

## **Ultra Violet Sterilizers**

At one time or another someone is going to approach you with the term U.V. Do you have one on your tank is usually the question you will be asked the first time you go into a store complaining about parasites in your tank. The average person looks at the salesman like he is crazy. U.V. what is that? The purpose of this article is to explain the benefits of owning an ultraviolet sterilizer and to help you understand how they work.

Ultra violet is described in Websters dictionary as "having a wavelength shorter than those of visible light and larger than those of x rays." The ultraviolet is actually a fluorescent bulb which emits light or a radiation into the water. Because U.V. is harmful to your eyes the light is contained in a pvc tube and the water is than passed right over the bulb itself. If there is a sleeve between the bulb and the water it must be quartz so it doesn't block out any rays. Now we know what it looks like so lets see how it actually works.

The bulb in your commercially bought unit is a germicidal type which produces an energy in the wavelengths of 2537A. This is the most effective wavelength to kill virus, bacteria, fungi, and small protozoa. In other words as the water passes through your ultra violet light the energy from the bulb actually disrupts the DNA of the cell which in turn kills the bacteria and parasites.

The efficiency of the U.V. is determined by the proper wattage rating for the flow you are going to run across the bulb. Calculate your flow rate at 20-30 gallons per hour/watt, for a maximum flow. For example a 15 watt U.V. can handle a maximum flow of 450 g.p.h. A few other determining factors of effectiveness is the age of the bulb and the clarity of the water. The maximum effective life of a germicidal bulb is one year. Usually you are going to have a large drop in effectiveness after six months. Your ultraviolet light should be put in line after all other filtration because the cleaner the water the more effective the kill.

When you get your new U.V. hooked up the biggest advantage you will find is that if one fish does get a parasite the U.V. will contain them. The parasite will not pass to all of the

other fish in the tank. The bacteria that will be killed will keep your fish much healthier also. The effectiveness of the U.V. will far outweigh the initial cost and the fish you save will pay for the ultraviolet. Sounds like a good investment on your money.