

### What Does an Ultraviolet System Do?

Ultraviolet (UV) water purification lamps produce UV-C or “germicidal UV”, radiation of much greater intensity than sunlight. Almost all of a UV lamp’s output is concentrated in the 254 nanometers (nm) region in order to take full advantage of the germicidal properties of this wavelength. Most ultraviolet purification systems are combined with various forms of filtration, as UV light is only capable of killing microorganisms such as bacteria, viruses, molds, algae, yeast, and oocysts like cryptosporidium and giardia. UV light generally has no impact on chlorine, VOCs, heavy metals, and other chemical contaminants. Nevertheless, it is probably the most cost effective and efficient technology available to homeowners to eliminate a wide range of biological contaminants from their water supply.

UV water treatment offers many advantages over other forms of water treatment for microbiological contaminants. Most importantly, it does not introduce any chemicals to the water, it produces no bi-products, and it does not alter the taste, pH, or other properties of the water. Accordingly, in addition to producing safe drinking water, it is not harmful to your plumbing and septic system. Further, it is easy and cost-effective to install and maintain without any special training.

### How it Works

Ultraviolet purification uses a UV light source (lamp) which is enclosed in a protective transparent sleeve (usually quartz). The lamp is mounted such that water passing through a flow chamber is exposed to the UV-C light rays. When harmful microbes are exposed to UV rays, their nucleic acid absorbs the UV energy, which then scrambles the DNA structure of the organism. The UV treatment is an excellent choice to eliminate biological contamination from most home drinking water, whether your home is on a municipal water system or untreated private system (well, lake water, etc.). Its sole purpose is to kill harmful biological contaminants, and therefore should always be combined with other forms of filtration (GAC/carbon block, KDF, or reverse osmosis).



**Ultraviolet Purification Systems**