KINTEK

Microwave Digestion Vessels & Accessories 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.

High Purity Ptfe Microwave Digestion Vessel Replacement For Gt-400 Systems Acid Reflux And Sample Preparation

Item Number: PL-CP145

Introduction

Upgrade your laboratory sample preparation with high-purity PTFE microwave digestion vessels designed as premium replacements for GT-400 systems. These customizable fluoropolymer tanks offer superior chemical resistance and thermal stability for demanding acid digestion and reflux industrial applications.

Learn More

Application	Description	Key Benefit
Environmental Analysis	Digestion of soil, sediment, and sludge samples for heavy metal quantification.	Complete dissolution of silicates using HF without vessel degradation.
Food Safety Testing	Preparation of organic matrices like grains, oils, and animal tissues for elemental analysis.	Rapid decomposition of organic matter with minimal acid volume.
Pharmaceutical Quality Control	Testing for elemental impurities in active pharmaceutical ingredients (APIs) and excipients.	Complies with strict purity standards by eliminating leaching from the vessel walls.
Petrochemical Research	Digestion of catalysts, crude oil, and lubricant additives for trace metal monitoring.	Withstands high pressure and temperature for difficult-to-dissolve hydrocarbons.
Metallurgy & Mining	Dissolution of ores, alloys, and geological samples for mineralogical assessment.	Robust performance against aggressive acid mixtures and high mineral loads.
Specialty Chemicals	Testing high-purity chemicals and polymers for trace contaminants.	Maintains ultra-low blank levels necessary for high-sensitivity detection.

Attribute	Specification for PL-CP145
Model Number	PL-CP145
Material Construction	High-Purity PTFE / Modified TFM / PFA (Optional)
Compatibility	Replacement for GT-400 Microwave Digestion Systems
Dimensional Parameters	Fully Customizable via CNC Fabrication
Working Volume	Custom per client requirements
Pressure Rating	Variable based on custom wall thickness and design
Temperature Limit	Optimized for standard microwave digestion ranges
Design Type	Bespoke Laboratory Setup / Non-standard Machined Part
Surface Finish	High-precision polished interior and exterior

15 Position Customizable Microwave Digestion Vessel Rack High Purity Ptfe Pfa Non Stick Laboratory Sample Preparation System

Item Number: PL-CP354

Introduction

Optimize laboratory throughput with this high-purity 15-position microwave digestion vessel rack. Engineered from premium non-stick fluoropolymers, our customizable solutions ensure contamination-free sample preparation for demanding trace analysis applications and high-volume industrial research workflows today.

Learn More

Application	Description	Key Benefit
Environmental Analysis	Digestion of soil, sediment, and sludge samples for heavy metal detection via ICP-MS.	Zero background interference from the rack material.
Food Safety Testing	Processing of diverse food matrices to monitor for pesticide residues and nutritional minerals.	High-throughput 15-position layout speeds up batch testing.
Pharmaceutical Research	Acid digestion of active pharmaceutical ingredients (APIs) for purity verification and quality control.	Superior chemical resistance to concentrated mineral acids.
Petrochemical Analysis	Sample preparation of oils, polymers, and catalysts for elemental composition analysis.	Maintains structural integrity in high-temperature environments.
Electronic Waste Recovery	Decomposition of PCB components and semiconductor materials to reclaim precious metals.	Durable construction survives aggressive aqua regia digestion.
Clinical Toxicology	Preparation of biological samples like blood or tissue for trace element screening.	Non-stick surfaces ensure easy decontamination between runs.
Mining and Geochemistry	High-pressure digestion of rock and ore samples for mineral exploration and assaying.	Precision fitment prevents vessel failure under high pressure.

Specification Category	Parameter Details for PL-CP354
Model Identifier	PL-CP354 Series
Configuration	15-Position Circular or Grid Layout (Customizable)
Primary Materials	High-Purity PTFE (Polytetrafluoroethylene) or PFA (Perfluoroalkoxy)
Surface Finish	Ultra-Smooth / Non-Stick Finished Surface
Chemical Compatibility	Universal Resistance (HF, HCl, HNO3, H2SO4, Aqua Regia)
Temperature Range	Operational up to 260°C (Material dependent)
Vessel Compatibility	Custom bored slots to match proprietary or standard digestion vessels
Component Inclusions	Support Rack, Integrated Vessel Slots, Optional Custom Caps/Stoppers
Fabrication Method	Full CNC Machining from solid billet stock (no molded seams)

Application	Description	Key Benefit
SpecificationCategory	**Parameter Details for PL-CP354**	
Customization Options	Slot Diameter, Pitch, Base Thickness, Handle Integration, Weight Optimization	

Customizable Graphite Digestion System Acid Removal Instrument With Corrosion Resistant Coating For Microwave Vessels

Item Number: PL-CP146

Introduction

Optimize sample preparation with our customizable graphite digestion system. Featuring advanced corrosion-resistant coatings and perfect compatibility with microwave digestion vessels, this unit ensures high-purity results for demanding trace analysis and efficient acid removal in industrial laboratory workflows.

Learn More

Application	Description	Key Benefit
Environmental Trace Metal Analysis	Digestion of soil, sediment, and wastewater samples using concentrated mineral acids for EPA-compliant testing.	High-purity processing prevents cross-contamination and ensures low detection limits.
Pharmaceutical API Testing	Pre-treatment of active pharmaceutical ingredients for heavy metal limit testing (USP <232>/<233>).	Precise temperature control prevents the loss of volatile elements like Mercury and Arsenic.
Food Safety Auditing	Acid digestion of complex food matrices (meat, dairy, grains) to analyze for toxic elements and nutritional minerals.	Uniform heating ensures complete decomposition of organic matter across all samples.
Geochemical Exploration	Large-scale dissolution of geological ores and minerals using hydrofluoric and perchloric acid mixtures.	Superior corrosion resistance handles the most aggressive acid combinations without degradation.
Semiconductor Material Purity	Ultra-trace analysis of high-purity silicon and chemicals used in wafer fabrication.	PFA-coated surfaces minimize the introduction of metallic impurities during the heating process.
Petrochemical Catalyst Recovery	Digestion of spent catalysts to determine precious metal content (Pt, Pd, Rh) for recycling purposes.	Robust construction supports high-temperature cycles required for refractory material dissolution.
Clinical Toxicology	Preparation of biological fluids (blood, urine) for toxicological screening of heavy metal exposure.	Small footprint and high throughput allow for rapid processing in high-volume clinical settings.

Feature	PL-CP146 Specification / Customization Option
Model Identifier	PL-CP146
Core Material	High-density Isostatic Graphite (High Purity Grade)
Surface Protection	Multi-layer PFA/PTFE Anti-Corrosion Coating (Teflon-grade)
Temperature Range	Ambient to 260°C (Customizable up to 400°C for specialized graphite)
Temperature Stability	±0.5°C at steady state
Temperature Uniformity	±1.0°C @ 150°C across all block positions
Control Mode	External PID Digital Controller (Remote Operation)
Heating Program	Multi-stage ramp/soak (Standard: 16 steps; Custom: Up to 64 steps)
Hole Configuration	Customizable (Standard options: 12, 24, 36, 48, 54, or 72 holes)

Application	Description	Key Benefit
Feature	**PL-CP146 Specification / Customization Option**	
Vessel Compatibility	Custom CNC-drilled holes to fit any microwave liner or digestion tube diameter	
Safety Features	Over-temperature auto-shutdown, sensor failure alarm, shielded cabling	
Power Supply	110V/220V AC, 50/60Hz (Configured per region)	
Housing Material	SUS304 Stainless Steel with epoxy or fluoropolymer coating	
Custom Options	Custom block dimensions, integrated fume hoods, and specialized PFA vessel inserts	

Corrosion Resistant Graphite Digestion System With Pid Digital Control For High Throughput Laboratory Sample Preparation

Item Number: PL-CP107

Introduction

Optimize your laboratory sample preparation with our high-purity graphite digestion system featuring precision PID control and superior acid resistance. Ideal for trace analysis, it supports various digestion vessels across 24, 54, and 72-hole configurations for maximum efficiency and safety.

