



## **Video Download of Swimming Pool Operation**

[www.ecosmarte.com/onlinesupport.htm](http://www.ecosmarte.com/onlinesupport.htm)

Username: ecosmarte

Password: customer2007

Congratulations on your new investment! The ECOsmarte Pool System will give you many years of a safe and pure swimming environment. Whether you are building a new pool, switching over from chlorine, baquacil, salt chlorine generator or another sanitation device, by choosing the ECOsmarte Pool System you have made an environmental and health statement with your purchase. With the ECOsmarte Pool System multiple forms of oxygen are delivered in grams per minute. The electronic oxidation and ionization delivered by the ECOsmarte Pool System inhibits algae and bacteria growth while providing the oxygen necessary to qualify as a stand alone sanitizer for the over 20,000 residential pools we have installed since 1994.

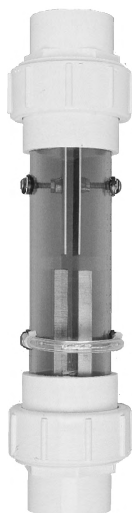
In Australia and Canada, your Government requires a 0.5 ppm free chlorine residual with the ECOsmarte copper ionization. This level must not exceed 1.0 with ECOsmarte. NO CYANIDE (Conditioner, Stabilizer) is to be used with the ECOsmarte Pool System. All other residential pools are to avoid the use of Chlorine.

**CONTENTS DIRECTORY NEXT PAGE**

***ECOsmarte Pool System Owner's Manual - X, 2011***



**TO POOL**



**WIRE HOOK-UPS**

**BLACK/WHITE**

Connect both to front side of chamber.

**RED/GREEN**



**Automated Systems**



The Electrode Chamber may be installed either horizontally or vertically with our Quick Change Unions. Install the Electrode Chamber between the pump and filter or between the filter and pool on the pressure side of your piping. The ECOsmarte Electronic Box can be installed indoors or outdoors. The Electronic Box is water resistant and comes with pre-wired leads to be connected to the Electrode Chamber. If installation requires additional wire, you may order it from your local ECOsmarte dealer.

**DO NOT LET YOUR CHLORINE LEVEL  
fall to ZERO prior to install.**

## **CONTENTS OF THIS MANUAL**

P. 3 Introduction  
P. 5 Start-Up Procedures  
P. 7 Water Vocabulary and Testing  
P.13 Closing Your Pool  
P.15 Maintenance

P.16-18 Installation  
P.19-22 Problem Solving/Guide  
P. 22-23 Compatible/Incompatible  
P. 24-25 Glass Pack® Filter Media  
P. 33 Free Electrodes for referral  
P. 34 Warranty Info: Fax, Scan, Mail

**SALTWATER and BROMINE POOLS  
must be drained and refilled**

# START-UP



As we begin to protect your water against algae and bacteria by ionization, the first seven days are critical.

You need to closely monitor two water factors in particular: pH and Copper. pH levels above 7.2 will render the copper ions ineffective and will prohibit accurate copper measurements. Copper ions are the algacide and bactericide in the water. The water in your pool needs a pH below 7.2. Ideally, begin ionizing after adjusting the pH to 6.8 and expect the pH to rise. The total alkalinity of the pool will fall as you lower your pH. Do not try to adjust the total alkalinity as we will be changing the water's chemical make-up of calcium to bicarbonate. You must confirm minimum calcium of 400 ppm.

**During Start-Up** the ECOsmarte Pool System will remove old sanitation chemicals in the water. This process will require you to backwash or clean the filter media until most of the toxic contaminant's have been removed. A slight increase in filter pressure indicates a load of toxins has been removed. Expect increases in filter pressure and pH rises during Start-Up (first 2 - 3 weeks). Switch the ECOsmarte Electronic Box to the Ionize position. After 24 hours of ionizing take a second copper and pH measurement (see TESTING YOUR WATER). Test the pH first and adjust it if necessary with muriatic acid diluted with water. Once your pool has achieved between 0.4 ppm and 0.7 ppm copper, switch the ECOsmarte Electronic Box to Oxidize. If your pool registered copper prior to installing the ECOsmarte Pool System, then ionize until you achieve 0.7 ppm, or until the false indicators have been filtered out of the pool.

At this point, your pool should have a copper residual of approximately 0.6 ppm, with chlorine or other "old" sanitation chemical approaching zero, and be ready to begin the WEEKLY MAINTENANCE cycle. If this is not the case, consult the PROBLEM SOLVING section of this document. A minimum level of 0.4 ppm is required to protect your pool. Swimmers, rainfall, evaporation and algae will cause your copper residual to decrease. Once your minimum copper residual is reached, your control box is always in the oxygen or "oxidize" mode unless your weekly water test indicates copper is below 0.4 ppm. If you go four calendar days and copper is below 0.4 ppm have phosphates, calcium, and pH values tested at local pool store. Add Phos Free™ if necessary, if over 1,000 ppb you may wish to use Sea Klear®.

**1-800-ION-SWIM or (612) 866-1200**

**FREE Five Minute Phone Orientation  
Available & Encouraged with All New Users.**

## PRELIMINARY STEPS

- (1) Stop using old sanitation chemical or device, but confirm levels.
  - (2) Backwash or clean filter thoroughly.
  - (3) Install ECOsmarte Electrode Chamber either horizontally or vertically.
- Note:** If chlorine is at zero put one quart Algacide 60 in the pool until you get copper to 0.4 ppm.

