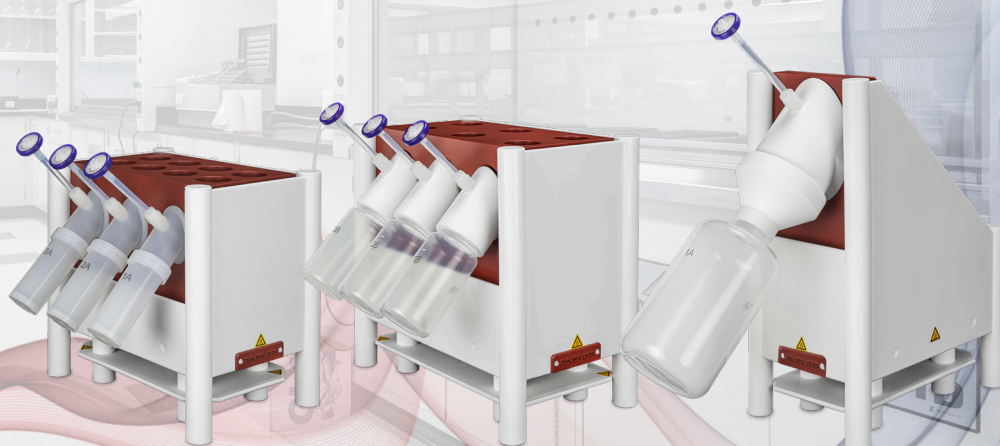


ANALAB[®]

CleanAcids

*Sub-boiling Acid
Purification Systems*



Cleaner Acids. Lower Cost. Better Results.

Safely produce ultra-pure reagents for trace metal analysis from inexpensive reagent grade materials. Provides easy operation and simple setup for purifying multiple reagents.

- Reagents are gently heated and the high-purity vapors produced condense into PFA collection bottle
- Sub-boiling distillation produces high-purity acid in a single step
- Safe unattended operation with externally located regulator

Features & Capabilities

- PFA-coated graphite heating block for maximum resistance to aggressive chemicals
- Digitally controlled temperature regulation and optional remote probe
- Available in three configurations (3 x 125 mL, 3 x 500 mL, and 1 x 1000 mL)
- Safe and simple setup - just two connections minimizes setup, maintenance and training
- Suitable for Class 1 (ISO 3) clean room environments – creates no contaminants/particles

Safety

- Semi-permeable filter releases pressure without venting acid vapors
- PTFE thermal protection around all sides to protect users
- Programmable timer for unattended shutdown

Reagents Purified

A variety of reagents can be purified with CleanAcids, and can be simply and easily configured to routinely produce varying reagents with additional vessel kits.

Reagent	Boiling Point (°C)
Hydrochloric Acid (HCl) 25%	107
Hydrofluoric Acid (HF) 48%	106
Nitric Acid (HNO ₃) 65%	119
Ammonia (NH ₄ OH) 25%	36
Hydrogen Peroxide (H ₂ O ₂) 30%	107

CleanAcids Features Diagram

PTFE Elbow

- Connects PFA Source & Product bottles for enclosed environment

Semi-Permeable Membrane

- Releases pressure without venting acid vapor

CleanClever Well

- Multiple port models equipped with heated wells for cleaning individual bottle with acid vapor

PFA Bottles

- Source and Product bottles are inert to corrosion & reduce contamination

Purification Port(s)

- Some models support multiple vessel kits for simultaneous purification

External Control

- 1.7 m (5.5') PTFE-shielded control cable
- Regulator located remote from CleanAcids module

