

Thermo Scientific Barnstead Water Purification Stills

Pure water. Pure research. Total confidence.

TYPE 2
Pure Water
Purification Systems

Thermo Scientific Barnstead Mega-Pure Glass Stills
Pure Water: Choice of five production capacities

Thermo Scientific Barnstead Mega-Pure Glass Stills effectively remove inorganic solids, organics with boiling points higher than water, bacteria, and pyrogens. The stills are constructed of non-leaching components to ensure high purity water.

Product Features:

- Contact with only glass, quartz, and Teflon® components ensures ultimate purity and eliminates cross-contamination.
- Choice of five production capacities.
- Units are easily wall- or bench-mounted.
- Vertical condenser design provides maximum purity.
- High temperature cut-off shuts down the still if the temperature is too high, preventing heating element burnout.
- Quick release cover provides easy cleaning access.
- Connection to Automatic Collection System (ACS) assures a 24-hour automatic system.
- Includes feed water solenoid valve for automatic operation.
- Produces water with a resistivity of 1-10 MΩ-cm, depending on feed water purity.



Applications include:

- Buffer/Reagent Prep
- Glassware Washing
- Dishwasher Feed

Quick Look Comparison					
	MP-1	MP-3A	MP-6A	MP-11A	MP-12A
System Features	Compact, easy-to-use	Stills for larger volume demands			Deionizer and distillate cooler
Product Water Capacity, LPH	1	3	6	13	12
Cooling Water Capacity, LPH	11.3	30.3	53	130	130
Number of Heaters	1	1	2	4	4
Resistivity at 25°C, MΩ-cm*	1-10	1-10	1-10	1-10	1-10

* Resistivity is dependent on feed water quality



MP-1

- Compact, easy-to-use 1 LPH glass still available with or without a storage bottle.

MP-3A, MP-6A and MP-11A

- These stills are great for larger volume demands with storage and options.

MP-12A

- This still has a built-in deionizer for pretreated feed to boiler. Distillate cooler allows product water to be used as it is produced, cooling it from 85°C (185°F) to about 55°C (131°F) for ease of handling. No need to wait for cooling.

Mega-Pure Glass Still Accessories

Automatic Collection System (ACS)

- All glass system designed to collect water from the Mega-Pure Glass Stills and control their operation.
- Generous 45 L capacity.
- Easily wall- or bench-mounted.
- Preset to shut off the power to the heaters and the water supply to the still after the bottle has collected approximately 45 L.
- The system will automatically restart the still and refill the collection system when the purified water supply has been depleted to approximately 38 L.

Pretreatment for Hard Water (Mega-Pure Deionizer Accessory)

- Allows for pretreating feed water to Mega-Pure Glass Stills.
- Mega-Pure single or dual cartridge deionizer reduces scale build up and increases distillate purity.
- Greater flexibility in meeting varying feed water qualities.
- Temperature-compensated purity meter measures water quality and indicates when cartridges are exhausted.
- Built-in drain valve for simple cartridge changes.
- Large cartridge capacity for extended cartridge use.
- Unit can be wall- or bench-mounted.



Plastic Bottle (413964)



Glass Bottle (410535)



Automatic Collection System



Mega-Pure Deionizer D2

Thermo Scientific Barnstead Mega-Pure Glass Stills Specifications and Ordering Information

Product Specifications				
Inlet Water Temperature °C (°F)	Vent Temperature °C (°F)	Auto Drain	Inlet Pressure (psig)	Auto Start/Stop Controls
4-37 (39.2-98.6)	85-96.7 (185-206)	No	20-100	Yes