## CONVERSION STEPS

- (1) Lower pH to 6.8 - 7.2 range.
- (2) Measure copper, see TESTING YOUR WATER
- (3) Turn ECOsmarte Electronic Box to Ionize, High for all pools. Take second Copper test after 24 hours, test pH again.
- (4) It will take 48 to 72 hours of consecutive ionizing to get copper above 0.4 ppm.

## ELECTRONIC CONTROL BOX



To **ionize**, set the ECOsmarte Electronic Box in the ionize position. A single, circling light indicates power to the Electronic Box. A small glow-lamp diode at the Electrode Chamber indicates power to the electrodes.

You will **oxidize** as the default, unless a copper measurement indicates a need for copper ions. On average, oxidize 13 days, ionize 1 day, depending on your bather

load. ECOsmarte recommends turning the water over in your pool 1.5 times per-day, running the ECOsmarte Pool System only when filtering your water. When the Electronic Control Box is in the Oxidize position, your pool water will be oxidized as it passes through the Electrode Chamber.

The lights on the Electronic Control Box will indicate the mode of operation, confirm polarity shift, and alert you to certain problems. Under proper operating conditions a single light will circle whether in the Ionize or Oxidize mode, and a single steady light will appear next to the selected mode.

- (1) A mode light appears next to both Ionize and Oxidize positions regardless of mode selection, then power is feeding back from the selected electrodes to the other electrodes. This is caused by highly conductive water. As long as the lights are not blinking, leave unit in high mode; check again the second season.
- (2) One or more mode lights blinks, then water is extremely conductive. Switch Box to Low. Leave box on high if both lights are on but not blinking.
- (3) 98% or more of all systems run in high mode in either oxidize or ionize.

# WATER VOCABULARY

## pH

The technical term for the measure of acidity or alkalinity of water. pH is measured on a logarithmic scale from 0 to 14. At a pH of 7.0 and a water temp of 80°, water is neutral. A reading above 7.2 means the water is alkaline. A reading below 6.8 means the water is acidic. During the swimming season, check the pH level weekly and after heavy rainstorms. Everything that enters your pool has a pH value. Adjustments should be made to keep the pH within 6.8 to 7.2 range. Muriatic acid has an extremely low pH, and, consequently, is used to lower pH. Sodium bicarbonate, or baking soda, has a high pH and is alkaline. With the ECOsmarte Pool System it is important to maintain a pH within the specified range. The effectiveness of the copper ions depend on a neutral pH. Neutral pH at 85°F water temperature is 6.8. Water without chemicals will want to be neutral, and starting each week at 6.8 will give you best results.

## COPPER

The ECOsmarte Pool System generates copper ions. A body of water protects itself against simple organisms like algae, bacteria, and some viruses by maintaining a copper residual. Copper is lethal to simple organisms, yet beneficial to complex organisms like humans and animals.

## TOTAL ALKALINITY

A close cousin of pH, Total Alkalinity is a measurement of all the carbonates in the water: Carbonate, Bicarbonate, and hydroxides. The pool industry has yet to develop a true Total Alkalinity Meter. Available Alkalinity test kits measure the amount of carbonate alkalinity in the water. You have bicarbonate (soluble) calcium that does not register on traditional alkalinity test kits. The ECOsmarte Pool System will not cause corrosion if the alkalinity measurement is low (below 60). If you were using chlorine the water would become aggressive and potentially destroy pool equipment. Until an accurate means of testing true Total Alkalinity is developed ECOsmarte has a less scientific way of determining low Total Alkalinity. If the pool water is clear and refracts sunlight in such a way as to appear green your pool likely has low alkalinity. That is, the pool looks like lime jello or green grass; very clear and bright green. Low Total Alkalinity can cause "pH bounce." "pH bounce" shows itself as large changes in pH after additions of acid or alkali. High alkalinity causes pH to drift upward. Many of the ECOsmarte Pools balance at as low as 40 measured carbonate alkalinity. Again, true Total Alkalinity (carbonate and bicarbonate) cannot be tested with portable kits currently available.

**pH is alkalinity dependent; that is, alkalinity is defined as the ability of the water to resist changes in pH.**

## **CALCIUM HARDNESS**

Calcium hardness affects pool water quality. Low calcium hardness can promote pool corrosion. High calcium hardness can cause cloudiness. Ideal calcium hardness content is 400 ppm as measured by a suitable kit. The ECOsmarte Pool System will eliminate scaling in your pipes. Calcium hardness will need to be tested at start-up and if the pool is refilled. It should also be tested after extended days of heavy rain. ECOsmarte has many pools at 800 to 1000 ppm calcium hardness, and draining back is recommended at 2200-2900 ppm.

## **POOL STORE COMPUTERS: pH, CALCIUM & PHOSPHATES**

Can be a useful tool to double check your pH and calcium hardness. Do not however adjust alkalinity or copper based on the results. Alkalinity should be adjusted upward if the pool is crystal clear and "grass green" or "lime green" in color. Rely only on the Lamotte Copper test kit included with your ECOsmarte System to use the IONIZE mode and add copper to the pool.

**PHOSPHATES: Must be confirmed at ZERO once per year.**

### **TIPS FOR pH & ALKALINITY**

- For a reduction in Total Alkalinity experts recommend "pooling" the acid in a small area of low current. Normally, ECOsmarte Pools need no downward alkalinity adjustment.
- Upward alkalinity adjustments should be done in 4lbs increments per day of sodium bicarbonate. Any more and "pH bounce" may result, causing you to waste time and money on acid. Do NOT raise Alkalinity unless water is clear lime green, (or "grass green but clear.") - Adjust no higher than 80 ppm.
- Upward alkalinity adjustments can be made with sodium bicarbonate, baking soda or any brand of alkalinity enhancer. We recommend 4lbs max per day and DO NOT OVER ADJUST.
- For a reduction in pH, walk acid around the pool and distribute it to the entire pool, having diluted the acid with water in a 5 gallon bucket.

