non-standard laboratory footprints.

Feature	Specification Details for PL-CP192
Product Identifier	PL-CP192 Custom PTFE Gas Washing Bottle
Material Construction	High-purity Virgin Polytetrafluoroethylene (PTFE)
Customization Scope	Fully customizable dimensions, volumes, and port configurations
Standard Interface	1/4" Tube Connectors (Custom sizes available upon request)
Chemical Resistance	Inert to all common acids, bases, and organic solvents (pH 0-14)
Operating Temperature	-200°C to +260°C (Consistent performance across wide range)
Manufacturing Process	Precision CNC Machining from solid PTFE block
Sealing Mechanism	Threaded PTFE cap with integrated sealing ring

Application	Description	Key Benefit
Feature	**Specification Details for PL-CP192**	
Cleaning Compatibility	Autoclavable; compatible with strong cleaning agents and ultrasonic baths	
Surface Finish	Smooth, low-energy surface to minimize residue buildup	
Dip Tube Design	Customizable length and tip style (e.g., straight cut or fritted)	

High Purity Ptfe 2L Reagent Bottle Low Background Custom Size Fluoropolymer Extraction Vessel

Item Number: PL-CP311

Introduction

Professional high-purity PTFE 2L reagent bottles for trace analysis and chemical extraction. These non-leaching low-background fluoropolymer vessels feature customizable dimensions and shapes for demanding laboratory applications involving aggressive acids and high-temperature organic solvents.

Learn More

Application	Description	Key Benefit
Trace Metal Analysis	Storage of high-purity diluents and rinsing solutions (e.g., 2% HNO3) for ICP-MS and AAS detection.	Eliminates leaching and ensures sub-ppb detection accuracy.
Semiconductor Processing	Transport and containment of ultra-pure wet chemicals used in wafer cleaning and etching stages.	Maintains reagent purity levels required for microelectronic manufacturing.
Pharmaceutical Extraction	Solvent extraction of active ingredients from biological matrices or plant materials.	Chemical stability prevents cross-reaction between the vessel and the sample.
Isotope Geochemistry	Digestion and dissolution of rock or soil samples using concentrated hydrofluoric acid.	Superior resistance to HF which would dissolve standard glass labware.
Environmental Monitoring	Long-term storage of water and soil samples for heavy metal and pesticide residue testing.	Non-adsorptive walls prevent loss of micro-components during storage.
Electrolyte Storage	Containment of aggressive battery electrolytes during material testing and cell assembly.	Prevents contamination and withstands corrosive organic solvent blends.
Cryogenic Research	Handling of liquid gases or samples at extremely low temperatures for physical science experiments.	Material remains ductile and leak-proof even in cryogenic environments.
Custom Reaction Vessels	Integration into specialized synthesis rigs as a bespoke reaction chamber with specific ports.	Fully customizable shape allows for seamless integration into complex setups.

Specification Category	Parameter Details (Model PL-CP311)
Product Identifier	PL-CP311
Material Construction	100% High-Purity Virgin PTFE (Polytetrafluoroethylene)
Nominal Capacity	2000ml (2 Liters) - Fully Customizable
Thermal Range	-200°C to +260°C (-328°F to +500°F)
Wall Type	Heavy-wall construction for industrial durability
Closure Type	PTFE Screw Cap with precision-machined internal seal
Chemical Resistance	Universal resistance (except molten alkali metals and elemental fluorine)
Internal Finish	Super-smooth, crevice-free finish to prevent sample carryover
Cleaning Compatibility	Autoclavable; compatible with ultrasonic cleaning and acid leaching

Application	Description	Key Benefit
Specification Category	**Parameter Details (Model PL-CP311)**	
Customization Options	Dimensions, neck diameter, thread type, and overall geometry (Custom Product)	
Surface Energy	Low surface tension (hydrophobic/non-stick)	
Manufacturing Process	Precision CNC Machined from solid block or high-quality mold	

High Purity Opaque White Ptfe Chemical Storage Barrels And Customizable Fluoropolymer Reaction Sampling Vessels

Item Number: PL-CP116

Introduction

Discover premium high-purity PTFE reaction barrels and opaque storage vessels engineered for extreme chemical resistance and thermal stability. Our customizable industrial tanks ensure contamination-free sampling and fluid handling in demanding laboratory and pharmaceutical manufacturing environments.