System Options							
	Volume Output (LPH)*	Overall Dimensions W x H x D in. (cm)	Electrical (50/60 Hz)			Model Number	
			Volts	Amps	Phase	Unit	6 L Bottle Included
MP-1	1.4	18 x 34 x 9.75 (45.7 x 86.4 x 24.8)	120 V	9	1	A440266	A440267
			240 V	4.5	1	A7981	A7982
MP-3A	3.4	23 x 45 x 12 (58.4 x 114.3 x 30.5)	240 V	11	1	A440367	—
			208 V*	13	1	A440696	—
MP-6A	6	23 x 45 x 12 (58.4 x 114.3 x 30.5)	240 V	21	1	A440518	—
			208 V*	25	1	A440697	—
MP-11A	13	29.2 x 53 x 14.4 (74.2 x 134.6 x 36.6)	240 V	42	1	A440118	—
			208 V*	49	1	A440117	—
MP-12A* Built-in deionizer (holds two cartridges) and distillate cooler.	12	29.2 x 53 x 14.4 (74.2 x 134.6 x 36.6)	240 V	42	1	A442011	—
			208 V*	49	1	A442012	—
Required Accessories						Model Number	
Dual Solenoid Required if using pretreated boiler feed water and untreated cooling water.			MP-1 (240 V), MP-3, MP-6A, and MP-11A			440236	
			MP-1 (120 V)			RY798X2A	
Deionization Cartridges Required for MP-12A. See Optional Accessories.							
Storage Solutions See Storage Options.							
Optional Accessories						Model Number	
Single Cartridge Deionizer (D1) Single cartridge deionizer removes inorganic contaminants. Order one deionization cartridge to complete your system. Dimensions: W x H x D in. (cm) - 10.5 x 25.5 x 7.5 (26.7 x 64.8 x 19)						D440046	
Dual Cartridge Deionizer (D2) Provides increased capacity with chlorine and organic removal. Order two deionization cartridges to complete your system. Dimensions: W x H x D in. (cm) - 16.75 x 25.5 x 7.5 (42.6 x 64.8 x 19)						D440066	
Deionizer Accessories			Still Adapter Kit Required to connect the Deionization System to any Mega-Pure Glass Still.			440376	
			Solenoid Valve Accessory Kit For use with the D1 or D2 when used as stand alone units.			440375	
Deionization Cartridges			High Purity Cartridge Used in the MP-12A, D1 and D2 unit for high purity.			D400377	
			High Capacity Cartridge Used in MP-12A, D1 and D2. Removes ionized solids for extended capacity.			D400499	
			Organic Removal Cartridge Used in D2 for organic and chlorine removal.			D442065	

*Volume Output for 208V units can be reduced up to 25% less than specified.





Storage Options		Model Number
Storage Bottles For manual operation.	Plastic Bottle, 6 L Capacity For use with MP-1 and MP-3A stills.	413964
	Glass Bottle, 9 L Capacity For use with MP-1 and MP-3A stills.	410535
	Glass Bottle, 13 L Capacity For use with any Mega-Pure Glass Still.	413934
	Glass Bottle, 45 L Capacity For use with any Mega-Pure Glass Still.	410164
Automatic Collection System (ACS) For use with any Mega-Pure Glass Still. Collects up to 45 L of water and controls the still. Dimensions: W x H x D in. (cm) 16.25 x 38 x 16.25 (41.3 x 96.5 x 41.3)	Automatic Collection System (ACS) Unit	B440704
	Flexible Tubing Adapter Kit Needed when the supplied glass tubing is either too long or too short to reach still. Flexible tubing is not included. 0.5" Teflon tubing able to handle 80-90°C water is recommended.	440138
	ACS Wall Mounting Bracket	400634
	Adapter for ACS Washer Hook-up for Glassware Washers	440241
	ACS to Nanopure System Adapter	D6832



Thermo Scientific Barnstead Classic Stills

Pure Water: Choice of five production capacities



Thermo Scientific Barnstead Classic Stills effectively remove inorganic solids, organics, bacteria, and pyrogens. The stills are constructed of copper and bronze with a coating of pure tin. The tin's inert nature prevents any leaching of contaminants into the water.

Product Features:

- Double-walled boiler and preheating of feed water conserves electricity.
- Vented condenser allows for stripping of gaseous impurities.
- Unique de-concentrator removes scale forming impurities from the boiler.
- Unique Thermo Scientific Q-Baffle ensures high quality pyrogen free water by stripping contaminant laden water droplets from steam.
- Space-saving horizontal condenser.
- Metal construction withstands years of use.
- Units are easily floor and bench mountable, depending on model.
- Inert pure tin pathways assure product water quality.
- Controller unit can be wall mounted

Portable Stills

- Requires no permanent plumbing or electrical connections, allowing quick set-up.
- Includes low water cut-off for safety protection
- Bench-mounted.