# TESTING YOUR WATER

The ECOsmarte Pool System requires you to measure two aspects of your water chemistry on a regular basis: (1) **Copper** Ions and (2) Potential Hydrogen (**pH**). Each test needs to be performed weekly.

## pH TEST

Maintain pH within the specified ECOsmarte Water Parameters. pH must be between 6.8 and 7.2. Any pH test kit should work fine. Follow the directions included with your kit. Remember to:

- (1) Fill the sample container with pool water from at least 18" below the surface of the pool. Avoid taking samples near the skimmers and return-jets.
- (2) Test pH before testing Copper ppm.
- (3) Hold tester at arms length (preferably out of direct sunlight) above the horizon. Look at the sample water and compare to the color standard included with the test kit. Read the pH value once match is obtained.
- (4) If a pH adjustment is necessary, use muriatic acid diluted with water in a 5 gallon bucket. (Dilution is to prevent "shocking" any metals out of solution). DO NOT USE DRY ACID. See pH TALK.

**NOTE:** We must also confirm minimum calcium of 400 ppm and 0 phosphates. While these tests are done less frequently, tests should be done after heavy rainfall or stretches of extremely high heat.

## pH TALK

- We can train your pH to remain Neutral. 6.8 to 7.2 is technically pH Neutral.
- The first two weeks after installation your pool may consume acid on a regular basis. This is not unusual. If high consumption continues into the fourth week, then possible nitrate and phosphate residuals are creating this problem and a percentage of water may need to be drained back. Consider PHOS FREE.
- Radical changes in pH are not recommended.
- Rule of Thumb: If your pool is 15,000 gallons with a pH 7.6 or above, add at least 1/2 gallon of acid; if your pool is 25,000 gallons or above, add at least a full gallon.
- Acid consumption will vary according to pool water. However, pH measurements are logarithmic. That is, your pool will need considerably less acid to move from 7.2 to 6.8, then it will to move from 7.8 to 6.8.
- DILUTE ACID BEFORE PUTTING IN YOUR POOL
- Consider CO2 injection if acid demand exceeds one gallon per week after 3 weeks of operation. During the first year after purchase, all swimming pool customers receive full credit on a trade-in to the automated CO2 system thru your ECOsmarte dealer.



## COPPER TEST

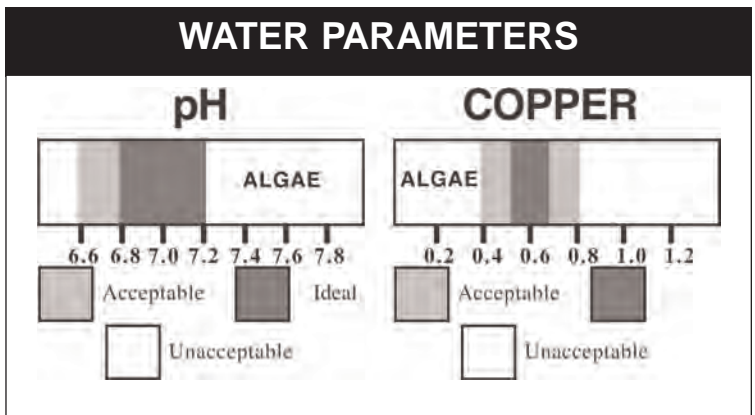
**Always test pH before Copper.** If pH is above 7.2, adjust pH level and wait for pH to come down. If pH is at 7.3 or above you will not get an accurate copper measurement. If the pH is above 8.0 you may create copper chloride (if there is still chlorine in your pool or your city "fill-water" is highly chlorinated) which can stain your pool and bathers. Neither condition is permanent or harmful, but both can be avoided by keeping low pH. Once free-chlorine and total chlorine reach zero, copper chloride cannot be created providing you do not add chlorine to the pool again. The Copper Test procedure for the EC-70 Liquid Copper Kit, is as follows:

- (1) Fill test tube with pool water to black line. Be sure to take sample from a level 18" or more below the surface of the water. Also, avoid samples near the skimmer and return-jets.
- (2) Add five (5) drops of Copper Reagent A to test tube. Cap and invert.
- (3) Remove cap and add five (5) drops of Copper Reagent B to test tube. Cap and invert.
- (4) Remove cap and place tube in test-kit holder. Allow to stand for approximately two minutes.
- (5) While holding the tube, place color standard chart 1/2" underneath the vertical tube. Measure the level of copper by looking directly down into the test tube at a white portion of the color standard provided with the kit. Match the shade of blue and record in parts per million.

**NOTE:** Magnets, metal removers, copper algaecides, sequestering agents, and other chelating agents will create false copper readings. See INCOMPATIBLE PRODUCTS.

## WATER TESTING VIDEO at [www.ecosmarte.com](http://www.ecosmarte.com)

If you have a pool party, rainstorm, or expect either, test your water.





# POOL TALK

## TURNOVER CYCLES

The ECOsmarte system requires 1.5 - 2 complete turnovers during daylight hours, or 6 to 10 hours for most in-ground or above ground pools. Auto-cover owners will get best results opening the cover on sunny days even though no swimming occurs (See p. 12).

## NO CHEMICALS

ECOsmarte recommends letting the Pool System work for you. In other words, be patient, the System itself will work. ECOsmarte understands circumstances exist where a "quick-fix" is necessary, or desired. In cases such as these the following is a list of compatible products. Note that the list is exclusive and anything outside the list is not recommended. Again, there is no need for regular use of any of these products.