Learn More

Application	Description	Key Benefit
Environmental Monitoring	Digestion of soil, sediment, and sludge samples for heavy metal analysis (Pb, Cd, Cr, Hg).	Exceptional uniformity ensures representative results across large batches.
Food & Beverage Safety	Mineralization of food matrices and agricultural products to detect trace contaminants.	High throughput handles seasonal surges in testing volume efficiently.
Geochemical Exploration	Dissolution of rock and ore samples using aqua regia or hydrofluoric acid mixtures.	Superior acid resistance allows for the use of aggressive digestion reagents.
Pharmaceutical Analysis	Preparation of active pharmaceutical ingredients (APIs) for USP <232>/<233> elemental impurity testing.	Precise PID control prevents the loss of volatile elements like Osmium or Mercury.
Microwave Pre-digestion	Pre-heating and acid-driving for microwave digestion vessels to increase microwave efficiency.	Seamlessly integrates into existing microwave digestion workflows.
Wastewater Treatment	Digestion of industrial effluent and domestic sewage for COD and total phosphorus determination.	Robust construction withstands the corrosive atmosphere of municipal labs.
Metallurgy & Materials	Acid leaching of metal alloys and advanced ceramics for composition verification.	Consistent heating rates ensure complete dissolution of complex matrices.

Feature	Specification Details (Model PL-CP107)
Model Identifier	PL-CP107 Series
Heating Block Material	High-density Isostatic Pressing Graphite
Corrosion Protection	Multi-layer PTFE/PFA Anti-Corrosion Coating
Temperature Range	Ambient to 210°C (Optional high-temp variants up to 260°C)
Temperature Stability	±0.1°C
Temperature Uniformity	±1.0°C @ 150°C
Control Mode	Split-type PID Digital Intelligence Controller
Hole Capacity Options	24 Holes / 54 Holes / 72 Holes
Standard Hole Diameter	30mm (Customizable for PFA/Microwave vessels)

Application	Description	Key Benefit
Feature	**Specification Details (Model PL-CP107)**	
Standard Hole Depth	40mm / 45mm (Customizable)	
Power Supply	220V AC, 50/60Hz	
Rated Power	1.5kW - 3.2kW (Configuration dependent)	
Safety Protection	Over-temperature alarm, sensor failure protection	
Vessel Compatibility	PFA Bottles, PTFE Tubes, Glass Digestion Tubes, Microwave Liners	

Custom Ptfe Digestion Vessel Sample Vial Straight Wall Test Tube High Temperature Low Background

Item Number: PL-CP283

Introduction

Discover high-purity custom PTFE digestion vessels and sample vials designed for ultra-trace analysis. Engineered for extreme chemical resistance and low metal backgrounds, these customizable flat or U-bottom tubes ensure reliable sample preparation in demanding laboratory and industrial environments.

Learn More

Application	Description	Key Benefit
Environmental Trace Analysis	Digestion of soil, sediment, and wastewater samples for heavy metal quantification.	Ensures zero contamination from the vessel walls, critical for regulatory compliance.
Semiconductor Grade Purity	Preparation of high-purity chemicals and silicon wafer etching solutions.	Maintains the extreme cleanliness levels required for sub-micron manufacturing processes.
Geochemical Exploration	Acid leaching of mineral ores and rock samples using concentrated hydrofluoric acid.	Resistant to HF, which would dissolve standard borosilicate or quartz laboratory glass.
Pharmaceutical R&D	Decomposition of organic compounds for elemental impurity testing (USP <232>/<233>).	Provides a non-reactive environment that prevents sample interaction with vessel materials.
Petrochemical Testing	Analysis of catalysts and crude oil fractions for nickel, vanadium, and sulfur content.	Withstands high-temperature hydrocarbon processing without leaching or structural failure.
Food Safety Testing	Microwave or block digestion of biological samples for arsenic and lead detection.	Facilitates the safe use of oxidizing acids while preserving volatile analyte concentrations.
Nuclear Industry	Handling of corrosive radioactive isotopes and specialty nuclear fuels.	Radiation resistance and chemical stability ensure safety in hazardous material processing.

Parameter	Specification Details for PL-CP283
Model Number	PL-CP283 (Bespoke Series)
Material Composition	High-Purity Virgin PTFE / PFA
Operating Temperature Range	-200°C to +260°C
Chemical Compatibility	Universal (except molten alkali metals and elemental fluorine)
Bottom Configurations	Flat Bottom, Round (U) Bottom, Conical (V) Bottom
Body Style	Straight-walled, Graduated (Optional), or Tapered
Closure Options	Screw Cap, Friction Fit, or Custom Flange
Dimensional Capacity	Fully Customizable (Inner Diameter, Outer Diameter, Total Height)
Wall Thickness	Customizable (Standard 2mm to 5mm+ available)
Surface Roughness	Ra < 0.4 µm (Standard CNC Finish)
Trace Metal Background	< 0.1 ppb for standard elements (after proper leaching protocols)

Application	Description	Key Benefit
Parameter	**Specification Details for PL-CP283**	
Fabrication Method	100% Precision CNC Machining	

Custom Graphite Digestion System And Acid Removal Unit With Anti Corrosion Coating For Microwave Digestion Vessels

Item Number: PL-CP321

Introduction

Enhance laboratory efficiency with our custom graphite digestion and acid removal system featuring premium anti-corrosion coatings. Designed for seamless integration with microwave digestion vessels, this unit ensures precise thermal uniformity for demanding trace analysis and industrial sample preparation protocols.

Learn More

Application	Description	Key Benefit
Environmental Soil Analysis	Digestion of soil and sediment samples using concentrated acids for heavy metal detection via ICP-MS.	Consistent recovery rates across large sample batches due to thermal uniformity.
Pharmaceutical Trace Metals	Sample preparation for USP <232> and <233> compliance, involving the digestion of active ingredients and excipients.	Minimized contamination risk and precise temperature control for volatile element retention.
Post-Microwave Acid Driving	Evaporation of excess HF or HNO3 from TFM/PFA microwave vessels after the primary digestion step is complete.	Eliminates the need for sample transfer, reducing labor and potential for loss.
Metallurgical Testing	Dissolution of high-purity alloys and ores using aqua regia or other aggressive mineral acids.	High-capacity heating block handles high-density samples with ease.
Food and Beverage Safety	Digestion of complex organic matrices for the analysis of arsenic, cadmium, and lead levels.	Robust anti-corrosion coating prevents damage from organic vapors and acid reflux.
Petrochemical Catalyst Recovery	Digestion of spent catalysts to quantify precious metal loading and impurity profiles.	Durable construction withstands 24/7 operation in industrial testing facilities.
Water Quality Monitoring	Large-volume digestion of wastewater and industrial effluent for environmental regulatory reporting.	Scalable hole configurations allow for high-throughput processing of standard tubes.
Geochemical Exploration	Decomposition of rock powders and mineral samples for rare earth element (REE) quantification.	Specialized block designs accommodate custom-sized digestion flasks and crucibles.

