

THE PROPERTIES OF OZONE

OZONE: WHAT IS IT?

Ozone (O₃), one of nature's basic elements, is a very powerful disinfecting and deodorizing gas consisting of oxygen (O₂) with an extra oxygen atom attached, therefore becoming ozone (O₃). When oxygen in the air is exposed to high intensity ultraviolet rays, ozone is created (such as our sun creating the ozone layer). When ozone does its job, it oxidizes by giving up and attaching its extra oxygen atom to anything that can be oxidized. Once this process occurs, the ozone molecule becomes oxygen (O₃ - O = O₂). Thus, the only by-product of ozone is pure oxygen. In fact, ozone reverts to pure oxygen quite rapidly and naturally. The half life of ozone in air is on the order of hours and on the order of minutes when dissolved in water. Additionally, ozone dissolves over 12 times more readily into water than pure oxygen, and then reverts to oxygen, providing hundreds of times more dissolved oxygen in your water than could otherwise be possible. This high oxygen content of your water provides many of the benefits made possible with the Triple O system.

UV OZONE VS CORONA OZONE

Corona Ozone is created with a high intensity electrical discharge and usually creates a lot of ozone at one time (on the order of multiple grams per hour). In addition, the air must pass through a dryer and filter or Nitric Acid will be produced thus decreasing output and corroding the equipment. Drying the air uses electricity, is complex, and therefore not very reliable for home use. If the air dryer fails, so will the ozone system. Also, applications of corona ozone must be done carefully as high concentrations of ozone can literally destroy common holding tanks and distribution systems. When using corona ozone, stainless steel tanks are recommended, as well as, an activated carbon filter to remove the high residual ozone in the water.

UV Ozone creates ozone with the use of a high intensity ultraviolet light and creates low levels of ozone (on the order of grams per day). Since there is no need to dry the air, the power draw is very low (about 50 watts) and there is no worry about destroying equipment. When air flows through the UV Light, a portion of the oxygen is converted to ozone. Although this method produces much less concentrated ozone than the corona method, it is very effective when applied in a holding tank situation where the water is being continually filtered, circulated and ozonated over a long period of time. This system is both reliable and homeowner friendly (unlike the corona) due to its simplicity, safety and lack of maintenance requirements. Ours is the original system that ozonates and filters the water repeatedly and is based on the same technology as the larger and more costly municipal ozone treatment plants.

ADDITIONAL BENEFITS OF UV OZONE:

Triple O Systems has selected UV ozone technology for use in treating tank water because of its unique properties to:

1. Oxidize and coagulate iron and manganese making it easy to remove via filtration.
2. Reduce build-up of these contaminants in pipes and water heaters, and eliminate staining of fixtures.
3. Remove odors associated with hydrogen sulfide.
4. Control bacterial growth better than chlorine.
5. Control algae growth and prevent stagnation.
6. Provide a safe, non-corrosive level of ozone for mini-municipal or residential usage.
7. Leave no residue or hazardous bi-products such as the bromated ion.
8. Operate at low energy consumption making it very cost effective.