**Non-Chlorine Shock** (Potassium Monopersulfate): Shock 'n Swim, Oxybrite, and Oxyclear.

**PhosFree or Sea Klear:** If phosphates are above 100 ppm

**Alum-based Flocculants:** Any, but use sparingly, and with phosphates

**Non-Metallic Algacide:** Any, but use sparingly. Any brand w / 40 or 60.

**Filter Cleaner:** TSP and Muriatic Acid

**Borax:** Use sparingly, if pH bounce or spotting have been a problem.

Requires use of acid immediately after using the Borax. 4 lbs per 10,000 Gallons.

## WHAT CAUSES ALGAE PROBLEMS?

There are over 21,000 known varieties of algae! Algae spores constantly enter the pool, brought in by wind, rain or even contaminated swimsuits or equipment. When conditions are right, an algae bloom can occur seemingly overnight. These conditions include imbalanced water, warm temperatures, sunlight, and the presence of nitrates. Of course lack of proper filtration, circulation, and sanitation may be the primary causes of algae. A suction vacuum is highly recommended with the Ecosmarte system, as is backwashing only after pressure rise of 6 lbs and before 10 lbs.

Algae is a living aquatic creature that multiplies rapidly in warm, sunny conditions. Containing chlorophyll, algae utilizes photosynthesis to grow. That is, they take in carbon dioxide and expend oxygen as a by-product.

The two main problems with algae are, first, people do not want to go swimming, and second, it takes time and money to rid the water completely of algae. Algae itself is not harmful to swimmers, but pools with algae may also be residence to other pathogens.

**REGULAR CHEMICALS ARE NOT REQUIRED TO RUN SWIMMING POOLS OR SPAS.**

Proper water balance and filter maintenance are necessary to prevent algae growth. Also regular brushing prevents dirt from harboring in the pores of your pool surface, where algae colonies like to start. The use of specialty chemicals or algaecides may be necessary as a back up to the ECOsmarte Pool System and existing filtration. Filtration upgrades will solve 99% of these problems.

Again, ECOsmarte recommends allowing the system to defeat algae on its own. You will want to adjust valving for optimum circulation and allow your pump and filter to run 24 hours a day until the pool clears (the ECOsmarte Pool System can be shut off after a single cycle of oxidation, providing Copper ppm levels are above 0.4). Turn on any automatic cleaners to stir things up. Continue to brush the walls. If the pool is real "swampy" algaecide 40 or 60 may be a good choice. If you cannot see the bottom of the pool and it is filled with leaves and debris, you must get all leaves and debris out to clean the water.

**1-800-ION SWIM can help with detailed advice.**

## CYCLE TIMES

- ECOsmarte pools should operate 24 hours per day the week you start-up and put in the initial ionization level (Cu 0.4 ppm to 0.7 ppm)
  - ECOsmarte pools should circulate 24 hours whenever your water does not look right.
  - ECOsmarte pools must circulate during daylight hours, 6 to 12 hours per day in the OXIDIZE or maintenance IONIZE mode.
  - Auto-cover owners should uncover the pool 2 hours minimum on sunny days for best results.
- 
- "Over oxygenation" can occur on 24 hour constant circulation after several weeks, so ECOsmarte only timing systems are recommended for edge pools and environments where 24/7 skimming and filtration is desired.

<u>SIZE OF POOL</u>	<u>MINIMUM FILTER</u>	<u>REQUIRED PUMP</u>
Less Than 24,000 Gallons	300 LB	1.0 HP
24-39,999 Gallons	600 LB	1.5 HP
40,000 Gallons & Above	900 LB	2.0 HP

# CLOSING

## CLOSING NORTHERN POOLS - FROZEN WATER

- Test pH and Copper. Lower pH to 6.8; Raise Copper to 0.7 ppm.

### DAY OF CLOSING

- (1) Drain water below skimmer level. You can achieve this by running your pump to waste through only the main drain.
- (2) Turn off pump. Disconnect power to Electronic Control Box and remove lead wires from chamber. Store Box indoors for the winter.
- (3) Lay out all winterization hardware (caps, gizmos, etc.).
- (4) Unscrew return jets, stand-by with jet plugs.

### RETURN LINES

- (1) Twist off ECOsmarte Electrode Chamber (store indoors). The 12" gap will be your "blow spot."
- (2) Using a shop-vacuum or other power blower, blow toward the return side of the piping from the "blow spot" with all returns open.
- (3) Close all return valves. Using the winter plugs, plug all jets finger tight except the nearest jet to the pump. Open return line nearest pump and blow air through that line, from the "blow spot." Repeat this procedure for each return line, re-plugging each jet after water is purged.
- (4) Carefully pour one gallon RV Anti-Freeze into the return side of the piping (most likely from the "blow spot"); blow Anti-Freeze through with shop-vacuum until you can see anti-freeze come out of the intended jet. Repeat this procedure for each line starting with the furthest jet and working toward the pump.

### PRIOR TO SUCTION SIDE WINTERIZATION

- (1) Remove drain plug from hair and lint basket (sump). Allow to drain completely.
- (2) Remove drain cap from filter (if sand filter, remove smaller of two caps).

### SKIMMERS

- (1) Close skimmer and main drain valves.
- (2) Working from the suction side of your pool piping, open and blow out skimmers, one at a time, from the nearest skimmer to the furthest. Close skimmer valves after blowing.
- (3) Pour one gallon RV Anti-Freeze directly into each skimmer.
- (4) Plug skimmers. If Gizmo is not used, leave an empty plastic Anti-Freeze jug in skimmer cavity (plastic jug will absorb winter expansion).

