

Custom Ptfе Digestion Vessel For Microwave And Graphite Digesters With Acid Removal For Trace Analysis

Item Number: PU-CP316



Introduction

Discover high-purity PTFE digestion vessels engineered for microwave systems and graphite digesters. These customizable laboratory solutions provide exceptional chemical inertness and acid resistance for trace analysis and pressure-driven sample preparation in demanding industrial and research environments globally.

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Application	Description	Key Benefit
Environmental Soil Analysis	Complete decomposition of soil matrices using concentrated HF and HNO ₃ to extract heavy metals for regulatory compliance.	Ensures full release of elements without vessel corrosion or contamination.
Mineral and Ore Digestion	High-pressure digestion of geological samples for ICP-OES analysis of trace minerals like molybdenum and selenium.	Superior pressure resistance prevents the loss of volatile trace elements.
Food Safety Testing	Preparation of biological samples, such as mushroom extracts, to detect trace levels of toxic heavy metals.	Low background metal levels ensure high accuracy in ppb/ppt range.
Pharmaceutical QC	Digestion of active pharmaceutical ingredients (APIs) and excipients to test for elemental impurities under USP <232>/<233>.	Contamination-free processing preserves the integrity of sensitivity testing.
Petrochemical Analysis	Breaking down complex hydrocarbon matrices and polymers for catalyst residue and additive analysis.	High thermal stability allows for the sustained temperatures needed for organic breakdown.
Acid Removal and Concentration	Post-digestion evaporation of excess acids on graphite heating blocks to prepare samples for final dilution.	Integrated workflow reduces sample handling and potential for error.
Battery Material Testing	Dissolution of cathode and anode materials for stoichiometric verification and purity assessment in energy research.	Resists the harsh chemical environments required for advanced fluorinated materials.
High-Throughput Testing	Utilizing 44-position custom arrays to process large batches of samples simultaneously in commercial testing labs.	Maximizes efficiency and consistency across high-volume sample sets.

Specification Category	Details for PU-CP316
Model Number	PU-CP316
Primary Material	High-Purity Virgin PTFE (Polytetrafluoroethylene)
Compatibility	Graphite Digesters, Microwave Digestion Systems, Acid Removal Units
Customization Options	Fully Customizable (Dimensions, Volume, Shape)
Capacity/Volume	Custom-engineered per client requirement
Vessel Geometry	Standard or bespoke CNC machined designs
Hole Configuration	Available in 44-position or user-defined layouts
Maximum Pressure	Dependent on custom wall thickness and housing design
Chemical Resistance	Universal resistance to strong acids (HF, HNO ₃ , HCl, H ₂ SO ₄)

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Trace Metal Background	Optimized for trace analysis (ultra-low leaching)	
Sealing Mechanism	Customizable cap and seal configurations	