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.

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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)