



The Most Automatic and Cost Effective Way to
Enjoy Sparkling Clear Pool Water.



Uses an advanced electrolytic process that emits small amounts of copper and silver ions into your swimming pool for the purpose of bacteria, bio-film, and algae control, while reducing the hazards associated with chemical dosing.

All products are environmentally safe, user friendly, cost effective and are listed and certified by U.L. laboratories, N.S.F. International and E.P.A registered.



Background Information

Chlorine and Water Purification

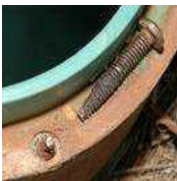
Chlorine introduced into water as a gas, liquid or powder is volatile and evaporates from water readily, making it almost impossible to keep the required level throughout the water.



The stabiliser (Cyanuric acid) is highly toxic and tends to rise to an unacceptable level if used regularly. Contact time to kill bacteria is short but only if correct and effective free available chlorine concentration can be maintained. This is difficult because bacteria and viruses are commonly found growing and rapidly multiplying out of control. Many species of harmful organisms can build up strong resistance to chlorine making matters worse.



Chlorine in water is corrosive; damaging to pool surfaces, such as concrete, plaster and tooth enamel and hair. As chlorine breaks down, it produces chloramines which cause irritation including stinging eyes and sore noses, and other less widely known allergic reactions. There is also growing evidence that suggest that these chloramines may be carcinogenic (cancer producing).



To add to the difficulties of maintaining safe and effective chlorine levels, it is widely recognised that chlorine is broken down and destroyed by ultra violet radiation in ordinary sunlight. This factor is obviously worse in summer climates. Chlorine will also disappear rapidly from warm pool water by normal evaporation. The warmer the water, the faster it goes. Hence, the considerable perils of hot tubs and spas. Because of this, the water surface (where all the mucous, skin and cosmetic/sun oils accumulate, and in which bacteria proliferates) is not evenly disinfected.



Therefore, chlorine is often used at very high levels and is rarely adequate.

Ionization



Developed to overcome the discomforts and disadvantages associated with disinfection by chlorine. Ionization is a natural approach to a well known problem of water purification, having been researched for NASA by several large companies in the mid-sixties.



The purpose was to recycle body wastes and minimize the space required for storing drinking water. Since its original development, this purification method has been used by airlines, breweries, soft drink bottlers, offshore drilling rigs and resorts.


The systems' method of water purification is based upon the age-old principle that copper and silver is lethal to algae and bacteria. This process is quite simple. Ion generation begins at the solid-state control unit which sends a low voltage current to the electrodes housed within the flow cell or ion chamber, (see right). The voltage range is between 0 and 15 volts. There is NO electrical current in the pool water. Once the system is commissioned, the concentration of ions builds quickly within the system, producing a long and stable disinfecting residual that is unaffected by heat, sunlight or evaporation. The disinfection action is attributed to the positively charged ions which form electrostatic bonds to the negatively charged sites on the micro organisms and then undergo reactions at the cell surface, crossing the cell membrane and beginning the inactivation process. The dead matter then flocculates, or clumps together, and is then carried away to be filtered out of the water.



Water Purification Systems and Performance
Swimming Pool Purification Systems – Pros & Cons

SYMPTOMS	CHLORINE	SALT	
Eye Irritation	YES	YES	NO
Eye Infection	YES	YES	NO
Ear Infection	YES	YES	NO
Skin Irritation	YES	YES	NO
Allergic Reactions	YES	YES	NO
Hair Damage	YES	YES	NO
Breathing – Toxic Effect	YES	YES	NO
Destroys plant life around pool area	YES	YES	NO
Damage to Clothing	YES	YES	NO
Damage to Storage Area	YES	NO	NO
Damage to Pool Hardware	YES	YES	NO
Damage to Pool Surface	YES	YES	NO
Carcinogenic destruction of mucus membrane	YES	YES	NO
Ease of Operation	Test Daily and Add Chemicals	Adjust, Add Salt and Chemicals, Constant Cleaning	Simple Adjustment 8-10 times per year