Feature	Specification Details for PL-CP321 Series
Model Identifier	PL-CP321 (Base Configuration)
Core Material	High-Purity Isostatic Graphite (Thermal Core)
Surface Protection	Custom Anti-Corrosion Fluoropolymer Coating (PTFE/PFA Blend)
Temperature Range	Fully Customizable (Defined by Customer Application Requirements)
Hole Configuration	Bespoke (Custom Diameter, Depth, and Array Pattern to match vessels)
Vessel Compatibility	Optimized for Microwave Digestion Vessels, PFA Tubes, and Quartz Flasks
Control System	Remote or Integrated PID Digital Controller (Specified at order)
Heating Uniformity	Industry-Leading Tolerance (Varies based on custom block dimensions)
Power Supply	Configurable for 110V/220V AC based on regional industrial standards

Application	Description	Key Benefit
Feature	**Specification Details for PL-CP321 Series**	
Safety Features	Over-temperature Cut-off, Insulated Housing, Acid-Resistant Seals	
Customization Level	100% Tailored (Dimensions, Hole Count, and Thermal Specs)	

Corrosion Resistant Ptfe Digestion Tubes For Graphite Digestion Systems With Reflux Caps And Customizable Dimensions

Item Number: PL-CP128

Introduction

High-performance corrosion resistant PTFE digestion tubes for graphite block systems feature acid reflux caps and superior chemical inertness. Fully customizable dimensions ensure seamless integration with existing laboratory equipment for precise trace metal analysis and demanding sample preparation workflows.

Learn More

Application	Description	Key Benefit
Environmental Analysis	Digestion of soil, sediment, and sludge samples for heavy metal detection and monitoring.	Ultra-low blank values for accurate trace detection.
Geochemical Exploration	Dissolution of mineral ores and rock samples using concentrated hydrofluoric and nitric acids.	Complete resistance to HF and extreme mineral acids.
Food & Agriculture	Sample preparation of organic matter for nutrient profiling and toxin analysis via ICP-MS.	Non-stick surface prevents sample loss and cross-contamination.
Pharmaceutical Testing	Digestion of active pharmaceutical ingredients (APIs) and excipients for catalyst residue testing.	Guaranteed zero leaching of metallic or organic impurities.
Petrochemical Quality	Analysis of polymers, crude oils, and lubricants for trace elemental impurities.	Robust performance in high-temperature organic digestion.
Metallurgy	High-temperature dissolution of alloys and specialty metals for compositional verification.	Long-term durability against aggressive reagents at heat.
Cleanroom Trace Analysis	Preparation of semiconductor materials and high-purity chemicals in ISO-rated environments.	High-purity PFA/PTFE grades ensure analytical precision.

Specification Category	Parameter Details (PL-CP128 Series)
Base Material	High-Purity PTFE (Polytetrafluoroethylene) / PFA optional
Manufacturing Process	End-to-end precision CNC machining from solid fluoropolymer stock
Tube Diameter	Customizable to match any graphite block well diameter (e.g., 30mm, 50mm, etc.)
Tube Height	Customizable according to sample volume and block depth requirements
Wall Thickness	Engineered for optimal thermal transfer and mechanical strength (Customizable)
Cap Configuration	Reflux cap, flat seal cap, or acid removal (vented) cap available
Temperature Range	Continuous service up to 260°C (PTFE)
Chemical Resistance	Universal resistance to almost all acids, bases, and organic solvents
Cleaning Protocol	Compatible with acid boiling, ultrasonic cleaning, and automated washers
Custom Features	Graduation marks, specialized threading, or unique base geometries available

High Pressure Ptfe Digestion Vessel Inner Cup Holder Custom Corrosion Resistant Low Background Teflon

Item Number: PL-CP262

Introduction

Optimize trace analysis with custom PTFE high pressure digestion vessel cup holders. These corrosion resistant low background laboratory components provide exceptional chemical purity and precision fit for demanding sample preparation in metal free environments and high purity industrial laboratory workflows.

Learn More

Application	Description	Key Benefit
Environmental Trace Metal Analysis	Digestion of soil, sediment, and wastewater samples using concentrated nitric or hydrofluoric acid.	Ensures no heavy metal contamination from the holder, providing accurate results at PPT levels.
Geochemical Sample Preparation	Decomposition of silicate-based ores and rock samples using high-pressure hydrothermal methods.	Resists the aggressive nature of mineral acids while maintaining structural integrity under heat.
Semiconductor High-Purity Testing	Analysis of photoresists, wafers, and processing chemicals for ultra-trace elemental impurities.	Provides the metal-free environment required to prevent interference with sensitive semiconductor metrics.
Pharmaceutical Quality Control	Digestion of active pharmaceutical ingredients (APIs) and excipients according to USP <232>/<233> guidelines.	Guarantees compliance with strict purity standards and ensures reliable repeatability in regulated workflows.
Metallurgical Research	Dissolution of alloy samples and specialty metals for detailed elemental composition characterization.	Maintains a stable environment for complex acid mixtures that would corrode stainless steel or glass components.
Food Safety Testing	Processing of agricultural products and food samples to monitor for toxic heavy metals like lead, arsenic, and cadmium.	Facilitates complete digestion while preventing cross-sample contamination in high-throughput labs.

Attribute	Specification Detail for PL-CP262
Product Item Number	PL-CP262
Base Material	Ultra-High Purity Virgin PTFE (Teflon)
Manufacturing Process	Precision Custom CNC Machining
Internal Capacity Support	Optimized for 50ml Inner Cups (Customizable)
Surface Finish	High-Grade Smooth Machined (Ra < 0.8µm)
Operating Temperature Range	-200°C to +260°C (Application dependent)
Chemical Resistance	Universal (Except molten alkali metals, gaseous fluorine)
Background Interference	Ultra-low blank values for trace metal analysis
Customization Scope	Dimensions, wall thickness, base geometry, and venting features
Compliance	Material grades meet FDA and high-purity industrial standards

Custom Ptfe Microwave Digestion Vessels For Demanding Applications

Item Number: PL-1003

Introduction

High-purity PTFE microwave digestion vessels for safe, contamination-free sample prep. Ideal for ICP-MS, AAS, and trace analysis. Custom sizes available.

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Product Specification	Inner Mouth Diameter (mm)	Body Diameter (mm)	Height with Lid (mm)
PTFE Digestion Vessel 30ml	25	42	105
PTFE Digestion Vessel 50ml	29	47	110
PTFE Digestion Vessel 100ml	50	62	143
PTFE Digestion Vessel 200ml	53	69	163

Custom High Purity Tfm Microwave Digestion Vessel 100Ml For Analytical Laboratory Sample Preparation

Item Number: PL-CP367

Introduction

Premium 100ml TFM microwave digestion vessels designed for extreme chemical resistance and high pressure applications. These custom engineered laboratory components offer seamless compatibility with specialized digestion systems to ensure consistent sample preparation results in demanding analytical chemistry environments.

Learn More

Application	Description	Key Benefit
Environmental Trace Analysis	Digestion of soil, sediment, and wastewater samples for ICP-MS analysis.	Lowest trace metal background for accurate ppb/ppt detection.
Pharmaceutical Quality Control	Preparation of active pharmaceutical ingredients (APIs) for heavy metal testing.	Compliance with strict regulatory standards for purity and recovery.
Metallurgical & Mining	Dissolution of mineral ores, concentrates, and alloy samples in concentrated acids.	Resilience against aggressive acid mixtures and high temperatures.
Food Safety Testing	Decomposition of organic food matrices to monitor for contaminants like Arsenic or Lead.	Total mineralization of fats and proteins for clear analytical solutions.
Petrochemical Analysis	Digestion of polymers, lubricants, and crude oil samples for catalyst residue testing.	High pressure resistance for the breakdown of long-chain hydrocarbons.
Forensic Science	Precise preparation of small, sensitive evidence samples for toxicology screens.	High recovery rates and protection against cross-contamination.
Battery Material Research	Dissolution of cathode and anode materials for stoichiometric verification.	Durable performance in high-cycle testing environments.

