

Ultra Violet Sterilizing Water Purification



Ultra-violet (UV) light kills disease-causing micro-organisms such as Ecoli with a 99.9% effectiveness. UV sterilization adds nothing to, and removes nothing from the water and is extremely cost effective by volume. UV Water Sterilization technology seeks to use the same process as nature to provide drinking water that is completely safe.

By exposing contaminated water to high intensity UV light, disease causing micro-organisms are rendered harmless and the water produced is safe, clean and fresh.

In nature, the sun produces UV rays which have a germicidal effect on disease causing pathogens in water. When these contaminants are exposed to UV light, they are rendered harmless and the output water is considered disinfected.

Additional water filters are available for any system to filter out sediments, odors, bad tastes water sterilization units will provide an adequate UV dose to kill the following contaminants among many others:

- Ecoli
- Salmonella
- Legionella Pneumophilia
- Mycobacterium Tuberculosis
- Poliovirus
- Hepatitis
- Cholera
- Streptococcus

UV water sterilization is used in a wide variety of applications around the world including:

- Residential Water Supply
- Cottage Water Supply
- Industrial Process Water
- Laboratories
- Bottling Plants
- Food Processing
- International Travel
- Municipal Water Treatment
- Military Camps
- Relief Agency Camps
- Emergency Preparedness

UV sterilization affects waterborne contaminants and disease causing pathogens with a 99.9% kill rate. The result is high quality water exceeding all health department standards.

Factors Affecting UV Treatment:

Because UV does not leave any measurable residue in the water, it is recommended that the UV sterilizer be installed as the final step of treatment and located as close as possible to the final distribution system. Once the quality of the water source has been determined, you will need to look at things that will inhibit the UV from functioning properly (i.e. manganese, TDE, turbidity and suspended solids).

Iron and Manganese will cause staining on the quartz sleeve and prevent UV energy from transmitting into the water levels as low as 0.03 ppm of iron and 0.05 ppm of

manganese. Proper pre-treatment is required to eliminate this staining problem. Total Dissolved Solids (TDS) should not exceed approximately 500ppm. There are many factors that make up this equation, such as the particular make up of the dissolved solids and how fast they absorb the available UV energy. Calcium and magnesium, in high amounts, has a tendency to build up on the quartz sleeve, again impeding the UV energy from penetrating the water.

Turbidity: is the inability of light to travel through water. Turbidity makes water cloudy and aesthetically unpleasant. In the case of UV, light levels over 1NTU can shield micro-organisms from UV energy, making the process ineffective.

Suspended Solids: need to be reduced to a maximum of 5 microns in size. Larger solids have the potential of harboring or encompassing the micro organisms and preventing the necessary UV exposure. Pre-filtering is a must on all UV applications to effectively destroy micro organisms to a 99.9% kill rate.