Chlorine Vs. CrystalClear

CHLORINE	
Does NOT kill viruses	Kills viruses
Kills Bacteria	Kills Bacteria
Does NOT penetrate large groups of bacteria held in mucus (saliva)	Penetrates and splits groups of bacteria. Splitting kills bacteria instantly.
Creates chloroform (a known carcinogen)	No chloroform created
Absorbs through the skin	Is NOT absorbed through the skin
Very TOXIC to lungs	Is NOT TOXIC
Difficult to handle	No handling necessary
Bleaches clothes	No bleaching of fabrics
Requires daily maintenance	Little or no maintenance
Water tastes unpleasant	Water is clear and tasteless
Water smells of chlorine	Leaves no odour
Chemicals stay in suspension	Ions DO NOT burn out
Daily pH adjustment	Weekly pH adjustment
Can cause allergic reactions and skin rashes	NO allergic reaction or skin rashes
Irritates the eyes	NO eye irritation

The Residential, In and Above Ground Pool Solution The IoCare System



IoCare Control Unit & Flow Cell



The IoCare System uses **copper and silver ionization** to treat pool water. The contact time of silver, aided by the synergistic (reinforcing) effect of copper will kill bacteria and viruses within minutes, and they are completely **unaffected by temperature or sunlight**.

The IoCare System is used **with** traditional pool and spa sanitisers, (chlorine and bromine), the **dual disinfecting action** will guarantee user safety and at the same time **reduce the amounts of chlorine normally used by up to 94%**, providing a substantial cost saving. The recommended level of chlorine/bromine to be used in conjunction with the IoCare System is 0.2-0.4ppm.

The IoCare System has many advantages over traditional 'chemical only' water treatment. It does not accelerate corrosion rates, as do most oxidizing agents, and can actually reduce the use of these chemicals up to **94%**. Savings in chemical use and time offer the end user rapid pay backs. The IoCare System offers maximum benefits related to residential pools, commercial pools, spas and fountains. By **reducing chlorine residuals**, enhanced bather comfort can be realised in conjunction with effective disinfection and algae control. The reduction of chlorine used in indoor pools also reduces the amount of surface corrosion that is common-place within these facilities.

A very stable and effective concentration is **easily maintained**. Algae and other organisms, in or with which bacteria and viruses symbiotically live, are killed outright. A simple poolside test indicates the active level of residual ions in the water. An **output control** is provided on the unit for adjustment of this level as and when required. Unlike most halogens and biocides, ions provide a stable, measurable disinfecting residual that is **unaffected by water quality, heat or evaporation**.

The levels of copper are insufficient to harm humans, pets or plant life, plants in fact need copper for healthy growth. The Environmental Protection Agency requirement for copper in drinking water is 1.0ppm or less. The **IoCare** System maintains a copper level of between 0.3 and 0.4ppm. The pH factor for the ions to work at maximum efficiency is between 7.2 and 7.6, with the ideal being 7.4.

The Residential, In and Above Ground Pool Solution The HealthCare System – 100% Chlorine Free



The **HealthCare** System is the most advanced water purification system available. It combines the algae and bacteria killing effectiveness of **ionization with the oxidizing effectiveness of ozone** in one simple-to-operate system.

At the heart of the **HealthCare** System is a specially sealed chamber housing two electrodes. This is called an 'ion chamber.' It is here that a safe, low electronic charge which produces a mineral ion (electrically charged atom particle) which 'attacks' impurities in the pools water. Mother Nature treats water in much the same way, as water rushes through mineral deposits lining the beds of rivers and streams. The solid state controller regulates the number of ions introduced by the ion chamber. Since the quantity of impurities in the water may vary from time to time, a weekly ion check is recommended.

Your dealer can demonstrate how quick and easy this is to do with the turn of a knob on the controller box. The **HealthCare** System automatically oxidizes the pool with ozone. **Ozone** is produced naturally by lightning storms or ultraviolet rays from the sun.

Advances in technology have made it possible to **combine these two processes into one complete treatment system**. The system has been designed to minimise the service and maintenance.

Your **HealthCare** System was engineered to provide you with maximum automation in the day to day treatment of your swimming pool, to ensure a safe and healthy pool for your use. The system has **joined** the benefits of **ionization** with its **long lasting stable residual** and **ozone, the strongest oxidizer available** for pool use.