Parameter	Detail
Product Item Number	PL-CP367
Material	TFM (Modified Polytetrafluoroethylene)
Nominal Volume	100ml
Design Type	Fully Customizable / Bespoke Design
Manufacturing Process	Precision CNC Machining
Compatibility	Engineered to adapt to XT-MUI type microwave systems
Chemical Resistance	Full resistance to HNO3, HCl, HF, H2SO4, H2O2
Max. Temperature	Dependent on custom configuration (Typical TFM limits apply)
Surface Finish	High-precision polished internal and external surfaces
Closure System	Customizable cap and seal interface options
Trace Metal Purity	High-purity grade for ultra-trace analysis

Custom Graphite Heating Plate With Ptfe Edging And Bench Protection For Corrosive Acid Digestion

Item Number: PL-CP110

Introduction

Precision-engineered custom graphite heating plate featuring protective PTFE edging for superior corrosion resistance and thermal insulation. Optimized for acid digestion and trace analysis, this system ensures reliable performance in harsh laboratory environments while protecting delicate work surfaces.

Learn More

Application	Description	Key Benefit
Environmental Soil Analysis	Large-scale digestion of soil and sediment samples using concentrated nitric and perchloric acids.	Resistant to corrosive fumes and provides uniform heating for hundreds of samples simultaneously.
Trace Metal Detection	Heating PFA and PTFE vessels for ICP-MS sample preparation where contamination must be zero.	High-purity materials prevent cross-contamination and ensure analytical accuracy.
Geochemical Prospection	Processing of ore and rock samples in harsh field laboratory conditions involving hydrofluoric acid.	PTFE edging prevents acid damage to the graphite core, extending equipment life in remote sites.
Food Safety Testing	Wet digestion of organic matrices for the detection of heavy metals like Lead, Cadmium, and Mercury.	Consistent thermal distribution ensures complete digestion of complex organic matter.
Semiconductor Cleaning	Heating high-purity chemical baths for wafer cleaning and etching processes.	Exceptional chemical inertness ensures the process remains free of metallic ions.
Pharmaceutical Quality Control	Evaporation and concentration of volatile solvents during active ingredient testing.	Precise temperature control prevents the degradation of heat-sensitive pharmaceutical compounds.
Metallurgical Research	Acid leaching and dissolution of alloy samples for elemental composition verification.	Robust surface handles heavy vessels and maintains stability under high-temperature loads.

Feature	Specification Details (Model: PL-CP110)
Base Material	High-Purity Isostatic Graphite
Protective Edge Material	Laboratory-Grade PTFE (Polytetrafluoroethylene)
Temperature Range	Custom Configurable (Typical up to 250°C with PTFE protection)
Heating Surface Dimensions	Fully Customizable via CNC (Up to 600mm x 400mm or larger)
Edge Height/Thickness	Custom specified to match vessel requirements
Temperature Uniformity	±1% to ±3% across the entire surface (depending on dimensions)
Control System	External Digital PID Controller with Thermocouple Feedback
Insulation Layer	High-temperature ceramic fiber or PTFE-coated composite
Voltage Options	110V / 220V / 380V (Single or Three Phase)
Power Rating	Scalable based on surface area and ramp rate requirements
Compatible Labware	PTFE Beakers, PFA Tubes, Glassware, TFM Digestion Tanks

Application	Description	Key Benefit
Feature	**Specification Details (Model: PL-CP110)**	
Bench Protection	Integrated Heat-Insulating Base Support	

High Temperature Resistant Tfm Microwave Digestion Vessel Lids For Trace Analysis And Acid Evaporation Systems

Item Number: PL-CP140

Introduction

Upgrade your laboratory sample preparation with high-purity TFM microwave digestion vessel lids. These customizable components ensure leak-free performance and compatibility with advanced acid evaporation systems, delivering precise results for demanding trace elemental analysis across industrial research applications today.

Learn More

Application	Description	Key Benefit
Environmental Soil Analysis	Digestion of complex soil and sediment samples using concentrated acids for heavy metal quantification.	Ensures complete recovery of volatile analytes while resisting abrasive particulates.
Pharmaceutical Quality Control	Preparation of active pharmaceutical ingredients (APIs) and excipients for elemental impurity testing per USP <232>/<233>.	Ultra-low blank values prevent false positives in sensitive trace metal screening.
Petrochemical Refining	Digestion of crude oil, lubricants, and polymers to monitor catalyst residues and contaminants.	Exceptional resistance to high-temperature hydrocarbon reactions and aggressive acid mixtures.
Food and Beverage Safety	Digesting organic food matrices to detect toxic elements like Arsenic, Lead, and Cadmium.	Minimizes cross-contamination between batches through high-purity, easy-clean surfaces.
Geochemical Exploration	Dissolution of rock and mineral ores for precious metal assaying and rare earth element analysis.	Maintains structural seal integrity during prolonged high-temperature digestion cycles.
Semiconductor Materials	Trace analysis of high-purity chemicals and silicon wafers used in microelectronics manufacturing.	Prevents metallic contamination at the parts-per-trillion (PPT) level through fluoropolymer purity.
Clinical Research	Digestion of biological tissues and fluids for toxicological studies and nutrient monitoring.	Bio-inert material prevents sample interaction, ensuring accurate physiological data.

Feature	Specification Detail for PL-CP140
Product Item Number	PL-CP140
Material Composition	High-Purity TFM (Modified PTFE)
Compatibility	GT-400 Series and Standard Microwave Digestion Vessels
Application Compatibility	Compatible with Acid Evaporation and Acid-Driving Systems
Temperature Resistance	Optimized for High-Temperature Digestion Processes (Customizable)
Pressure Rating	Designed for High-Pressure Closed-Vessel Environments (Customizable)
Chemical Resistance	Full Resistance to HF, HNO3, HCl, H2SO4, and Aqua Regia
Manufacturing Process	Precision Isostatic Molding and CNC Machining
Dimensions	Custom Engineered to Client Vessel Specifications

Application	Description	Key Benefit
Feature	**Specification Detail for PL-CP140**	
Customization Options	Available for bespoke vessel sizes, venting styles, and thread patterns	
Surface Finish	High-Smoothness Finish to Minimize Sample Adhesion	

Custom Tfm Microwave Digestion Vessels For Icp-Oes Analysis High Purity Fluoropolymer Sample Preparation Labware

Item Number: PL-CP371

Introduction

High-purity TFM microwave digestion vessels designed for ICP-OES analysis offer superior chemical resistance and thermal stability. These custom-engineered vessels ensure complete sample mineralization while preventing volatile loss and environmental contamination in demanding laboratory trace analysis applications.

Learn More

Application	Description	Key Benefit
Environmental Soil Analysis	Digesting soil and sediment samples with concentrated acids to quantify heavy metal concentrations.	Prevents loss of volatile elements like mercury or arsenic during high-pressure heating.
Pharmaceutical Quality Control	Mineralization of active pharmaceutical ingredients (APIs) and excipients for catalyst residue testing.	High-purity TFM ensures no trace metal contamination from the vessel itself.
Metallurgical Testing	Dissolving refractory ores and alloy samples for elemental composition verification via ICP-OES.	Resists aggressive acid mixtures like HF that would degrade glass or lower-grade plastics.
Food Safety Screening	Decomposition of complex food matrices to test for nutrients like calcium, zinc, and iron or toxic contaminants.	Rapid mineralization leads to higher sample throughput and consistent analytical results.
Petrochemical Analysis	Sample preparation of lubricants and crude oil derivatives to detect wear metals and additive concentrations.	Handles the high temperatures needed to break down long-chain hydrocarbon structures safely.
Battery Material Research	Digestion of cathode materials and electrolytes to verify chemical purity and stoichiometric ratios.	Precision customization allows for smaller or larger volumes tailored to specific research needs.