All ECOsmarte pools use two winterizing principles:

Lower pH to 6.8;  
Raise Copper to 0.7 ppm

## **CLOSING NORTHERN POOLS (Cont.)**

### **MAIN DRAIN**

- (1) With skimmer valves closed, open main drain valve.
- (2) Open hair and lint basket (sump) at pump. Remove basket. Replace drain plug.
- (3) Pour approximately two gallons of RV Anti-Freeze into hair and lint basket. Close basket cover.
- (4) Blow from suction side of "blow spot" with main drain valve open, until you can see small trace of Anti-Freeze entering the pool.
- (5) Close valve quickly.

### **MISCELLANEOUS**

- Stuff rag or sock in each end of "blow spot." Rubber bind or duct-tape rags in place.
- If you have a slide, water-powered vacuum (Polaris, Kreepy Krauly, etc.), or water-fill hose installed on your pool they will need to be blown out and filled with Anti-Freeze. Use above procedure in most cases. Some slides, however, may need to be blown from the spot of disconnection.
- Set sand filter 7-way Valve to the "Winter" or "Closed" position.
- Remove ladder and railings. Lift cover plate & unfasten 7/16" or 1/2" bolts.
- If diving board is greater than 8' long and snow is expected, remove and store inside for the winter.
- Cover pool with winter cover. If water bag cover is used, fill water bags half-full to prevent winter cracking. Also, allow cover's slack to fall into pool and anchor with as little on deck as possible (1 to 2 feet is ideal). This will prevent the cover from collapsing into the pool under a load of snow.

### **SOUTHERN POOL CLOSING PROCEDURE**

If you are located in a region where freezing water is not a concern, then lower pH to 6.8 and raise copper levels to 0.8 ppm. There is no need to run the pump and filter everyday. You must however run the pool if a frost warning is issued. Southern pool owners may adjust pH every 2 or 3 weeks in a non-circulating pool for maximum control.

### **OPENING NOTES:**

New ECOsmarte pools that were chemically treated the previous year should use identical opening procedures as before ECOsmarte was installed. The ECOsmarte unit should be turned on when water is clear. The oxygen will knock out the chlorine residual in 24 to 48 hours.

# MAINTENANCE and OWNER RESPONSIBILITY

- (1) ECOsmarte System:** Following the detailed procedure below, the ECOsmarte Electrode Chamber must be cleaned every third month of operation and as needed under certain water conditions.
- (2) Filter Maintenance:** Adequate filtration is required in order to operate a clear swimming pool. Sand filters can be cleaned by soaking sand with one gallon of muriatic acid overnight. Apply the undiluted acid directly to the sand once per year. Cartridge filter elements must be soaked in 5:1 muriatic acid and water solution, then TSP and water for one hour each (as needed). Replace the cartridge every 6 months for spas and every 18 months for pools. DE Filter elements need same muriatic bath as cartridges as well as TSP bath for one hour. (Sand filters backwash twice after 6lbs. rise, DE filters three times after 12lbs. rise.)
- (3) Pool Maintenance:** GUNITE pools require pool brushing of areas where automatic vacuum does not reach on a weekly basis. A cavitating pump will run our Electrode Chamber dry and result in poor automatic vacuuming. Vinyl, GUNITE, and Fiberglass pools work best with a suction wall vacuum, not a sweep.

## ELECTRODE CLEANING PROCEDURE

- (1)** Mix solution 5 parts water to 1 part acid in a bucket. When adding acid to water be careful not to spill or be down wind when pouring.
- (2)** Disconnect terminal clips. The Red & Green wires attach to the copper side of the chamber, the Black & White to the titanium side. If uneven electrode wear is noted on copper electrodes you must reverse position of the Green & Red terminal clips after cleaning.
- (3)** Place entire Electrode Chamber in bucket for 10 to 15 minutes. The build-up will slowly dissolve. **DO NOT** scrape the surface of the electrodes. If you will be cleaning yourself, consider cleaning caps to cut acid use and speed process. Cleaning caps from your dealer will cut acid use and simplify this procedure.
- (4)** Remove Electrode Chamber from bucket and rinse with garden-hose pressure. Make sure to rinse your hand as well.
- (5)** Wipe terminal clips dry and reconnect leads after reinstalling Electrode Chamber in pressure line. Remember: Red & Green connect to the copper side, Black & White to the titanium.

