

# Custom Ptfе Condensation Reflux Distillation Purification System 500MI Corrosion Resistant Low Background

Item Number: PL-CP83



## Introduction

Professional high-purity PTFE condensation and reflux apparatus for distillation and purification. This customizable 500ml system offers exceptional corrosion resistance and low background interference for trace analysis and sensitive chemical reactions in demanding laboratory environments.

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Application	Description	Key Benefit
Trace Metal Purification	Distillation of ultra-pure acids (HNO <sub>3</sub> , HCl, HF) for use in semiconductor and environmental analysis.	Eliminates ionic leaching for sub-ppt background levels.
Pharmaceutical Synthesis	Refluxing of aggressive organic intermediates and catalysts in drug development processes.	Prevents contamination from glass-borne impurities and ensures reaction stability.
Isotope Geochemistry	Sample digestion and refluxing of geological materials using concentrated hydrofluoric acid.	Complete resistance to HF which would otherwise dissolve glass apparatus.
Specialty Chemical R&D	Distillation and purification of high-purity monomers and polymers in controlled environments.	Maintains polymer purity by providing a non-reactive fluid path.
Environmental Monitoring	Concentration and purification of water samples for the detection of persistent organic pollutants.	High recovery rates due to non-stick surface properties.
Battery Material Testing	Refluxing of electrolyte components and lithium-ion battery precursor materials.	Chemical stability in the presence of reactive lithium salts and solvents.
Petrochemical Analysis	Distillation of crude oil fractions and refined products for quality control and sulfur analysis.	Robustness against corrosive sulfur compounds at elevated temperatures.

Feature	Specification Details (Model PL-CP83 Series)
<b>Model Identifier</b>	PL-CP83
<b>Primary Construction Material</b>	High-Purity PTFE / PFA (Customizable based on thermal requirements)
<b>Standard Capacity</b>	500ml (Alternate volumes available upon request)
<b>Design Configuration</b>	Modular Reflux and Condensation Assembly
<b>Temperature Operating Range</b>	-200°C to +260°C
<b>Chemical Compatibility</b>	Universal (Except molten alkali metals and gaseous fluorine)
<b>Fabrication Method</b>	Full Custom CNC Machining
<b>Sealing Mechanism</b>	Precision Machined Threaded Joints / O-Ring Free Design (Optional)
<b>Condenser Type</b>	Liebig, Graham, or Custom Internal Coil Designs
<b>Surface Finish</b>	Ra < 0.4 μm (High-purity machined finish)
<b>Customization Options</b>	Inlet/Outlet port sizes, sensor thermowells, jacketed cooling zones