Specification Category	Parameter Details	PL-CP371 Capabilities
Material Composition	Primary Material	High-Purity TFM (Modified PTFE)
Material Composition	Surface Finish	Ra ≤ 0.1 µm (CNC Polished)
Customization Range	Vessel Volumes	Fully Customizable (e.g., 25mL, 50mL, 100mL, or Bespoke)
Customization Range	Pressure Ratings	Custom Engineered per Application Requirements
Customization Range	Dimensions (OD/ID/Height)	Precision CNC Machined to Specific Tolerances
Compatibility	Analytical Compatibility	Optimized for ICP-OES, ICP-MS, and AAS
Compatibility	Instrument Adaptability	Compatible with Leading Microwave Digestion Systems
Performance Metrics	Chemical Resistance	Universal (including HF, HNO3, HCl, H2SO4)
Performance Metrics	Operational Temp Range	Customizable up to 260°C (Material Dependent)
Performance Metrics	Porosity Level	Ultra-Low / Non-Porous Surface

Custom 100Ml Ptfe Digestion Tube For Heavy Metal Trace Analysis And High Temperature Acid Digestion

Item Number: PL-CP351

Introduction

High-performance 100ml PTFE digestion tubes designed for heavy metal analysis. Featuring superior acid resistance and a non-stick smooth surface, these customizable vessels ensure maximum sample recovery and zero contamination for critical laboratory workflows and complex chemical digestion.

Learn More

Application	Description	Key Benefit
Environmental Monitoring	Digestion of soil, sediment, and wastewater samples for trace metal detection via ICP-MS.	Zero leaching ensures accurate ppb-level environmental reporting.
Food Safety Testing	Preparation of agricultural and food products for arsenic and mercury analysis.	Non-stick surface prevents sample loss of oily or complex food matrices.
Metallurgical Analysis	Dissolution of high-purity metal alloys and ores using aggressive mineral acids.	Resistant to hydrofluoric acid which would dissolve standard glassware.
Pharmaceutical Quality Control	Testing of active pharmaceutical ingredients (APIs) for heavy metal impurities according to USP standards.	High purity material prevents false positive results in sensitive assays.
Petrochemical Research	Analysis of catalyst residues and trace impurities in crude oil and refined products.	Withstands the high temperatures required for breaking down organic compounds.
Geochemical Exploration	Large-scale digestion of rock and mineral samples for rare earth element (REE) quantification.	Precision CNC fabrication ensures uniformity across high-volume sample batches.
Hydrothermal Synthesis	Small-scale reaction vessel for the synthesis of advanced nanomaterials.	Excellent thermal insulation and chemical stability for consistent crystal growth.

Parameter	Specification Details for PL-CP351
Model Identifier	PL-CP351
Material Construction	High-Purity Polytetrafluoroethylene (PTFE)
Nominal Capacity	100ml (Standard) / Fully Customizable Sizes Available
Operating Temperature Range	-200°C to +260°C
Chemical Resistance	Resistant to all strong acids (HF, HNO3, HCl, H2SO4), alkalis, and organic solvents
Internal Surface Finish	Mirror-smooth CNC polished; non-adsorbing and non-stick
Contamination Profile	Certified low heavy metal leaching for trace analysis (As, Pb, Cd, Hg)
Fabrication Method	End-to-end custom CNC machining for precise tolerances
Customization Options	Height, Diameter, Wall Thickness, Flange Style, and Cap Integration
Cleaning Method	Autoclavable; compatible with acid soaking and ultrasonic cleaning

Corrosion Resistant Ptfe Digestion Bottle Solid Liquid Reaction Vessel High Purity Trace Analysis Mineral Labware

Item Number: PL-CP366

Introduction

Optimize geological trace analysis with our corrosion-resistant PTFE digestion bottles. Engineered for solid-liquid reactions without leaching, these high-purity vessels ensure sample integrity in demanding mineral research and industrial laboratory environments. Request a custom quote today for specific requirements.

Learn More

Application	Description	Key Benefit
Geochemical Trace Analysis	Dissolution of mineral ores and rock samples using concentrated hydrofluoric and nitric acids for element quantification.	Eliminates silica interference and trace metal contamination from the vessel itself.
Rare Earth Element Refining	High-temperature solid-liquid reactions used in the purification and separation of rare earth oxides and salts.	Maintains purity levels required for high-tech industrial applications and research.
Environmental Soil Digestions	Preparation of soil and sediment samples for heavy metal analysis in compliance with regulatory standards (e.g., EPA methods).	Ensures absolute sample integrity and consistency across high-volume testing batches.
Nuclear Material Processing	Handling and reacting radioactive isotopes or corrosive uranium derivatives in controlled laboratory settings.	Superior radiation resistance compared to standard polymers and total chemical containment.
Semiconductor Grade Cleaning	Storage and reaction of ultra-pure chemicals used in the wafer fabrication and etching processes.	Prevents ionic migration that could lead to microchip failure or batch contamination.
Pharmaceutical Synthesis	Small-scale synthesis of active pharmaceutical ingredients (APIs) involving aggressive catalysts or corrosive intermediates.	Non-reactive surface ensures no pharmaceutical impurities are introduced during the reaction.
Hydrothermal Synthesis	Low-pressure hydrothermal reactions where temperature stability and chemical resistance are required simultaneously.	Reliability under sustained thermal stress without mechanical deformation or leaking.

Specification Parameter	Details for Product Item PL-CP366
Material Construction	100% High-Purity Virgin PTFE (Polytetrafluoroethylene)
Model Reference	PL-CP366 Series
Volume Options	50ml, 100ml (Standard); Fully Customizable Capacities Available
Temperature Range	-200°C to +260°C (-328°F to +500°F)
Chemical Compatibility	Universal Resistance (except molten alkali metals and elemental fluorine)
Wall Thickness	Standard Heavy-Wall (Customizable per application requirements)
Sealing Mechanism	Precision-Threaded PTFE Screw Cap (Integrated Seal Design)
Internal Finish	< 0.5 µm Ra (Ultra-Smooth CNC Polished)
Leaching Profile	Non-detectable levels of trace metals and organics
Manufacturing Process	Isostatic Compression followed by precision CNC Machining

Application	Description	Key Benefit
Specification Parameter	**Details for Product Item PL-CP366**	
Customization Capability	Full bespoke fabrication based on technical drawings or specific requirements	

High Performance Tfm Microwave Digestion Vessel Rack 15 Position Customizable Sample Preparation Support

Item Number: PL-CP353

Introduction

Optimize laboratory throughput with this custom TFM microwave digestion vessel rack designed for high pressure sample preparation featuring superior chemical resistance and thermal stability for precise trace analysis across demanding industrial and research workflows.

Learn More

Application	Description	Key Benefit
Environmental Soil Analysis	Digestion of soil and sediment samples using concentrated acids for heavy metal detection.	High recovery of volatile elements like Mercury and Lead.
Pharmaceutical Testing	Preparation of Active Pharmaceutical Ingredients (APIs) for elemental impurity testing per USP guidelines.	Eliminates risk of contamination from the vessel support system.
Food Safety Screening	Mineralization of complex food matrices to detect toxic metals and nutritional minerals.	High-throughput processing for large-volume batch testing.
Petrochemical Analysis	Decomposition of heavy oils and catalysts to determine trace metal content.	Withstands the high pressures of organic sample digestion.
Geological Surveying	Digestion of mineral ores and rock samples for rare earth element quantification.	Exceptional resistance to Hydrofluoric acid mixtures.
Polymer Material Testing	Breaking down plastic and rubber samples for additive and contaminant analysis.	Maintains structural integrity under prolonged heating.
Clinical Bio-analysis	Processing of blood or tissue samples for toxicological studies and trace element research.	Ensures sample purity for high-sensitivity ICP-MS detection.