Graphite Heating Block

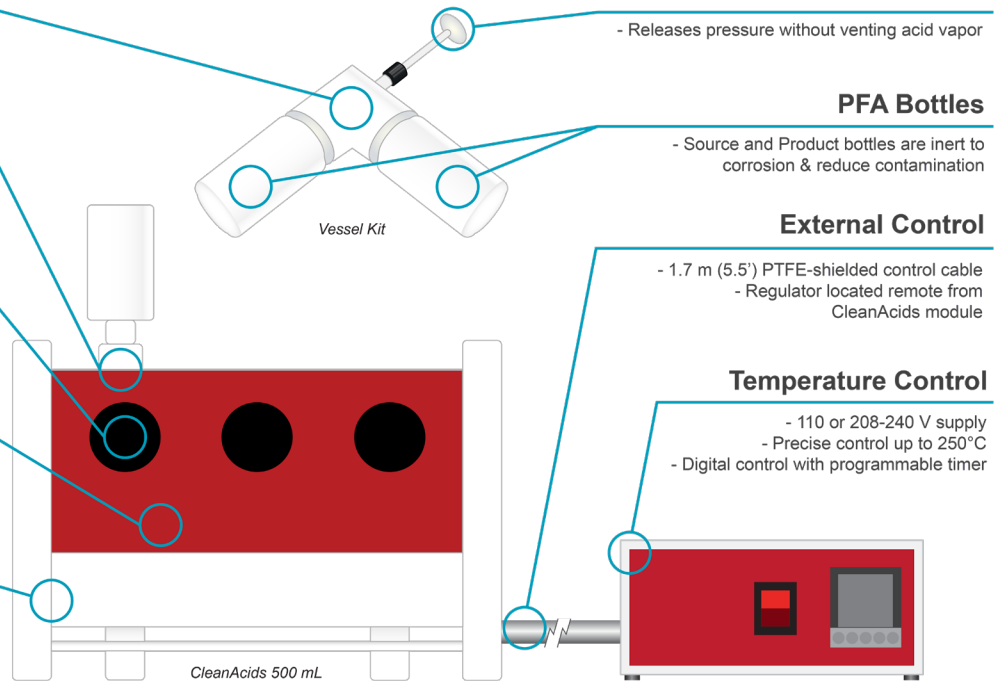
- PFA-coated graphite assembly inert to acid corrosion & uniformly heats vessel

Temperature Control

- 110 or 208-240 V supply
- Precise control up to 250°C
- Digital control with programmable timer

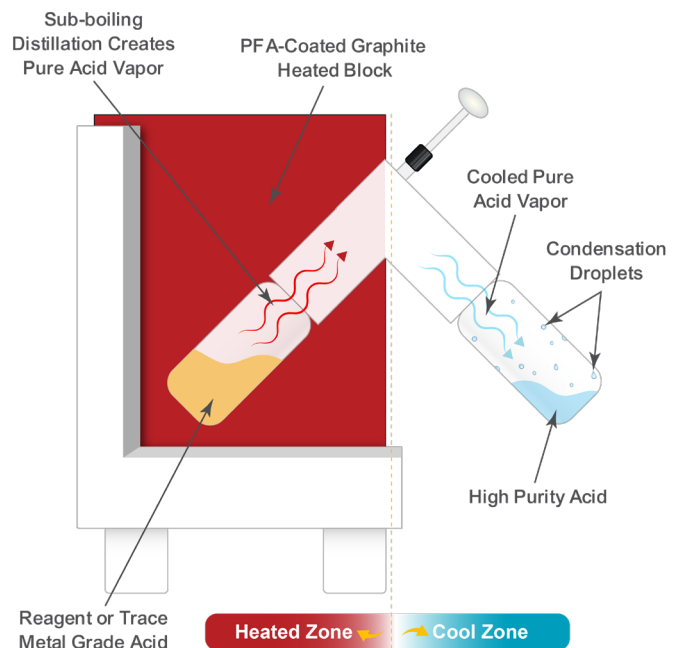
Thermal Protection

- PTFE outer shell protects user from heated block



How It Works

- Place reagent or trace metal grade acid in PFA Source bottle & insert assembled vessel kit in Purification Port
- High purity acid vapors are produced by heating acid to slightly below the boiling point of the acid
- Heated vapors leave heated zone and condense on the cooler walls of the Product bottle
- Contaminants remain behind in Source bottle, while high purity acid condenses in Product bottle
- Ideal for unattended operation, as regulator is controlled with a timer



Models

Three CleanAcids models are available to serve your laboratory's purification needs. Two of the models are configured with CleanClever wells on the top surface of the thermal block, which can be used to acid vapor clean vessels at the same time as reagents are being purified.