Floor Model Electric Stills

- Come standard with floor mounting stand.
- New over temperature protection system improves safety.
- New plug-and-play hardware allows for easier installation.
- Capacities from 1 to 10 GPH.
- Low water cut-off protects heating elements when water supply is interrupted.
- Optional fully automatic controls allow for unattended operation.
 - Stops still when storage tank is full, starts still when water level falls below preset level.
 - Drains still boiler at selected 2, 4, 8, 16-hour intervals to reduce scale formation.

Steam Still

- Utilize available in-house steam as heat source.
- Optional fully automatic controls allow for unattended operation.
 - Stops still when storage tank is full, starts still when water level falls below preset level.
 - Drains still boiler at selected 2, 4, 8, 16-hour intervals to reduce scale formation.

Applications include:

- Buffer/Reagent Prep
- Glassware Washing
- Dishwasher Feed

Quick Look Comparison

	Portable Electric Stills	Floor Model Electric Stills				Steam Stills
Product Water Capacity, GPH	1/2	1	2	5	10	10
Mounting	Bench	Floor				Floor



Thermo Scientific Barnstead Classic Stills Specifications and Ordering Information

System Options											
		Output GPH (LPH)	Cooling Water GPH (LPH)	KW	Electrical (50/60 Hz)		Phase	Dimensions W x H x D in. (cm)			Model Number
					Volts	Amps					
Electric Stills Floor stand included (except A1007)	1/2 GPH Portable	0.5 (1.9)	4 (15)	1.3	120	12	1	21 (52)	19 (49)	10 (26)	A1007
	1 GPH	1 (3.8)	8 (30)	2.6	120	23	1	22 (56)	66 (168)	10 (25)	A1011-A
		1 (3.8)	8 (30)	2.6	240	12	1	22 (56)	66 (168)	10 (25)	A1011-B-61
	2 GPH	2 (7.6)	16 (61)	6	240	26	1	23 (58)	68 (173)	11 (28)	A1013-B-61
		2 (7.6)	16 (61)	6	208	17	3	23 (58)	68 (173)	11 (28)	A1013-C
	5 GPH	5 (19)	40 (151)	13	240	57	1	35 (89)	77 (196)	14 (36)	A1015-B-61
		5 (19)	40 (151)	13	208	36	3	35 (89)	77 (196)	14 (36)	A1015-C
10 GPH	10 (38)	80 (303)	26	240	66	3	37 (94)	89 (226)	14 (36)	A1016-D	
Steam Stills		Output GPH (LPH)	Cooling Water GPH (LPH)	Steam Pressure (PSI)	Boiler Horsepower	Steam lb/hr (kg/hr)	Dimensions W x H x D in. (cm)			Model Number	
	10 GPH	10 (38)	38 (144)	35-50	3.5	90 (41)	90 (229)	150 (330)	19 (48)	A1213	
Required Accessories											Model Number
Steam Still Floor Stand		For 10 GPH Steam Stills only								G1000	
Storage Tank		Choose a storage reservoir that best fits your needs – go to Thermo Scientific Barnstead Classic Still Storage Reservoirs and Accessories on pages 52-53									
Optional Accessories											
Fully Automatic Controls 120 V (50/60 Hz) Includes feedwater and drain solenoid valves, manual valves, piping and level monitor.		For use with 1 and 2 GPH electric stills								G2100	
		For use with 5 GPH electric stills								G2110	
		For use with 10 GPH electric still								G2125	
		For use with 10 GPH steam still								G2020	



Thermo Scientific Barnstead Classic Still Storage Reservoirs and Accessories



Storage Reservoir shown with Floor Stand.