Feature	Specification Details (Model: PL-CP353)
Material Composition	Premium TFM (Modified Polytetrafluoroethylene)
Configuration	15-Position High-Throughput Layout
Fabrication Method	Precision Custom CNC Machining
Chemical Compatibility	Universal resistance to strong acids, bases, and organic solvents
Operating Temperature Range	Customizable based on specific digestion protocol requirements
Pressure Rating	Engineered to support high-pressure vessel operations
Dimensions	Fully customizable to match original microwave cavity dimensions
Surface Finish	High-purity polished finish for minimal adsorption
Compatibility	Custom matched to fit original manufacturer digestion vessels

High Purity Ptfe Digestion Tubes For Microwave Systems Soil And Food Trace Analysis Acid Resistant Customizable

Item Number: PL-CP133

Introduction

Discover high-purity PTFE digestion tubes designed for advanced microwave systems. Engineered for soil and food trace analysis, these acid-resistant vessels ensure zero contamination and superior durability. Fully customizable to meet your specific laboratory requirements for demanding chemical applications.

Learn More

Application	Description	Key Benefit
Soil Heavy Metal Analysis	Digestion of soil and sediment samples using concentrated nitric and hydrofluoric acid for ICP-MS testing.	Complete matrix decomposition and zero trace metal leaching.
Food Safety Testing	Preparation of organic food samples to detect contaminants like Lead, Arsenic, and Cadmium in high-throughput rotors.	Microwave transparency ensures rapid and even sample processing.
Pharmaceutical Purity	Digestion of active pharmaceutical ingredients (APIs) to monitor residual catalyst metals.	High-pressure retention prevents the loss of volatile analytes.
Environmental Monitoring	Large-scale processing of wastewater and sludge samples for regulatory compliance testing.	Compatibility with 44-position systems increases lab throughput.
Geological Prospecting	Decomposition of ore and mineral samples requiring aggressive acid mixtures for mineralogical assay.	Exceptional resistance to HF and other highly corrosive mineral acids.
Petrochemical Analysis	Sample preparation of heavy oils and lubricants to determine wear metal concentrations.	Robust thermal stability handles high-temperature hydrocarbon digestion.
Forensic Science	Trace analysis of biological or physical evidence where sample quantity is limited and purity is paramount.	Non-adsorptive walls ensure maximum recovery of minute trace elements.

Feature	Specification Details for PL-CP133
Model Identifier	PL-CP133
Material Construction	High-Purity Virgin PTFE / PFA (Customizable)
Microwave Compatibility	Fully Microwave-Transparent for Volumetric Heating
Dimensions & Capacity	Custom Engineered to Client Specifications
Pressure Rating	Variable / Custom Designed for High-Pressure Safety Requirements
Temperature Range	Designed for Constant High-Temperature Operation (Custom Specified)
Vessel Geometry	Customized to fit 44-position or bespoke digestion rotors
Sealing Mechanism	Precision Machined Threading / Flange (Customizable)
Chemical Resistance	Full resistance to HF, HNO3, HCl, H2O2, and Aqua Regia

Application	Description	Key Benefit
Feature	**Specification Details for PL-CP133**	
Surface Finish	Ultra-smooth CNC machined internal walls (Low Surface Energy)	
Fabrication Method	End-to-end custom CNC machining for non-standard parts	

High Performance Ptfe Microwave Digestion Vessel Replacement Bespoke Fluoropolymer Acid Digestion Tank Intelligent Sample Preparation Labware

Item Number: PL-CP132

Introduction

Optimize your trace analysis with high-purity PTFE microwave digestion vessels. Engineered for extreme chemical resistance and high-pressure reliability, our bespoke fluoropolymer solutions ensure zero contamination for demanding acid digestion, intelligent sample preparation, and high-performance analytical lab processes.

Learn More

Application	Description	Key Benefit
Environmental Trace Analysis	Digestion of soil, sediment, and wastewater samples for heavy metal detection via ICP-MS.	Zero leaching of trace contaminants ensures accurate detection limits for regulated pollutants.
Pharmaceutical Quality Control	Preparation of Active Pharmaceutical Ingredients (APIs) and excipients for elemental impurity testing.	High purity materials prevent interference with sensitive pharmaceutical assays.
Food Safety Testing	Decomposition of organic food matrices to monitor for contaminants like arsenic, cadmium, and lead.	Superior sealing prevents the loss of volatile analytes during rapid heating cycles.
Geochemical Exploration	Digestion of rock, ore, and mineral samples using aggressive acid mixtures including hydrofluoric acid.	Resistant to HF and high-pressure mineral decomposition without structural failure.
Petrochemical Analysis	Sample preparation of catalysts, polymers, and crude oil fractions for metallic residue analysis.	Chemical resistance to organic solvents and concentrated sulfuric acid mixtures.
Clinical Research	Digestion of biological tissues, blood, and bone samples for toxicology and metabolic studies.	Easy-to-clean surfaces reduce carry-over between diverse biological samples.
Advanced Materials Science	Synthesis and decomposition of novel nanomaterials and ceramic precursors under hydrothermal conditions.	Withstands the combination of high temperature and pressure required for hydrothermal reactions.

Parameter Group	Specification Detail	Product Item Number: PL-CP132
Material Construction	High-Purity PTFE / Modified TFM / PFA	Custom / Bespoke Specifications
Compatibility	Replacement for Major Microwave System Brands	Custom / Bespoke Specifications
Temperature Limit	Optimized for Microwave-Assisted Digestion	Custom / Bespoke Specifications
Pressure Rating	High-Pressure Safety Design	Custom / Bespoke Specifications
Vessel Capacity	Various Internal Volumes Available	Custom / Bespoke Specifications
Machining Precision	End-to-End CNC Fabrication	Custom / Bespoke Specifications
Surface Finish	Ra ≤ 0.4μm (Ultra-Smooth)	Custom / Bespoke Specifications
Chemical Resistance	Full range (HNO3, HCl, HF, H2O2, etc.)	Custom / Bespoke Specifications
Seal Type	Self-Sealing or Mechanical Gasket Systems	Custom / Bespoke Specifications

High Purity Ptfe Microwave Digestion Vessels For 44 Position Systems Trace Analysis Acid Digestion And Evaporation

Item Number: PL-CP307

Introduction

High-performance PTFE microwave digestion tubes designed for 44-position systems. These ultra-pure fluoropolymer vessels ensure zero contamination during trace analysis, acid digestion, and evaporation processes, expertly engineered for durability and precise fit in advanced laboratory microwave instruments.

Learn More

Application	Description	Key Benefit
Environmental Soil Analysis	Digesting complex soil and sediment matrices for heavy metal detection using EPA-compliant methods.	Ensures complete dissolution of refractory minerals without contamination.
Pharmaceutical Trace Metal Testing	Preparing active pharmaceutical ingredients (APIs) and excipients for elemental impurity testing (USP <232>/<233>).	Ultra-low blank values for reliable compliance with international pharmacopeia standards.
Food & Beverage Safety	Dissolving food samples to analyze for toxic elements like Lead, Arsenic, and Cadmium.	High-throughput 44-position compatibility maximizes lab productivity.
Geological & Mining Exploration	Digesting ore and mineral samples with hydrofluoric acid combinations for mineralogical assay.	Exceptional resistance to HF and high-temperature mineral acids.
Petrochemical Catalyst Recovery	Processing spent catalysts and petroleum products to quantify precious metal content.	Robust construction survives the high temperatures needed for oil-based matrices.
Clinical & Biological Research	Digestion of blood, hair, or tissue samples for forensic or nutritional trace element studies.	Minimizes sample loss and prevents carryover between sensitive biological runs.
Acid Removal (Evaporation)	Evaporating excess acid after digestion to prepare samples for final dilution and analysis.	Optimized vessel neck design promotes efficient vapor removal.