Learn More

Application	Description	Key Benefit
Semiconductor Etching	Storage and transport of ultra-pure hydrofluoric acid and etching blends used in wafer fabrication.	Prevents metal ion leaching and maintains electronic-grade purity.
Pharmaceutical API Synthesis	Serving as a primary reaction vessel for the synthesis of Active Pharmaceutical Ingredients involving aggressive reagents.	Ensures no cross-batch contamination and withstands high reaction temperatures.
Trace Metal Analysis	Sampling and storage of environmental or industrial samples for high-sensitivity mass spectrometry.	Lowers detection limits by eliminating background interference from the vessel material.
Specialty Chemical Mixing	Blending of volatile or highly corrosive chemical catalysts and additives in industrial settings.	Protects operators and the environment through superior containment reliability.
Food & Flavor Processing	Handling of concentrated essential oils, acids, and flavoring agents in high-volume production.	FDA-compliant material properties ensure no odor or taste transfer.
Aerospace Fuel Additives	Storage of high-energy chemical additives and oxidizers used in specialized propulsion systems.	Reliable performance under extreme temperature fluctuations and corrosive stress.
Battery Electrolyte Prep	Mixing and storage of corrosive electrolytes for lithium-ion and next-generation battery testing.	Chemical compatibility with lithium salts and organic solvents used in battery R&D.
Cryogenic Fluid Storage	Containment of samples or reagents in ultra-low temperature environments.	Remains ductile and resists cracking at temperatures where other plastics become brittle.

Parameter	Specification Details (Model PL-CP116)
Base Material	High-Purity Virgin PTFE (Polytetrafluoroethylene)
Visual Appearance	Opaque White (UV-Shielding)
Nominal Capacity	10L (Custom volumes available from 1L to 100L)
Temperature Range	-260°C to +260°C (-436°F to +500°F)
Chemical Resistance	Universal (Except molten alkali metals and elemental fluorine)
Coefficient of Friction	0.05 to 0.10 (Static and Dynamic)
Dielectric Strength	18–22 kV/mm
Tensile Strength	Customizable based on wall thickness (typically 25-35 MPa)
Elongation at Break	250% - 350%
Customization Options	CNC-machined ports, dip tubes, venting caps, and integrated valves

Application	Description	Key Benefit
Parameter	**Specification Details (Model PL-CP116)**	
Cleaning Compatibility	Autoclavable; compatible with CIP (Clean-In-Place) systems	
Standard Configuration	Heavy-duty screw cap with leak-proof sealing ring	

Ptfe Bubble Absorption Bottle For Solid Waste Gas Detection And Hydrogen Chloride Sampling

Item Number: PL-CP213

Introduction

Optimize solid waste gas monitoring with this high-purity PTFE bubble absorption bottle designed for hydrogen chloride sampling. Its chemically inert construction ensures contaminant-free results and seamless integration with membrane filter holders for high-precision environmental analysis.

Learn More

Application	Description	Key Benefit
Solid Waste Incineration	Monitoring of flue gases for hydrogen chloride and other acidic pollutants to ensure compliance with environmental regulations.	Corrosion resistance against hot, acidic gases ensures long-term equipment survival.
Hazardous Waste Analysis	Collection of volatile organic and inorganic compounds from hazardous material processing plants for chemical characterization.	Prevents cross-contamination and ensures sample purity through total chemical inertness.
Stack Emission Testing	Field sampling of industrial exhaust streams to measure the efficiency of scrubbing systems and emission control units.	Robust construction withstands the physical and chemical demands of outdoor industrial environments.
Trace Metal Analysis	Absorption of gas-phase metals and precursors where the absence of leaching from the container is vital for accuracy.	High-purity PTFE prevents the introduction of trace contaminants during the sampling process.
Pharmaceutical Synthesis	Capturing corrosive gaseous byproducts from reactor vessels during the production of complex organic intermediates.	Protects laboratory personnel and equipment while ensuring the recovery of valuable reactants.
Semiconductor Gas Monitoring	Detection of high-purity process gases and cleaning agents used in cleanroom manufacturing environments.	Maintains the extreme purity levels required for semiconductor manufacturing standards.
Acid Gas Neutralization Studies	Evaluating the performance of various neutralizing agents in a controlled laboratory bubbling setup.	Allows for precise control of gas flow and liquid contact time for repeatable experimental data.

Parameter	Specification for PL-CP213	Customization Availability
Standard Capacity	75ml (Nominal)	Custom volumes from 10ml to 5000ml available
Material	Virgin Polytetrafluoroethylene (PTFE)	PFA, Modified PTFE, or PVDF options
Operating Temperature	-200°C to +260°C	Enhanced high-temp variants on request
Sealing Mechanism	Precision-threaded cap with PTFE gasket	O-ring seals (FKM/EPDM) or tapered joints
Inlet/Outlet Ports	Customizable for 1/4", 1/8", or metric tubing	NPT, Luer Lock, or Flanged connections
Bubbler Stem Design	Straight or Fritted	Custom pore sizes for gas diffusion control
Filter Compatibility	Pairable with standard membrane filter holders	Integrated filter housings or bespoke adapters
Wall Thickness	Heavy-duty industrial grade	Reinforced or thin-walled versions for specific thermal needs
Internal Finish	< 0.1 µm Ra (Super Smooth)	Electropolished-equivalent fluoropolymer finish

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