CleanAcids Model	3 x 125 mL	3 x 500 mL	1 x 1000 mL
Part Number (110-120 V / Amps)	CA-3.125-1V-15A	–	CA-1.1000-1V-15A
Part Number (208-240 V / Amps)	CA-3.125-2V-20A	CA-3.500-2V-15A	CA-1.1000-2V-15A
Dimensions (L x W x H, in cm)	36 x 24 x 35	42 x 24 x 41	34 x 22 x 50
Weight (Kg)	19	33	19
Number of CleanClever wells	6	6	–

Regulators

Each CleanAcids system is controlled by a temperature regulator, which is designed for remote placement to eliminate corrosion of the electronic components. Single-setpoint regulators provide timed operation with an internal heating block sensor, while Dual Controller regulators add the capability to directly measure and control heating from inside the vessel via a remote temperature probe.

Regulator	Timer	Block Sensor Control	Vessel Probe Control	Electrical Requirement
RNP-1V-15A-T	✓	✓		100-120V / 15A
RNP-2V-15A-T	✓	✓		208-240V / 15A
RNP-2V-20A-T	✓	✓		208-240V / 20A
RNP-DUAL-1V-15A	✓	✓	✓	100-120V / 15A
RNP-DUAL-2V-15A	✓	✓	✓	208-240V / 15A
RNP-DUAL-2V-20A	✓	✓	✓	208-240V / 20A




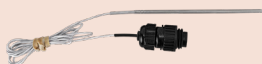
Single-Setpoint Regulator



Single-Setpoint Dual Controller Regulator

CleanAcids Accessories

CleanAcids Vessel Kits consist of two PFA bottles (Source and Product) and a PTFE Elbow. Systems include complete vented vessel kits. Additional vessel kits can be added to easily and quickly purify additional reagents. To support use of a remote temperature probe, vessel kits equipped with dual port elbows are available. Stands for the vessel kits are available to store them when not in use.

Description	Contents	Part Number	Accessory Image
PFA Vessel Kit, 125 mL, with Vent	2 x 125 mL PFA bottles & closures + PTFE elbow, vent, filter	VK-125mL-WV	
PFA Vessel Kit, 500 mL, with Vent	2 x 500 mL PFA bottles & closures + PTFE elbow, vent, filter	VK-500mL-WV	
PFA Vessel Kit, 1000 mL, with Vent	2 x 1000 mL PFA bottles & closures + PTFE elbow, vent, filter	VK-1000mL-WV	
Dual Port Elbow & Probe Kit, for 125 mL	PTFE dual port elbow, vent, filter, & temperature probe for 125 mL	EP-125mL-WV	
Dual Port Elbow & Probe Kit, for 500 mL	PTFE dual port elbow, vent, filter, & temperature probe for 500 mL	EP-500mL-WV	
Dual Port Elbow & Probe Kit, for 1000 mL	PTFE dual port elbow, vent, filter, & temperature probe for 1000 mL	EP-1000-WV	
Elbow Stand, six position for 125 mL Vessel Kits	PVC stand for 6 x 125 mL Clean Acids Vessel Kits	ES-6.125	
Elbow Stand, three position for 500 mL Vessel Kits	PVC stand for 3 x 500 mL Clean Acids Vessel Kits	ES-3.500	
Temp Probe for 125 mL Vessels	Remote probe (150 mm), use with Dual Controller & 125 mL CleanAcids vessels	S-INSITU-150E	
Temp Probe for 500 mL Vessels	Remote probe (270 mm), use with Dual Controller & 500 mL CleanAcids vessels	S-INSITU-270E	
Temp Probe for 1000 mL Vessels	Remote probe (450 mm), use with Dual Controller & 1000 mL CleanAcids vessels	S-INSITU-450E	