Feature	Specification Detail for PL-CP307
Product Identifier	PL-CP307 Series (44-Position Compatible)
Base Material	High-Purity Virgin PTFE / Modified TFM / PFA
Manufacturing Method	High-Precision CNC Machining
Vessel Capacity	**Customizable** (Tailored to specific volume requirements)
Dimensions (OD/Height)	**Customizable** (Built to match instrument manufacturer specs)
Wall Thickness	**Customizable** (Reinforced for high-pressure applications)
Compatibility	44-Position Microwave Digestion Systems / Heating Blocks
Operating Temperature	Up to 260°C (Material dependent)
Chemical Resistance	Universal resistance to all common laboratory acids and solvents
Surface Finish	Ultra-smooth, low-porosity interior
Customization Options	Bespoke heights, diameters, and cap configurations available

High Purity Tfm Microwave Digestion Vessels For Trace Analysis And Custom Sample Preparation Systems

Item Number: PL-CP370

Introduction

Premium TFM microwave digestion vessels designed for high-pressure sample preparation. These customizable fluoropolymer liners ensure superior chemical resistance and thermal stability for trace metal analysis across diverse industrial laboratory applications.

Learn More

Application	Description	Key Benefit
Environmental Soil Analysis	Digestion of complex soil and sediment matrices for heavy metal quantification via ICP-MS.	Complete recovery of volatile elements with zero leaching from the vessel walls.
Pharmaceutical Quality Control	Preparation of active pharmaceutical ingredients (APIs) for USP <232>/<233> elemental impurity testing.	High-purity TFM ensures compliance with strict regulatory detection limits.
Geochemical Exploration	Dissolution of mineral ores and metallurgical samples using aggressive acid mixtures including HF.	Exceptional resistance to hydrofluoric acid at high temperatures and pressures.
Food Safety Testing	Breakdown of fat-rich and complex organic food products for nutritional and contaminant analysis.	Robust pressure handling for samples that produce high volumes of gaseous byproducts.
Petrochemical Analysis	Digestion of catalysts, polymers, and crude oil derivatives for trace element monitoring.	Structural integrity is maintained even when exposed to high-energy organic reactions.
Clinical Research	Preparation of biological tissues and fluids for toxicological and metabolic studies.	Ultra-smooth surfaces prevent biological residue buildup and cross-contamination.
Electronic Material Testing	Purity verification of semiconductor-grade chemicals and high-tech ceramic materials.	Minimal background interference for ultra-trace level analysis of rare elements.

Specification Category	Parameter Details (Model PL-CP370)	Customization Options
Base Material	High-Purity Imported TFM (Modified PTFE)	Available in PTFE, PFA, or Glassy Carbon upon request
Compatible Instrumentation	Designed for XT-MUI / XT9906 Series	Bespoke dimensions for any domestic or imported system
Vessel Capacity	Fully Customizable Volume per Vessel	Standard and extended volume options available
Rotor Configuration	Compatible with 8, 10, and 12-position systems	Custom spacing and alignment for proprietary rotors
Pressure Rating	Designed for High-Pressure Digestions	Specific wall thickness optimization for high-load cycles
Temperature Range	Operational up to 260°C (Application dependent)	Enhanced thermal stabilizers available for specialty use
Manufacturing Process	5-Axis CNC Precision Machining	Custom engravings and serialization for tracking
Compliance	Trace Analysis Grade (Low Blank Values)	Certificates of material purity available per batch
Part Number	**PL-CP370**	Unique codes assigned to bespoke designs

High Purity Ptfe Microwave Digestion Vessel Replacement Liner For Acid Sample Preparation And Trace Analysis

Item Number: PL-CP306

Introduction

Premium PTFE microwave digestion vessels designed for extreme acid resistance and high-pressure performance. Engineered for trace analysis and sample preparation in industrial laboratories, these customizable liners provide superior durability and chemical inertness.

Learn More

Application	Description	Key Benefit
Environmental Monitoring	Digestion of soil, sediment, and wastewater samples for heavy metal detection.	Ensures zero contamination from the vessel, vital for sub-ppb level detection.
Pharmaceutical Quality Control	Preparation of active pharmaceutical ingredients (APIs) and excipients for elemental impurity testing.	High chemical resistance to organic solvents and concentrated acids used in USP protocols.
Food and Beverage Safety	Digestion of organic matrices such as grains, meats, and dairy for nutritional and safety analysis.	Rapid processing of complex organic matter without sample loss or carryover.
Petrochemical Analysis	Decomposition of heavy crude oils, catalysts, and lubricants to analyze trace sulfur and metals.	Exceptional performance at high temperatures required to break down long-chain hydrocarbons.
Materials Science	Dissolution of advanced ceramics, specialty alloys, and polymers for composition verification.	Capability to withstand hydrofluoric acid and other aggressive digestion reagents.
Geochemical Exploration	Processing of rock samples and mineral ores for mineralogical assessment.	Durability against abrasive samples and high-pressure digestion of crystalline structures.
Clinical Research	Digestion of biological tissues and fluids for toxicological studies and trace element analysis.	Ultra-low background levels ensure accurate measurement of endogenous trace elements.

Feature	Specification Details (Model: PL-CP306)
Base Material	High-Purity Virgin PTFE / TFM
Manufacturing Process	Precision End-to-End Custom CNC Machining
Dimensions	Fully Customizable to Client Specifications
Volume Capacity	Bespoke sizing available (Standard and non-standard volumes)
Operating Temperature Range	Up to 260°C (Process dependent)
Pressure Rating	Designed for high-pressure microwave environments (Customizable)
Chemical Compatibility	Universal resistance (HF, HCl, HNO3, H2SO4, etc.)
Surface Finish	High-gloss, low-porosity machined finish
Closure Type	Threaded, snap-fit, or flange-style (Customizable)
Replacement Compatibility	Optimized as a direct replacement for major instrument brands

High Purity Laboratory Microwave Digestion Vessel Customizable Pfa Ptfe Digestion Tank For Analytical Sample Preparation Trace Metal Analysis

Item Number: PL-CP182

Introduction

Professional PTFE and PFA microwave digestion vessels for high-precision trace analysis. These customizable digestion tanks provide exceptional chemical resistance and thermal stability for industrial laboratory sample preparation. Contact our engineering team for bespoke technical solutions.

Learn More

Application	Description	Key Benefit
Environmental Monitoring	Digestion of soil, sediment, and wastewater samples for heavy metal detection (e.g., Lead, Arsenic, Cadmium).	Ultra-low blank values ensure accurate detection at parts-per-billion (ppb) levels.
Pharmaceutical Quality Control	Preparation of active pharmaceutical ingredients (APIs) and excipients for elemental impurity testing per USP standards.	Compliance with stringent purity requirements and contamination-free processing.
Geological and Mining	Decomposition of rock, mineral ores, and metallurgical slag using concentrated acid mixtures.	Ability to handle hydrofluoric acid for the complete dissolution of silicate structures.
Petrochemical Analysis	Digestion of crude oil, lubricants, and refined products to analyze catalyst residues and wear metals.	High pressure and temperature tolerance for the breakdown of complex organic matrices.
Food and Beverage Safety	Digestion of packaged food, dairy products, and agricultural samples for nutritional and toxicological analysis.	Reliable retention of volatile elements like Mercury and Selenium during digestion.
Advanced Materials Research	Sample preparation for high-performance ceramics, polymers, and electronic components.	Customizable vessel designs to accommodate specialized or non-standard sample volumes.

