



What is Distillation?

	Deionization	Distillation	Reverse Osmosis	
DISSOLVED INORGANIC SOLIDS	Excellent	Excellent	Good	
DISSOLVED GASES	Good	Poor	Good	
DISSOLVED ORGANICS	Good	Excellent	Good	
PARTICULATES	Poor	Excellent	Excellent	
BACTERIA	Poor	Excellent	Excellent	
PYROGENS	Poor	Excellent	Excellent	

Excellent
 Good
 Poor

What is Distillation?

Distillation differs from other forms of water purification because water is removed from the impurities rather than the impurities from the water. Water undergoes phase changes during the process, changing from liquid to vapor and back to liquid. It is the change from liquid to vapor that prompts a separation of water from its impurities. Impurities with a boiling point higher than water (100°C) remain in the boiler. Water and impurities with a boiling point equal to or lower than water are converted to water vapor. When this vapor is condensed, only water and a few substances that boil at lower temperatures remain.

How Well Does Distillation Work?

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), all bacteria and pyrogens. Gases and low molecular weight organics are not effectively removed by distillation. They undergo the same phase changes as the water and are often removed before or after distillation using other technologies.

What Types of Stills are Available from Barnstead?

Barnstead stills range in size from 1.4 to 38 liters per hour. They can be constructed of metal or glass. You can purchase a single distillation unit or a glass double distiller. Most laboratories in the world use distilled water.

Still Components

A still includes a boiling chamber (boiler), electric or steam immersion heaters, pyrogen reducing baffle, condenser and constant level device. Optional accessories include electric inlet valve, low water cutoff, electric drain valve and fully automatic controls which allow stills to work automatically with pretreated feedwater and a storage reservoir.