



ANR-790-2.4.5

ALABAMA A &amp; M AND AUBURN UNIVERSITIES

## Possible Treatments Distillers

**D**istillers produce almost pure water. They normally remove 99.9 percent of the dissolved minerals in the water. Since minerals add taste to water, distilled—or mineral-free—water has no taste. Aeration can improve the taste somewhat.

### How Distillers Work

Distillers kill bacteria and viruses by heating tap water to boiling in a tank. The steam produced rises and leaves impurities behind. The steam enters condensing coils where it is cooled by air or water and converted back to water. Distilled water then drains into outside storage or is dispensed from an interior storage tank through a faucet. Storage containers may be glass, metal, or plastic. Each type of storage container is satisfactory when cared for as the manufacturer directs.

### Contaminants That Distillers Remove

Distillers are capable of removing aluminum, arsenic, barium, cadmium, chloride, chromium, copper, fluoride, magnesium, iron, lead, manganese, mercury, nitrate, selenium, silver, sulfate, and zinc. Distillers are also effective in removing bacteria, giardia and cryptosporidium cysts, particulates, total dissolved solids, and turbidity.

Some volatile organic chemicals, such as some pesticides, can vaporize with the heated water, recondense, and end up in the processed water.

### Factors To Consider Before Buying A Distiller

**Maintenance.** Although the distiller has no parts to replace, it is not maintenance-free. Frequency of cleaning the distiller varies with the quantity of impurities in the water and the amount of water distilled. Hard water (high in calcium and magnesium) can quickly clog the unit. Scale must be removed from the boiling tank. White vinegar or a manufacturer's cleaner is used for cleaning.

Because distilled water is mineral free, it is very soft and corrosive toward metals. Thus distilled water may cause problems with the metal parts of a plumbing system.

**Cost.** The cost of producing distilled water depends on the appliance and the local electric rate. The electrical costs for distillation may result in maintenance or operating costs higher than alternative treatment systems. The level of water quality desired, the contamination of the water supply, the costs, and the available alternatives (bottled water) need to be evaluated before a distiller is purchased.

**Water Produced.** Distillation is slow. Typically, 2 gallons of input water yield about 1 gallon of distilled water after 4 to 6 hours. Large counter top distillers can distill about ½ gallon of water per hour. Small units produce less than 1 quart of water per hour.

**Health Effects.** Drinking only distilled water may lead to excess nutrient removal from your body.

### Distillers At A Glance

**How Distillers Work:** Boil water, collect vapor, and recondense it to remove impurities.

**Pros/Cons:** Slow in producing treated water. Vaporizes and does not remove volatile chemicals with a boiling point close to water.

**Maintenance:** Use acid cleaner periodically to prevent mineral buildup.

### References

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This publication, supported in part by a grant from the Alabama Department of Environmental Management and the Tennessee Valley Authority, was prepared by James E. Hairston, *Extension Water Quality Scientist*, assisted by Leigh Stribling, *Technical Writer*.

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UPS, **New June 1995**, Water Quality 2.4.5