ACID PURIFICATION SYSTEMS

I. PTFE Sub-boiling acid distillation systems: Compact, integrated PTFE sub-boiling acid distillation systems for purifying HNO₃, HCl and HF. Made of high purity, chemically and biologically inert PFA material. To purify reagents grade acid to high purity acid for usage in critical trace element analysis by ICP-MS.

II. Heating system and temperature control: Infrared heating elements with 600 W power. Variable temperature settings. Thermocouple near infrared heating elements. Temperature controller to be kept at a distance of 2–3 meter with a power cord. Length of input power cord 2–3 meter. Power source 230 V AC, 50/60 Hz.

III. Capacity and distillation rate: Acid purification up to 1 litre at a time. Distillation rate of 40 ml per hour for each of HNO₃, HCl and HF or better.

IV. Cooling: Air cooled, without the need of running water.

V. Construction material: All-PFA chamber with integrated heater, and a PFA collection bottle. Vents in the vessel and distillate transfer should be fitted with PTFE membranes to prevent airborne contamination. All wetted parts should be of high purity, molded PFA.

VI. Safety and Design: No bubbling, spitting or splashing. Pressure equalization tube to maintain uniform pressure throughout the system. Built-in waste drain for easy cleaning, without the use of a pump. Compact design with a footprint of 40 cm x 20 cm and height of 45 cm or equivalent volume to fit in a normal fumehood.

VII. Number of Systems: It is essential to quote three numbers of acid purification systems, one each dedicated separately for HF, HCL and HNO₃. Three purification flasks (1 litre each), three re-condensation flasks (1 litre each), three collecting flasks (500 ml each), and three collection bottles. One polypropylene spill tray.

VIII. Warranty: One year from the date of successful installation/commissioning of equipment.