

# Emergency Preparedness Initiative

## Water: Making it Drinkable

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### Water – The Universal Solvent

In its purest form, water is one of the most aggressive solvents known and will dissolve a material until the solution reaches saturation. Because of this attribute, water always contains something in solution. There are several methods to make water safe for drinking.

Water that has been **disinfected** may still be **polluted** with other contaminants (chemicals, drugs, heavy metals, etc.) that are not affected by common disinfection treatments.

**Water Disinfection** can be achieved by:

- Boiling
- Chlorination
- UV treatment
- Macro/Micro-filtration

### Filtration:



Modern filtration systems can remove many common pollutants. As an example, this premium 28oz filtered bottle removes up to 99.99% of pollutants and contaminants found in drinking water sources using a proprietary Ionic Adsorption Micron Filtration System. Use anywhere, anytime for great-tasting, safe, fresh water. It would be a great addition for your EP Kit. Available at <http://www.watergeeks.com/>. This system is good to use after all the chunks have been removed (pre-filtered).

Water Geeks, as well as several other places sells chlorination tablets.

PUR 3-phase filter (<http://www.purwater.com/#/products>) and to some extent Brita (<http://www.brita.com/us/>) water filters are also a good resource, either the on-tap (100 gal rating) for municipal water or the low tech, gravity flow filtration pitchers (40 gal rating).

### Boiling:

In an emergency, boiling is the best way to purify water that is assumed or considered to be unsafe to drink because of the potential presence of protozoan parasites or bacteria.

Heat kills microorganisms, and virtually all entero-pathogens are readily killed at temperatures well below the boiling point. The process of heating water to a boil makes it hot enough long enough to disinfect it.

There is no need to boil water for 5 minutes, 10 minutes, or 20 minutes, as some guide books or survival manuals recommend. **Bringing water to a rolling boil is adequate for disinfection.**

If the water is cloudy, it should be **filtered before boiling**. Filters designed for use when camping, coffee filters, towels (paper or cotton), cheesecloth, or a cotton plug in a funnel are effective ways to filter cloudy water.

If your EP Plan is to boil water that you locate for the purpose of making drinking water, then the ability to do that is the next thing that has to be planned for and included in your EP Kit. >>> Think camp stoves and cooking pots.