Feature	PL-CP182 Specification Profile
Model Identification	PL-CP182 Series
Core Materials	Virgin High-Purity PTFE / TFM / PFA (Customizable)
Internal Capacity	55ml Standard (Fully customizable to any volume)
Operating Temperature Range	Customizable based on material selection (up to 260°C)
Maximum Pressure Rating	Engineered to client-specific safety and system requirements
Microwave Compatibility	Compatible with major domestic and international microwave digestion systems
Closure Type	Precision-threaded cap with customizable sealing inserts
Manufacturing Process	End-to-end CNC fabrication from isostatically molded stock
Chemical Resistance	Full resistance to HF, HNO3, HCl, H2SO4, and Aqua Regia
Customization Options	Dimensions, thread pitch, wall thickness, and specialized venting ports

High Purity Tfm Microwave Digestion Vessels Ptfe Acid Evaporation Liners Domestic Gt-400 Equivalent Laboratory Reaction Containers

Item Number: PL-CP320

Introduction

Premium PTFE and TFM microwave digestion vessels designed as high-performance replacements for GT-400 systems ensuring trace metal purity and chemical resistance for demanding laboratory digestion and acid evaporation processes with full custom fabrication capabilities available for unique requirements and specifications.

Learn More

Application	Description	Key Benefit
Soil and Sediment Digestion	Complete dissolution of environmental solids using concentrated acid mixtures for heavy metal profiling.	Total recovery of trace elements with zero substrate contamination.
Food Safety Testing	Breaking down complex organic matrices in food products to detect toxic elements like Lead, Arsenic, and Cadmium.	High throughput and reliability for regulatory compliance testing.
Pharmaceutical API Analysis	Digesting active pharmaceutical ingredients to ensure mineral purity and absence of catalyst residues.	Meets stringent USP and EP standards for trace metal limits.
Geochemical Exploration	Dissolving mineral ores and rock samples for precise elemental mapping and mineralogical research.	Exceptional resistance to Hydrofluoric acid used in silicate dissolution.
Petrochemical Catalyst Recovery	Processing spent catalysts and petroleum products to analyze metal content and purity.	Durable performance under high-pressure organic solvent reactions.
Wastewater Monitoring	Rapid digestion of aqueous samples with high particulate loads for environmental monitoring.	Faster processing times compared to traditional open-vessel digestion.

Specification Category	Parameter Details for PL-CP320
Model Identifier	PL-CP320
Primary Material	High-Purity TFM / PTFE (Application Dependent)
Compatible Systems	GT-400 and similar domestic microwave digestion units
Fabrication Method	End-to-end precision CNC machining
Chemical Compatibility	Universal (HF, HNO3, HCl, H2SO4, Aqua Regia, Organic Solvents)
Temperature Range	Fully customizable based on specific vessel wall thickness
Pressure Rating	Custom engineered to meet specific application safety margins
Internal Surface Finish	High-gloss, low-porosity machined finish
Dimensional Specs	Custom produced to order; standard GT-400 dimensions available
Trace Purity Level	Grade suitable for ICP-MS and ICP-OES analysis

5Ml High Pressure Ptfe Digestion Vessel For Geological Mineral Analysis Corrosion Resistant Polytetrafluoroethylene Tfm Digestion Inner Liner

Item Number: PL-CP346

Introduction

High-performance 5ml PTFE digestion vessels offer superior corrosion resistance and thermal stability for demanding geological mineral analysis. Engineered from premium fluoropolymers, these customizable units ensure zero contamination and total sample mineralization in high-pressure environments, optimized for trace element detection processes.

Learn More

Application	Description	Key Benefit
Geological Ore Digestion	Complete dissolution of silicates and refractory minerals using HF and HNO3 mixtures.	Ensures total recovery of rare earth elements and precious metals.
Soil and Sediment Analysis	Mineralization of environmental samples to detect heavy metal contamination like Lead, Cadmium, and Chromium.	Prevents environmental contamination and maintains sample purity.
Petrochemical Testing	High-pressure breakdown of catalysts and heavy crude oil fractions for metal content determination.	Resists organic solvents and high-pressure vapors without degradation.
High-Purity Material Prep	Digestion of semiconductor-grade materials and advanced ceramics for impurity profiling.	Ultra-low blank values for high-sensitivity ICP-MS detection.
Mining Quality Control	Rapid digestion of daily production samples to monitor ore grade and extraction efficiency.	High throughput and consistent performance in industrial environments.
Pharmaceutical Trace Analysis	Decomposition of active pharmaceutical ingredients (APIs) to check for residual catalyst metals.	Meets strict regulatory standards for zero-contamination sample prep.

Specification Category	Parameter Details (Item Number: PL-CP346)
Model Identifier	PL-CP346
Nominal Capacity	5ml (Standard configuration; other volumes fully customizable)
Primary Materials	High-Purity PTFE / Modified TFM (Customizable based on application)
Manufacturing Method	High-precision CNC Machined / Bespoke Fabrication
Corrosion Resistance	Universal resistance to strong acids, bases, and organic solvents
Maximum Temperature	Customizable based on wall thickness and material grade
Operating Pressure	Designed for high-pressure closed-system digestion
Trace Element Purity	Optimized for ppt and ppb level trace analysis
Dimensional Tolerances	Precision CNC tolerances (Specific dimensions provided upon custom design)
Closure Type	Sealing cap or liner-only configurations (Customizable)

Application	Description	Key Benefit
Specification Category	**Parameter Details (Item Number: PL-CP346)**	
Compatibility	Compatible with standard high-pressure digestion jackets and microwave systems	

High Purity Ptfe Microwave Digestion Vessel For Soil And Food Analysis Acid Resistant Fluoropolymer Sample Preparation Liners

Item Number: PL-CP308

Introduction

Engineered for high-pressure microwave digestion these ultra-pure PTFE liners provide exceptional resistance to concentrated acids during soil and food sample preparation ensuring zero contamination and uniform heating for precise heavy metal trace analysis in laboratory environments.

Learn More

Application	Description	Key Benefit
Soil & Sediment Analysis	Digestion of environmental soil samples using HNO3/HF for heavy metal (Pb, Cd, Cr) quantification.	Complete silicate matrix decomposition
Food Safety Testing	Processing of grains, meats, and vegetables to detect toxic elements like arsenic and mercury.	Low trace metal background noise
Geological Exploration	Mineral and rock sample dissolution for rare earth element (REE) analysis in mining research.	Resistance to aggressive acid mixtures
Wastewater Monitoring	Digestion of industrial effluent and sewage sludge to monitor environmental compliance.	High-pressure volatile retention
Pharmaceutical QA	Sample preparation for testing heavy metal limits in raw materials and finished drug products.	Compliance with USP <232>/<233>
Polymer & Plastic Testing	Decomposition of synthetic materials to analyze additive levels and catalyst residues.	High-temperature oxidation capability
Petrochemical Analysis	Preparation of crude oil and lubricants for trace elemental analysis using microwave assistance.	Safe handling of organic solvents
Clinical Research	Mineralization of biological tissues and fluids for toxicological and metabolic studies.	Biologically inert contact surfaces

Specification	Detail for Item Number: PL-CP308
Model Identification	PL-CP308
Primary Material	High-Purity Polytetrafluoroethylene (PTFE) / Modified PTFE (TFM)
Capacity Options	Available in 50mL, 75mL, and 100mL variants
Maximum Operating Temperature	260°C (Continuous) / 300°C (Short-term peak)
Maximum Operating Pressure	Up to 200 bar (Design dependent)
Rotor Compatibility	Optimized for 44-Position High-Throughput Rotors
Acid Resistance	HF, HNO3, HCl, H2SO4, HClO4, Aqua Regia
Wall Thickness	Reinforced for high-pressure safety margins
Sealing Mechanism	Self-sealing precision plug design
Microwave Transparency	Full microwave absorption transparency for volumetric heating
Dimensional Tolerance	±0.05mm via precision CNC fabrication
Trace Metal Blank Level	< 0.01 ppb for critical elements (Pb, Cd, Hg)

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