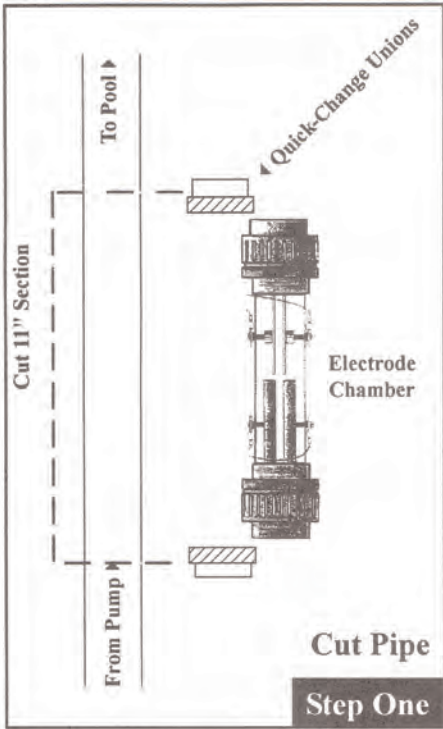
## WHEN CLEANING

**DO NOT DISASSEMBLE chamber OR USE METAL FILES**

\*\*\*\*\*

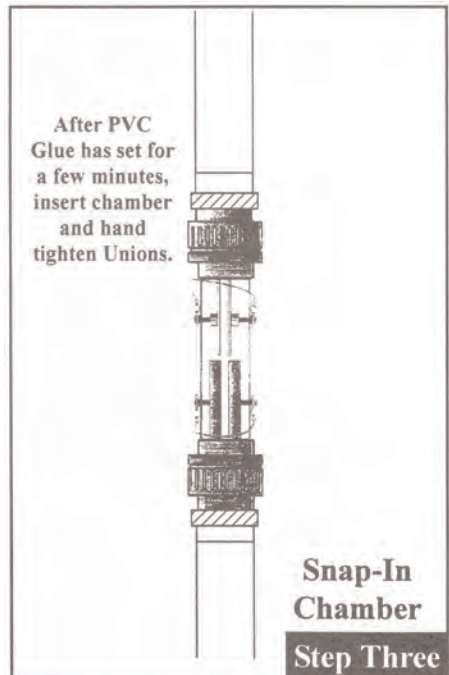
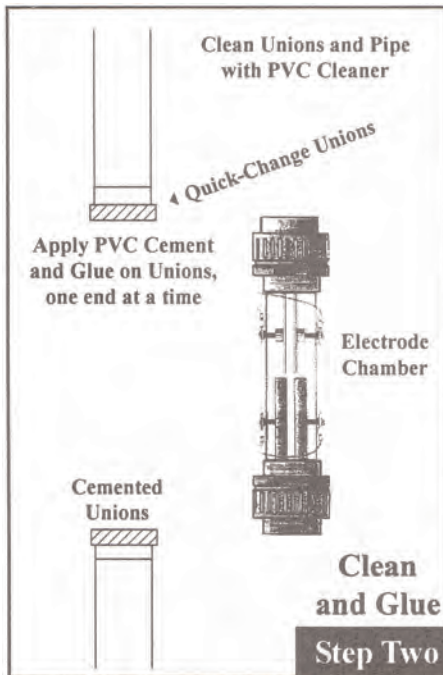
# Electrode Chamber Installation

The ECOsmarte Electrode Chamber may be installed either between the pump and filter or, preferably, after the filter. The titanium electrodes should be aligned nearest the pool (see diagram). If you have a spa in line with your pool filter system, ensure the **Electrode Chamber** is located before the valves that divide return water to the pool and spa.



## Tool List:

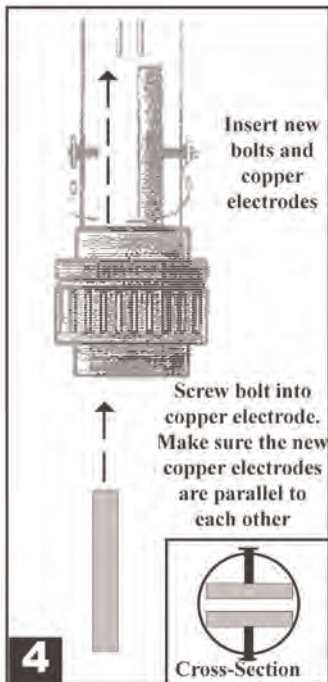
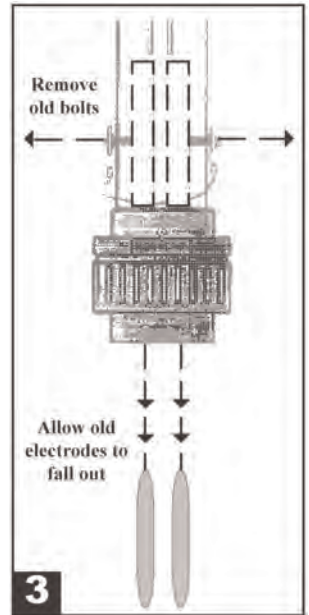
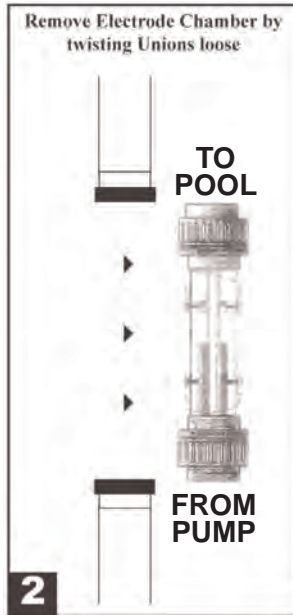
- Hack Saw
- PVC Cleaner
- Felt-Tip Marker
- Tape Measure
- PVC Cement





# Copper Electrode Replacement

## TO POOL



**ECOSmarte Copper Electrodes** are not protected under the five-year warranty. The life of copper electrodes depends on multiple factors. Worldwide the life of copper electrodes averages three years. You can extend the life of the electrodes by following the directions in the Owner's Manual. Remember to shut off the Electronic Box when water is not circulating through the Electrode Chamber. The Copper Electrodes will continue to be ionized as long as the electrodes are in solid contact with the bolts. If the electrodes corrode free of the bolts then it is time to replace them.

**Do not replace your titanium bolts with stainless or brass substitutes.** You will receive new bolts when you purchase electrodes from your dealer.

