



*How VICR Drives Results*

## The Technology Behind POOL TIGER

Pool Tiger was designed to harness water's complex properties as simply and effectively as possible.

### POOL TIGER STANDS ALONE

Virtually all water treatment systems are designed to introduce a substance or a form of radiation into the water in order to eliminate impurities.

#### TYPES OF PURIFIERS

Ozonator

Ionizer

Ultraviolet

Saltwater

Chemical

#### INTRODUCES

Ozone

Minerals

UV radiation

Salt>Chlorine

Chlorine or Bromine

These systems typically require electricity or the replacement of substances or components, or both.

Pool Tiger is unique among treatment devices because it is designed to continuously catalyze a process that requires nothing more than flowing water. Pool Tiger's simplicity is its key differentiator.

### ABOUT WATER

Due to its necessity in sustaining life, most of us are well aware of water's basic physical characteristics and properties.

- Symbol – H<sub>2</sub>O
- Boiling point – 212 degrees Fahrenheit
- Freezing point – 32 degrees Fahrenheit
- Earth surface – 70% water

However, water is also a complex molecule whose capabilities are not widely understood. It

- Converts easily from liquid to gas and from gas to liquid
- Can remain fluid down to -40 degrees Fahrenheit
- Is a veritable universal solvent
- Has a unique ability to absorb infrared energy in the 290 nanometer region of the spectrum

The properties noted in the first and last bullet points above are critically important to the processes which form the basis of our Pool Tiger technology. There are 2 key processes. The first is what we call “Velocity Induced Catalytic Reaction” (VICR).

## VICR

Water mechanically driven by the pool pump flows into a specially-designed and patented nozzle which forces it to accelerate. As it does so, a significant drop in pressure is noted and a portion of the liquid transitions to a vapor state. Vapor, being a gas, takes the form of a bubble when submerged. In essence, the vapor bubble formation represents a transfer of energy from the pump.

The vapor bubble is a highly-excited water molecule, whose binding charges are severed by the energy. As the vapor bubble moves back to a high pressure state, it collapses against the catalyst. The stored energy is released in the form of heat that reaches approximately 5000 degrees within the catalyst matrix. The catalyst provides an electron to the unstable singular water molecule. This allows the singular water molecule to become highly ordered and to absorb the infrared energy released during the transition from vapor bubble to liquid.

The resulting combined heat and sonic signal produces a unique environment which is extremely hazardous for any algae, bacteria, viruses, parasites or other organisms present during the transition. This heat also initiates the decomposition of acids present in the water, which serves to naturally balance the water’s pH. In addition, suspended and dissolved solids present in the water become highly charged and agglomerate to form much larger particles which drop out of suspension or are captured by the pool filter. This clarifies pool water and significantly reduces buildup on pool surfaces.



## EZ

Another driving force created during the VICR process is a change of the energy state of the water molecule. The infrared energy created during the vapor transition causes the water molecular matrix to absorb free protons and become highly negatively charged. As these molecules come into contact with hydrophilic surfaces, a highly ordered water state known as Exclusionary Water begins to form in the zone next to these surfaces (Exclusionary Zone or EZ).

This EZ water is so negatively charged that it excludes any foreign material from the EZ zone. All dissolved materials, algae and salts are forced from the zone into the bulk water zone (the water not adjacent to pool walls).

This is similar to what occurs when water freezes. During freezing, the water becomes highly ordered and excludes salts and foreign products.

## OTHER APPLICATIONS

Because it was designed to consistently harness some of water's more complex properties, the technology behind Pool Tiger is extremely reliable and can be effectively utilized in a number of other applications, including cooling towers, water recovery, waste water treatment, oil-water separation and others too numerous to mention.