Storage Reservoir Floor Stand



Storage Reservoir Wall Bracket



Boost Pump



Distribution Pump

Select a Thermo Scientific Barnstead Classic Still Storage Reservoir and mounting option that will best fit your needs. The Ventgard Air Filter, Water Seal, and UV Light Assembly are required accessories that will protect your pure water during storage.

Product Features:

Storage Reservoirs

- Available in 10 to 200 gallon reservoir options.
- Crafted from copper and hand-wiped with pure tin to ensure the purity of the distilled water.
- All tanks include a removable cover, water level sight glass, and a tin coated draw-off faucet with serrated hose nipple.
- Connections provide for optional accessories including pumps and fully automated controls.
- Requires a floor stand or wall bracket (10 and 25 gallon reservoirs only) for proper installation.

Required Accessories

Floor Stand and Wall Bracket

- Choose either a floor stand or wall bracket for proper installation of reservoir.

Floor Stands

- 10, 25 and 50 gallon reservoir stands are fabricated from heavy gauge sheet metal and have adjustable feet.
- 100 and 200 gallon reservoir stands are fabricated of thick steel angle-iron.

Wall Brackets

- 10 gallon reservoir brackets are fabricated from heavy gauge aluminum.
- 25 gallon reservoir brackets are fabricated of thick steel angle-iron.

Ventgard Air Filter and Water Seal

- Protects the stored water against airborne particulates, organics and CO₂.
- Water seal works as a one-way valve to allow distilled water into reservoir.
- Prevents air from entering the reservoir via the condenser atmospheric vent.

UV Light Assembly

- Maintains sterility in the tank.
- UV lamp is enclosed by a tubular, transparent, inert sheath.
- When lamp changes are necessary, only the lamp needs to be removed. The reservoir cover and sheath remain in place eliminating any exposure of water to contamination from the air.

Optional Accessories

Thermo Scientific Barnstead Boost Pumps

- Powered boost pump assembly increases low feed water pressures and is not intended for use as a distribution pump.
- Suitable for any Thermo Scientific Barnstead water systems that are specified to use up to 1.5 gallons of water per minute.
- The boost pump can compensate for long tubing runs, height issues or a combination of both.

Thermo Scientific Barnstead Distribution Pumps

- Our distribution pumps are used with purified water storage tanks when it is necessary to keep the pure water under pressure for delivery to locations above tank level or at greater than gravity flow pressure.
- Choose from four sizes.
- Choose a pump equipped a tin bypass with restrictive orifice for tank and a low-level cutoff switch to shut pump off on storage tank low water conditions.
- Purity is maintained with nonreactive wetted parts.
- Heavy duty, totally enclosed, split-phase induction motor.
- Motor starters not included; all external wiring by customer.

Versatile storage and distribution options for floor model electric and steam stills

Thermo Scientific Barnstead Classic Stills Storage Reservoirs and Accessories Specifications and Ordering Information

Tin-Coated Storage Reservoir Specifications						
Reservoir Options	Distribution Outlet (NPT)	Drain Outlet (NPT)	Overall Dimensions in. (cm)			Model Number
			W	H	D	
10 Gallon	1/2"	n/a	10.25 (26)	29 (74)	17 (43)	B3043
25 Gallon	1/2"	n/a	18 (46)	29 (74)	25 (64)	B3045
50 Gallon	1"	1/2"	22 (56)	36 (91)	28 (71)	B3046
100 Gallon	1"	1/2"	29 (74)	43 (110)	35 (89)	B3047
200 Gallon	1 1/2"	1"	38 (96)	50 (128)	45 (114)	B3049
Required Accessories						
Mounting Options Choose the mounting option that best suits your needs.	Floor Stands	For the 10 Gallon Reservoir	11 (28)	27 (69)	11 (28)	H1000
		For the 25 Gallon Reservoir	19 (48)	27 (69)	19 (48)	H1001
		For the 50 Gallon Reservoir	22 (56)	20 (51)	22 (56)	H1002
		For the 100 Gallon Reservoir	29 (74)	11 (28)	29 (74)	H1003
		For the 200 Gallon Reservoir	39 (99)	22 (56)	39 (99)	H3230
	Wall Brackets	For the 10 Gallon Reservoir				
For the 25 Gallon Reservoir					H3242	
UV Light Assembly Maintains water sterility in tank. Includes housing, on/off switch, 6 ft. cord, lamp and ballast.						H4005
Ventgard Air Filter and Water Seal						H3111
Replacement Consumables						
Replacement UV Lamp						04141
Ventgard Air Filter Protects stored water against airborne particulates, organics and CO ₂ .						H3120
Replacement Water Seal Prevents air from entering storage tanks via condenser atmospheric vent.						H3130
Ventgard Filter Element The consumable portion of the Ventgard filter assembly.						25001-DB