**REFER ANY BUYING CUSTOMER TO YOUR DEALER AND RECEIVE A SET OF FREE COPPER BARS.**



# ELECTRICAL INSTALLATION

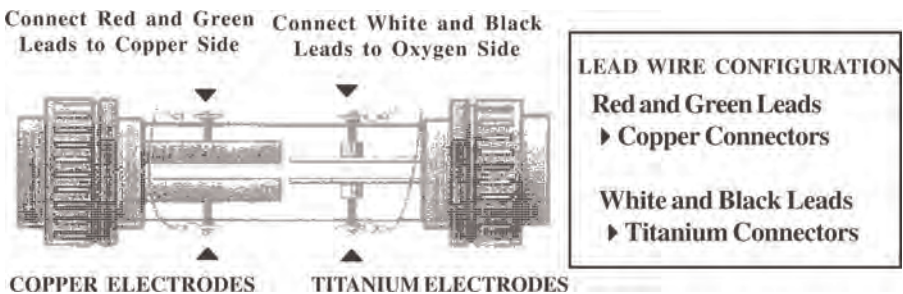
Your ECOsmarte Pool System comes with paired wires for easy installation. If you remove the Electrode Chamber or re-install the System at another location then consult this electronic guide. The Electronic Control Box requires 110 volts A/C and will transform the current to low voltage DC current. The output depends upon which setting you chose, low or high. If additional wire is needed, standard 2 wire telephone cord can be used (make sure you purchase butt-end connectors).

## INSTALLATION METHOD #1

Mount the Electronic Control Box on a wall or fence near the pump and filter system. Connect the output leads to the Electrode Chamber (white and black to the titanium, red and green to the copper; see diagram below). Plug the electrical cord into a 110 volt A/C outlet. Although this method is the simplest installation, it will require someone to turn the Electronic Box on and off when the pump is turned on and off, so that the Electronic Control Box is never on without the water recirculating. An outdoor timer (synchronized to the pump timer) may be installed between the Electronic Control Box plug and the electrical outlet if desired to solve this problem and ensure proper operation of the System. ECOsmarte has 110V outdoor timers available as do most pool stores and Home Improvement Centers.

## INSTALLATION METHOD #2

If you have an existing pump timer (220V), then the Electronic Control Box can plug into an outdoor timer (110V) which is set in tandem with your pump timer. Set the ECOsmarte box 15 minutes less time than the pump. This method of installation will ensure proper operation and timing of the Electronic Control Box with the pump cycle. If the ECOsmarte Electronic Control Box is wired according to method #2 then someone will still need to switch the control setting on the Box to ionize when copper measurements indicate a need for copper ions. Follow local codes on all electrical wiring. (Three wire 220V systems may need upgrade to four wire to meet code.)



**SEE IMPORTANT SAFETY ISSUES ON PAGE 28**

# PROBLEM SOLVING

## CLOUDY WATER

If your water appears cloudy, or like milk, the cause is most likely associated with the ionization descaling in your pool pipes. This process is normal, and will eventually cease. Consider this: with whatever sanitation chemical you were previously using, the calcium carbonate has been allowed to scale and build-up inside your pool pipes, heater, filter, and other pool equipment. The ECOsmarte Pool System will alter the form of calcium, and activate a descaling process which will remove the build-up inside your pipes, heater, filter and other pool equipment. The process is safe to you and beneficial to your pool equipment. Generally a cloudy pool as a result of descaling will last from 1 to 3 weeks, however the condition may show itself periodically until all scaling has been removed. To speed up the removal process, you should:

- (1) Clean filter media thoroughly, sand filter & DE owners should break down filter each spring, soaking grids is critical, twice yearly.
- (2) Test pH and Copper ppm and adjust as needed.
- (3) Oxidize water for two cycles per day.
- (4) **Test water for phosphates.**

ECOsmarte recommends the above procedure. If a cloudy condition persists beyond three weeks the filter media may be inadequate. Waiting for pressure rise remove the minute calcium particles and aid your filter in its removal. Glass Pack® (see inside front cover). Replacement media for sand filters. (Sand must be changed every 3 years minimum.) Glass Pack® should last five years.

## ALGAE BLOOM

The ECOsmarte Pool System requires a pH between 6.8 and 7.2. If an algae bloom appears it is usually because the pH drifted above 7.2, or the copper residual is below 0.4. The active algaecide in the water is the copper ion. Measure your copper levels and adjust as needed (between 0.4 and 0.7 ppm). The ECOsmarte Pool System does not "vaporize" organic matter. The System will render inert simple organisms, like algae. Adequate filtration is necessary to run a crystal-clear pool. If an algae bloom occurs, there are a few things you can do to speed up the removal of algae.

- (1) Clean filter media thoroughly,
- (2) Measure pH and Copper ppm and adjust as needed,
- (3) Brush algae toward main drain daily,
- (4) Backwash media when filter pressure rises 6-10 lbs.

Too much backwashing can cause algae to form or cloudy water. Test water for phosphates.

ECOSmarte recommends this procedure. If an algae bloom persists beyond one week, use a Non-Metallic Algaecide for additional help. Finally, without adequate filtration dead algae will remain in a pool and a "bad" filter will spin algae in circles. Note: A DE Filter pool with visible algae should use 1 quart non-metal algaecide to sanitize grids. A suction style vacuum versus a sweep or "pop-ups" is recommended.

### **BAQUACIL CONVERSION (SWIM 'N PLAY and any BIOGUANIDE)**

Baquacil conversions require a slightly different start-up procedure. ECOSmarte recommends the following:

#### **DAY ONE**

- (1) Allow Baquacil to run to zero.
- (2) Shock the pool water with Non-Chlorine Shock (4 lbs per 10,000 gallons)

#### **DAY TWO**

- (3) 24 hours later, shock the pool water a second time with Non-Chlorine Shock (2 lbs per 10,000 gallons)
- (4) Ionize pool water until a copper ppm of 0.5 is achieved, taking longer than other pools with 96 hours likely.

