Custom Pfa Serpentine Straight Condenser Hf Resistant Reaction Device Laboratory Cooling Column

Item Number: PL-CP26

Introduction

Our custom PFA serpentine and straight condensers offer unparalleled chemical resistance for HF reaction devices and high-purity cooling columns, engineered from premium fluoropolymer for semiconductor and trace analysis applications requiring exceptional thermal stability and inertness in critical lab environments.

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Application	Description	Key Benefit
Semiconductor Etching	Condensing HF vapors during wafer cleaning and etching processes in cleanroom environments.	Absolute resistance to HF corrosion and ultra-low metallic leaching.
Trace Metal Analysis	Acid digestion and reflux of environmental or biological samples for ICP-MS preparation.	Eliminates background contamination from laboratory apparatus.
Acid Distillation	Purification of reagent-grade acids (nitric, hydrochloric, sulfuric) to ultra-high purity levels.	Maintains chemical integrity of the distillate at high temperatures.
Pharmaceutical Synthesis	Reflux and solvent recovery in the production of active pharmaceutical ingredients (APIs).	FDA-compliant material with excellent non-stick properties for easy sterilization.
Petrochemical Testing	Vapor condensation in the analysis of volatile hydrocarbons and aggressive catalysts.	High thermal stability and resistance to solvent-induced swelling.
Lithium-Ion Battery Research	Electrolyte formulation and testing involving highly reactive fluorine-based compounds.	Prevents moisture ingress and withstands aggressive electrochemical reagents.
Environmental Monitoring	Large-scale distillation of wastewater and soil extracts for the detection of persistent organic pollutants.	Durable construction for high-volume, continuous processing.

Parameter	Specification Detail for PL-CP26
Product Item Number	PL-CP26
Material Construction	High-Purity Perfluoroalkoxy (PFA)
Condenser Configurations	Serpentine (Coiled), Straight-Tube, or Bespoke Multi-Stage Designs
Maximum Operating Temperature	260°C (500°F)
Chemical Compatibility	Universal (Except molten alkali metals and fluorine at high temp)
Fabrication Method	End-to-end Custom CNC Machining and Thermal Forming
Customization Scope	Length, Diameter, Coil Pitch, Wall Thickness, and Fitting Types
Inlet/Outlet Connections	Customizable PFA Flare, Compression, or Threaded Fittings
Surface Finish	Smooth, Non-porous, Low-friction internal and external surfaces
Standard Compliance	Manufactured to meet high-purity industrial and laboratory standards