

## Buyer Beware

Chlorine alternative disinfection technologies for swimming pools and spas is a huge industry. Many chemical alternatives to chlorine and electronic disinfection systems still may produce dangerous disinfection byproducts.

Do not be fooled by imitations. Intec was one of the first companies to commercialize this technology and has been selling it to consumers for over 36 years.

Feel free to contact us with questions regarding our technology or competing products. We want to educate you not only on our product, but on your pool water chemistry as well. The more you know, the more you will save, and the healthier you pool will become.



Do not jeopardize the health of your family. Trust Intec and its 36+ years of experience.

Chlorine Free  
Pool Systems

## Answers to Common Questions



**Intec**

America Corporation

800-896-1759

[www.Intec-America.com](http://www.Intec-America.com)

INTEC AMERICA CORP  
[www.Intec-America.com](http://www.Intec-America.com)



1047 Millerville Road  
Baton Rouge, Louisiana 70816  
Phone: 800-896-1759  
Local: 225-923-2892  
E-mail: [sales@Intec-America.com](mailto:sales@Intec-America.com)

## Transition Metal Ionization (TMI)

There is sufficient evidence that transition metal ionization can offer superior disinfection capabilities over currently utilized methods without producing harmful disinfection byproducts.

### How TMI Works

The biocidal effect of copper ions stems from a combination of mechanisms. These positively charged metallic ions attach to the negatively charged algae or bacteria cell membrane and causes cell lysis and death. Metal ions will bind to the sulfhydryl, amino and carboxyl groups of amino acids, thereby denaturing the proteins they compose. This renders enzymes and other proteins ineffective, compromising the biochemical processes they control. Cell surface proteins necessary for transport of materials across cell membranes also are inactivated as they are denatured. When copper binds with the phosphate groups that are part of the structural backbone of DNA molecules, the result is the unraveling of the double helix and consequent destruction of the molecule. Unlike chlorine, transition metal ionization does not result in dangerous halogenated organic by-products such as trihalomethanes, chloramines and chloroform. Also, copper ions are stable, making it easier to maintain an effective residual. Furthermore, the ions will remain active until they are absorbed by a microorganism.

### Health Benefits of Copper

The health benefits of copper are well documented. The trace mineral copper helps prevent anemia, bone and skeletal defects, a degeneration of the nervous system, defects in the color and structure of hair, reproductive problems, and abnormal cardiovascular problems. Also, copper is as important as calcium and zinc for bone formation, red blood cell integrity, skin and immune functions, nervous system functions, propagation of oxygen throughout the bloodstream, and the conversion of beta carotene into vitamin A.

### Q. What is an Ion?

A. Ions are positively charged atoms.

### Q. What is Ionization?

A. The electronic release of copper ions.

### Q. How does Ionization work?

A. A safe low voltage DC current is applied to the copper electrodes. As the ions attempt to move from one electrode to the other, many of them become suspended in the water.

### Q. How does copper ionization purify water?

A. Copper ions have the ability to pierce the protective outer membrane of a cell and disrupt enzyme balance thereby killing algae. Although lethal to bacteria and algae, this process is completely safe for humans. A multitude of scientific tests have been done proving the effectiveness of copper systems over chlorine. Experimentation at the University of Arizona proves that such mineral ions, in conjunction with trace chlorine are 1,000 times more effective against algae than chlorine alone.

### Q. Is ionization all that you need for your water?

A. Copper ionization completely purifies water. It is usually necessary to add an oxidizing agent (bleach or non-chlorine shock) periodically to help break down excess organic debris, silt and body oils etc. A light flocculating agent may be used in the place of an oxidant that will coagulate particles too small to be filtered out normally.

### Q. Is ionization safe?

A. Not only is it safe, but the minerals used for water purification are recognized as essential minerals to the body. Normal concentration in spas and hot tubs is about 1/3 the amount allowed by the Environmental Protection Agency for drinking water.

### Q. How is ionization safer than chemicals?

A. Most, if not all of the chemicals used to purify water are caustic and / or toxic, many of which are now thought to be carcinogenic.

### Q. How is ionization better than chemicals?

A. The need for high levels of chemicals is elimi-

nated. Also eliminated are the strong chemical odors, damaging effects on hair, skin, fabrics, liners, and spa equipment.

### Q. What are the operational costs?

A. In most cases, the electrodes will last two to five years and are relatively inexpensive to replace. The only other cost is the electrical consumption which is only a few dollars a year.

### Q. How often will I have to test the water?

A. You will need to test the pH level every few days to ensure proper water balance. You should test for copper residuals at least once a week. The ion system is pH neutral so it will not change your water balance like chemicals do. Calcium hardness will need to be tested twice a year.

### Q. Will ionization damage my plaster or vinyl liner?

A. Absolutely not. As a matter of fact, it will last longer due to the fact you are not using strong oxidants. Typically it will increase the surface life of your liner/plaster three fold.

### Q. Will the system cause staining of plaster?

A. Stains are caused from dissolved organic and inorganic materials in the water molecule and by a low pH. Scale, which is often confused with staining, is caused by a high pH. Any pool disinfection method could cause staining or scale if your water chemistry is not in balance. However, Intec uses only highly purified copper which is more effective at disinfection than what our competitors utilize. Also, our disinfection levels are almost 1/3 of the level set by the EPA for staining concerns making it theoretically impossible.

### Q. Does your system use salt?

A. No. This is not a salt water chlorinator which converts sodium chloride (salt) into sodium hypochlorite (bleach). Although very popular, corrosion issues related to the salt are a common complaint and growing concern.