

Ptfe Distillation Condensation Apparatus High Temperature Hydrofluoric Acid Resistant Fluorination Reaction Flask

Item Number: PL-CP117



Introduction

Premium PTFE distillation condensation apparatus engineered for extreme chemical resistance and high-temperature fluorination processes. Fully customizable configurations ensure superior performance in hydrofluoric acid environments and ultra-pure trace analysis applications for industrial and laboratory procurement.

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Application	Description	Key Benefit
HF Acid Purification	Distillation and sub-boiling purification of hydrofluoric acid for trace metal analysis.	Eliminates silica leaching and withstands aggressive etching.
Semiconductor Etchant Prep	Mixing and distilling high-purity chemical etchants used in silicon wafer processing.	Maintains ultra-low metallic impurity levels required for electronics.
Pharmaceutical Synthesis	Conducting fluorination reactions where fluoride-based reagents are utilized as catalysts or reactants.	Prevents equipment degradation and ensures reagent purity.
Environmental Trace Analysis	Digestion and distillation of soil or water samples containing complex fluoride matrices.	Ensures accurate results by removing background contamination risks.
Isotope Separation	Concentration of specific isotopes through controlled distillation in corrosive environments.	Long-term reliability and precise thermal control for delicate separations.
Petrochemical Testing	Distillation of volatile organic compounds and corrosive catalysts used in polymer research.	Superior durability against organic solvents and high-pressure steam.
Custom Reactor Setups	Bespoke distillation configurations for non-standard chemical engineering pilot plants.	Full modularity and custom CNC fabrication to fit unique footprints.

Feature	Specification Details for PL-CP117
Model Identifier	PL-CP117 (Customizable Series)
Primary Materials	Virgin PTFE (Polytetrafluoroethylene) / Ultra-High Purity PFA
Operating Temperature Range	-200°C to +260°C (-328°F to +500°F)
Pressure Rating	Full vacuum to positive pressure (custom-rated per wall thickness)
Flask Volume Capacities	50mL to 20,000mL (Bespoke sizes available)
Condenser Lengths	100mm to 1000mm+ (Customized internal pathways)
Connection Interfaces	Threaded GL-ports, Tapered Ground Joints (e.g., 24/40, 29/32), or Flanges
Chemical Compatibility	Universal (HF, Nitric Acid, Sulfuric Acid, Organic Solvents, Alkalis)
Surface Roughness	Ra < 0.4 μm (High-purity CNC finish)
Cooling Medium Ports	Standard NPT or barbed fittings for water/chiller integration

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Customization Options	Jacketed flasks, multi-neck lids, integrated thermowells, and reflux splitters	