Pool water sanitised by the **Healthcare** System has many advantages over chemically treated water. Along with freedom from the constant adjustments of chemicals, it is **non-toxic, non-corrosive, odourless and tasteless** and will not bleach your clothes or hair.

Water feels 'softer' to the touch. Environmentally, the **Healthcare** System is the right choice. There's no need to store poisonous and unstable chemicals harmful to plant and animal life. The **Healthcare** System is easily installed onto an existing filtration system, and costs only pennies-per-day to operate.

ELIMINATE THE HASSLE OF POOL CARE!

The Commercial Pool Solution **Commercial Pool Water Treatment System**



New public awareness has centred on the hazards of potentially harmful water born bacteria which can thrive in poorly disinfected commercial warm water environments. All commercial and swimming pools and spas are required to maintain a very high standard of disinfection at all times. Present methods would include chlorination or bromination, usually in conjunction with automatic feeders. The drawbacks to chemical disinfection are well known and include the handling and storing of toxic chemicals, the problems associated with varying and heavy bathing loads, as well as chlorine dissipation in sunlight.



The **Commercial** System of electronic water treatment safely and effectively treats water, eliminating a broad spectrum of bacteria's, viruses, algae, fungi, and yeast. It provides a **long term, stable, disinfecting residual** which continues to be effective even when pumps, filters and circulation systems are temporarily inactive.

The system employs an **electrolytic process** which has been proven beneficial for use in indoor and outdoor pools, fountains, decorative ponds, cooling towers, and a wide range of industrial applications. This unique state of the art process is **cost effective, environmentally safe, and user friendly**.

The **Commercial** System, which has been researched and proven in the United States, will, by carrying the bulk of the water purification and sanitizing load, **drastically reduce operating costs associated with conventional chemical treatments, while effectively killing algae, bacteria and viruses**. Further savings will result from reductions in maintenance costs as a direct benefit of reducing the corrosive effects of chlorine on plant and equipment. Ionized water is non-toxic, odourless, tasteless, non-corrosive, and stable, being unaffected by sunlight or high temperatures.



Has a **range of models** which can treat any volume of water. One or more standard units may be sufficient for a pool or spa; the particular model recommended will be governed by the bathing load and the volume of water involved. Our technical staff can design and build custom units for specific applications.

The system consists of a flow cell, which is simply inserted into the circulation system without interfering with the water flow, and a control unit which electronically regulates the precise output of ions into the water, as required. The ion residual is measured by using a simple, but accurate, pool-side test kit which is provided with the system.

All **Commercial** units are easy to operate and designed to deliver maximum performance without the "service intense" scenario which often plagues pool operators. The equipment is UL listed, for electrical safety, Certified by NSF International, for biocide efficacy, and registered with EPA.

Manufacturer's Certification

These CrystalClear products conform to the following standards:

.....U.L. listed for electrical safety

.....N.S.F. International Certified

.....Registered with the E.P.A. and meets all requirements

.....Meets the requirements of the National Electrical Code

.....American Society of Testing Materials (ASTM)

.....American National Standards Institute (ANSI)

.....American Society of Mechanical Engineers

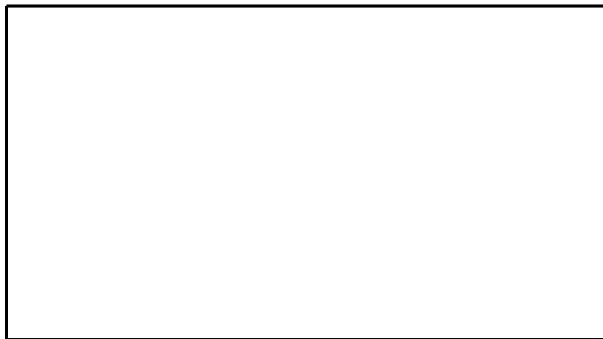
.....Uniform Plumbing Code 1994

.....Institute of Electrical and Electronic Engineers

.....National Electric Manufacturer's Association (NEMA)



Registered Dealer:



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