Boost Pump Specifications and Ordering Information					
Overall Dimensions W x H x D in. (cm)	Feed Water Pressure	Inlet Water Temperature	Voltages	Feed Water Flow Rate	Model Number
10.75 x 13.375 x 5.75 (27.3 x 33.9 x 14.6)	Gravity to 100 psi 6.9 bar	40-104°F 4-40°C	90-240 VAC, 75 watts 47-63 Hz, 1 phase	≥ 2 LPM	AY1268X1

Distribution Pump with Tin Bypass Specifications and Ordering Information								
Pump Motor (HP)	Speed (rpm)	Electrical (50/60 HZ) (VAC)	Phase	Pump Suction	Pump Discharge	Distribution Outlet	Bypass Return	Model Number
1/3	3450	115/230	1	1/2"	1/4"	3/4"	1/4"	H1110
1/2	3450	115/230	1	3/4"	1/2"	3/4"	1/4"	H1120
1	3450	115/230	1	3/4"	1/2"	3/4"	1/4"	H1130
1 1/2	3450	230/460	3	3/4"	1/2"	3/4"	1/4"	H1140



TYPE 2
Pure Water
Purification Systems



Applications include:

- Buffer/Reagent Prep
- Glassware Washing
- Dishwasher Feed



The inside of a Cabinetized Still.

Thermo Scientific Barnstead Cabinetized Stills
Fully enclosed distillation system

The Thermo Scientific Barnstead Cabinetized Stills include a still and an appropriately matched tin-coated storage tank in a compact storage cabinet. This space saving design uses less space than conventional units and allows for faster installation.

Product Features:

- Choice of two sizes; 2 or 5 GPH.
- Q-Baffle ensures high quality pyrogen free product water.
- Fully automatic operation allows for unattended operation. Still turns off when the tank is full and restarts when tank empties. Automatically drains the boiling chamber every time the unit is off and every 4 hours of operation, helping to keep your still clean.

Model 210 Still – 2 GPH with 10 Gallon Tank

- Purity meter alerts user of distilled water purity in storage tank.
- Includes low water cut-off for safety protection.

Model 525 Still – 5 GPH with 25 Gallon Tank

- Purity meter alerts user of distilled water purity in storage tank.
- Optional recirculation pump and base mounting stand available.
- Storage tank equipped with a UV lamp for improved bacterial control.

Quick Look Comparison		
	Model 210	Model 525
Flow Rate	2 GPH	5 GPH
Storage Tank	10 gal	25 gal

Thermo Scientific Cabinetized Stills Specifications and Ordering Information

Product Specifications								
System Options	Output GPH (LPH)	Voltage (50/60 Hz)		Amps	Phase	Wire	Dimensions W x H x D in. (cm)	Model Number
		Controller	Heating Element					
210 Still 2 GPH	2 (7.6)	120	240	26	1	2	24 x 41 x 15.25 (60 x 103 x 39)	A1065-B
	2 (7.6)	120	208	17	3	4	24 x 41 x 15.25 (60 x 103 x 39)	A1065-C
	2 (7.6)	120	240	15	3	3	24 x 41 x 15.25 (60 x 103 x 39)	A1065-D
525 Still 5 GPH	5 (19)	120	240	55	1	2	36.5 x 48 x 18.75 (91 x 122 x 48)	A1085-B
	5 (19)	120	208	36	3	4	36.5 x 48 x 18.75 (91 x 122 x 48)	A1085-C
	5 (19)	120	240	33	3	3	36.5 x 48 x 18.75 (91 x 122 x 48)	A1085-D
Optional Accessories								
Bench Stand For Model 210 only.								A1066
Floor Stand For Model 525 only. L x W x D in. (cm): 36 x 18.8 x 35 (93 x 48 x 89)								A1521
Recirculation Pump For Model 525 only. Floor stand (A1521) included.								A1522

Distillation 101

Distillation has the broadest capabilities of any single form of water purification

Distillation effectively removes most inorganic solids, all organics with a boiling point greater than water (100°C / 212°F), all bacteria and pyrogens. Gases and low molecular weight organics are not effectively removed by distillation.

