

# Custom Tfm Reaction Vessel With Stainless Steel Jacket And Ptfе Inner Cup For High Corrosion Resistance

Item Number: PL-CP183



## Introduction

Premium custom TFM reaction vessel featuring a stainless steel jacket and PTFE liner for ultimate chemical resistance. This high-pressure system ensures zero contamination in aggressive synthesis environments, providing industrial-grade reliability for critical laboratory applications and advanced materials research.

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Application	Description	Key Benefit
Graphene Oxide (GO) Synthesis	Handling concentrated sulfuric and phosphoric acids combined with strong oxidants like potassium permanganate.	Resists aggressive oxidation and prevents metallic contamination of the GO sheets.
Hydrothermal Synthesis	Synthesis of zeolites, catalysts, and nanomaterials at high temperatures and pressures in aqueous solutions.	Maintains structural integrity under pressure while remaining chemically inert to the precursors.
Trace Metal Digestion	Dissolving mineral samples or environmental materials in concentrated nitric or hydrofluoric acid for ICP-MS analysis.	Ultra-low blank levels and zero leaching of heavy metals from the vessel walls.
ZIF-8@GO Composite Production	Complex synthesis of metal-organic frameworks within a graphene oxide matrix.	Ensures high chemical purity of the composite material by eliminating external impurities.
Pharmaceutical Acid Washing	Cleaning and purification of active pharmaceutical ingredients using harsh chemical reagents.	Prevents cross-contamination between batches and ensures high-purity final products.
Geochemical Sample Prep	Decomposition of silicate rocks and ores using hydrofluoric acid at elevated temperatures.	Durable fluoropolymer liner survives repeated exposure to HF which would dissolve glass.
Battery Material Testing	Testing of electrolyte components and electrode materials in highly reactive chemical environments.	Long-term reliability and resistance to degradation from acidic or basic electrolyte additives.
Bespoke Reaction Setups	Custom-designed reaction environments for proprietary chemical processes requiring non-standard volumes.	Tailored geometry and volume ensure optimal mixing and reaction efficiency for specialized tasks.

Feature	Specification Details for PL-CP183
Model Identifier	PL-CP183 (Custom Configuration)
Inner Liner Material	High-Purity TFM (Modified PTFE) or Virgin PTFE
Outer Jacket Material	304 or 316L Stainless Steel (Precision Machined)
Maximum Operating Temp	Customizable (Standard range up to 260°C depending on configuration)
Operating Pressure	Customizable based on jacket wall thickness and sealing design
Available Volumes	Fully customizable from 10ml to 2000ml+ based on user requirements
Sealing Design	Threaded Cap, Bolted Flange, or Custom Compression Seal
Chemical Compatibility	Universal (Includes HF, Aqua Regia, Strong Acids, Bases, and Solvents)
Fabrication Method	Full End-to-End Custom CNC Machining
Optional Features	Pressure relief valves, thermowells, stirring bar compatibility, sampling ports