Thermo Scientific Barnstead products include a broad range of stills

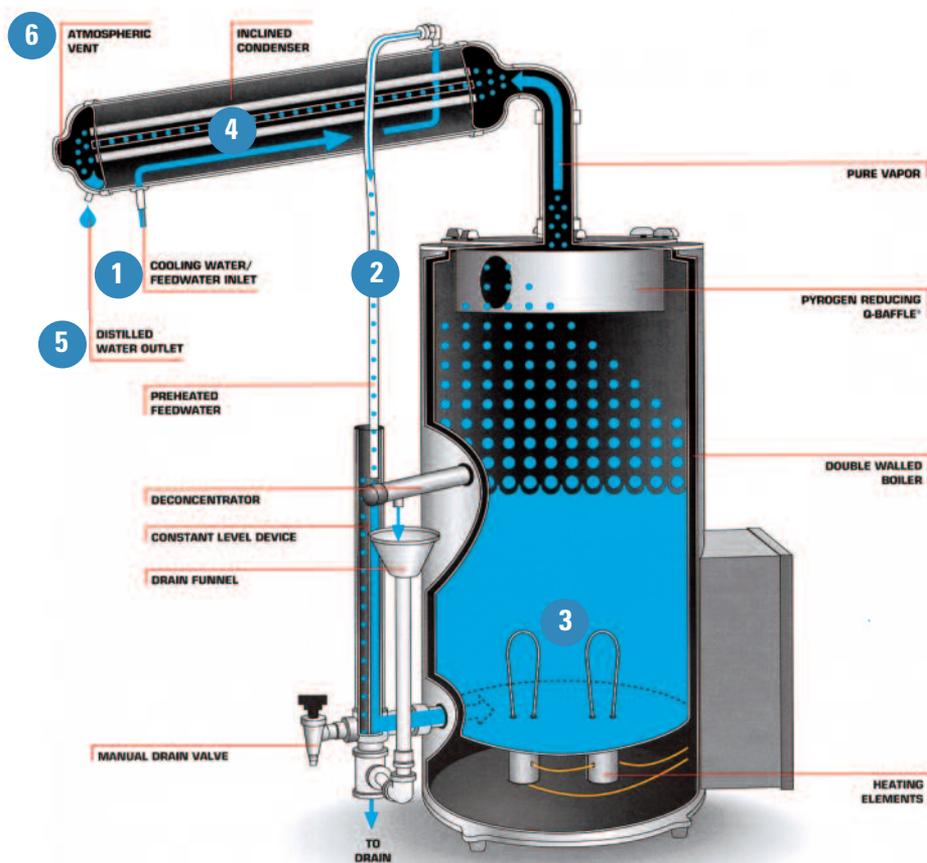
Our stills range in size from 1.4 to 38 LPH. Select from stills constructed of tin or glass. Many models offer fully automatic options or pretreatment options to minimize scaling.

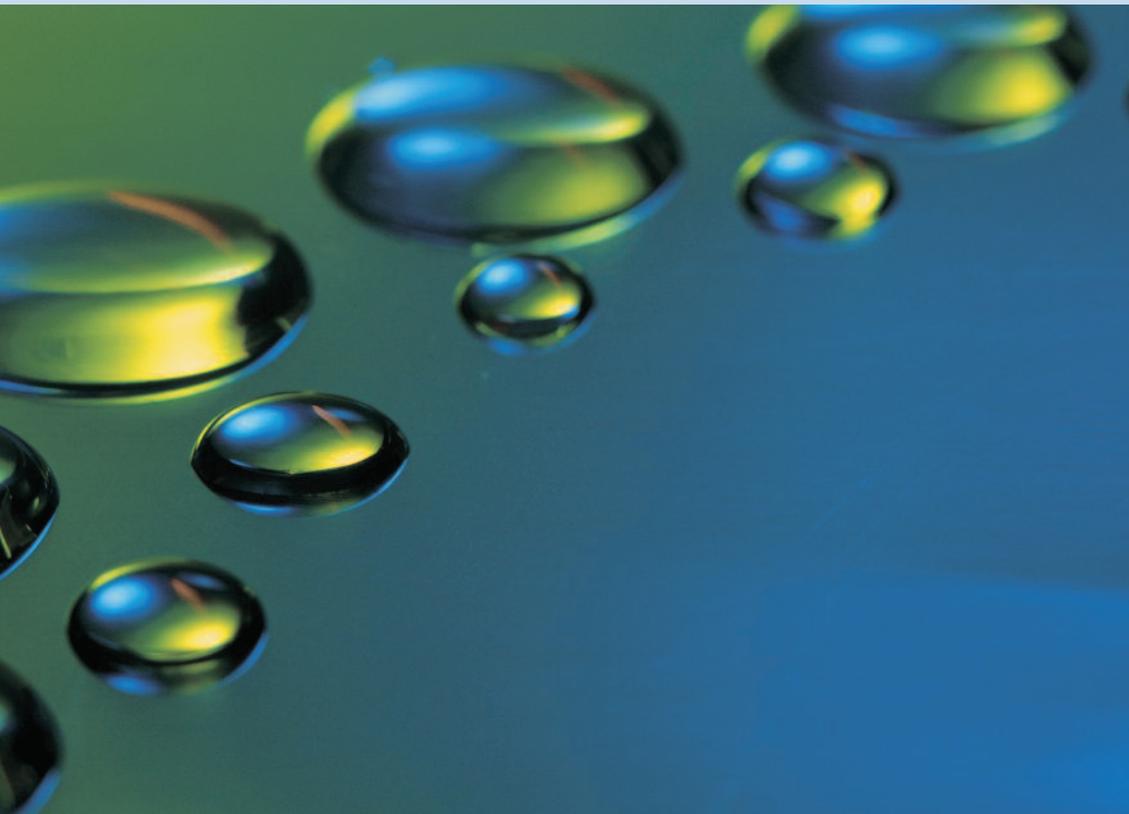
Step-By-Step Technologies Used in Distillation Systems

- 1 Feed water enters the still through the Cooling Water/Feed Water Inlet. As the water passes through the Inlet, it becomes warmed as it makes its way to the boiler. It in turn cools the vapor entering the condenser.
- 2 Water flows from the condenser into the constant level device, then into the boiler.
- 3 The water in the boiler is heated. Impurities with a boiling point higher than water (100°C / 212°F) remain in the boiler, while water and impurities with a boiling point equal to or lower than water are converted to water vapor. The pure vapor moves up the boiler through a pyrogens-reducing baffle and into the condenser.
- 4 In the condenser, the pure vapor is transported through the condenser where it contacts tubes or coils containing cooling water. The pure vapor contacts these tubes and coils and is condensed to produce pure water.
- 5 The distilled water exits the condenser and is stored in a reservoir through the Distilled Water Outlet.
- 6 Atmospheric vent allows for volatile contaminants to be vented, increasing the purity of the distilled water.

Still Components

A still includes a boiling chamber (boiler), electric or steam immersion heaters, pyrogen reducing baffle, condenser, constant level device and low water cutoff. Options include pretreatment solutions and fully automatic controls that allow stills to work automatically with pretreated feed water and a storage reservoir.





Thermo Scientific Nalgene and Nunc products give you many options to store your pure water. From carboys to lowboys, jugs to jerricans – Nalgene® and Nunc™ products come available in a variety of sizes and options to fulfill your pure water storage needs!

▶ *For further information, visit www.nalgene.com or www.nuncbrand.com*

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