Ex-Baquacil users need to clean their electrodes (every two weeks of the first year) to prevent a chemical seal from forming on the electrodes.

### **NEW VINYL LINER OR GUNITE SURFACE**

Unfortunately, the most effective way to cure a new vinyl liner or GUNITE surface is to lightly chlorinate it for 10 to 14 days. This process is designed to remove plaster dust before it gets in your filter and creates a season of problems. The chlorine residual in the pool will run itself to zero within 7 days after the curing process is complete. **Use:** 1 gallon of regular bleach per 10,000 gallons each week for two to six consecutive weeks to oxidize the gases from the vinyl or plaster dust from GUNITE surfaces. No metal remover in the pool.

## **ONLINE VIDEO RESOURCES**

ONLINE SUPPORT FRAME (Password: customer2007) See P. 25



# ECOsmarte Customer Service Guide

## Swimming Pool Systems: Common Questions

### I CAN'T GET MY COPPER TO RISE

- It takes 36 to 72 consecutive running hours on ionize to get your copper to rise
- The pool will not ionize if calcium hardness is below 400, raise it to 400 at start-up
- The swimming pool will not ionize if the pool pH is above 7.3
- Make sure connectors are solid on your red/green leads and bars are clean

### • **CONFIRM ZERO PHOSPHATES**

### MY WATER IS “MURKY” or “HAZY”

- Copper is below 0.4 ppm. Switch to ionize for 8 to 16 running hours, often after lowering pH.
- pH is above 7.2. Lower to 6.8 with acid, even if pool has CO2 injection
- Backwash is only done with 6 lbs minimum rise on sand, ZEOLite or glass filters, 12 lbs pressure rise on DE.
- Do not backwash without pressure rise except GLASS at 6 weeks running.
- Do Not Adjust a 6.6 pH pool up. Start each week at 6.8.
- Let the 6.6 pool rise on its own for a week or two.

### • **CONFIRM ZERO PHOSPHATES**

### MY POOL HAS GREEN WATER

- pH is above 7.3, lower to 6.8 with acid
- Copper is above 1.0, exchange one to two feet water out, check pH.
- Do not shock pool with sodium based non-chlorine shock – use potassium based only. GBL OXYBRITE® is a great product.
- Never use metal remover or clarifier, the pool needs two consecutive non-chlorine shocks to remove them.

### MY POOL HAS ALGAE

- pH has risen above 7.4, Acid Adjust to 6.8.
- Copper is below 0.4 ppm (or likely both), switch to ionize.
- Filter maintenance, brushing, vacuuming or skimmer baskets need attention.
- Add any Algaecide with the numbers 40 or 60 on the label, follow 24 hours later with 2 lbs per 10,000 gallons non-chlorine shock, if needed.

### • **CONFIRM ZERO PHOSPHATES**

### MY DAUGHTER HAS GREEN HAIR

- Copper is above 0.7 ppm, lower with water drained back two feet.
- pH is below 6.6, raise with soda ash or baking soda.
- Calcium is below 200, raise to 400.
- Customer is getting chlorine from beauty shop perm or city water.
- Wet hair before getting in the pool.
- Run copper at 0.5 ppm at this pool instead of 0.7 ppm

#### **ALWAYS**

- pH to 6.8
- Copper to 0.7
- Calcium to 400 ppm

#### **NEVER**

- Use Chlorine
- Use Metal Remover
- Use Clarifier



**\*AVOID ADJUSTING ALKALINITY UP WITH ECOsmarte\***

## COMPATIBLE PRODUCTS

- Glass Pack® Filter Media, watch for ECOsmarte promos
- Algaecide 40, 60
- Non-Chlorine Shock - Potassium-Based Only (GLB OxyBrite is the best)
- Calcium Chloride or Hardness Increaser
- Phos Free, Sea Klear
- ZEOBrite with PEA Gravel Base in All Pentair, Sta-Rite, Jacuzzi Brands

## ABSOLUTELY INCOMPATIBLE PRODUCTS

- Any Algaecide w/metal
- Any SOLID CHLORINE
- Any metal remover, Scale Control or Clarifier
- Sodium-Based Non-Chlorine Shock
- Guardex Z Media, ZEOBest
- ZEOsand and ALL CARTRIDGE FILTERS
- Enzymes

## START-UP POOL ISSUES

- Do Not Let Chlorine Fall to Zero Prior to Start-Up
- Bromine Pools Must Be Drained
- Baquacil Pools Are Easy If Drained
- ALL Salt Pools Should Be Drained
- Phosphates Should Be Tested At Fill Up and 2 weeks After Start-up
- Calcium Tested At Fresh Fill and After 2 Weeks Operation
- Salt Chlorine Generator Pools Must Be Drained and Wiped Down

- Surfaces cured with liquid chlorine (Not needed on fiberglass)
- Backwash at pressure rise only on sand; **6 weeks on glass filtration** regardless of pressure gauge increases.

- D/E Filters broken down twice per year, grids soaked annually

## CLOSING NORTHERN POOLS

- Copper at 0.7 ppm, ph 6.8. NO CHEMICALS REQUIRED other than antifreeze.



**DOWNLOAD THE COMPREHENSIVE GUIDE  
TO SWIMMING POOL OWNERSHIP**  
[www.ecosmarte.com/pool\\_request.html](http://www.ecosmarte.com/pool_request.html)

## **COMMON MECHANICAL OR POOL OPERATING ISSUES**

### **Cartridge Filters: NOT COMPATIBLE**

They don't receive a regular soak in chlorine and form molds and biofilms and are not compatible with the ECOsmarte system, when total gallons of water exceed 1,000. They are used on spas only.

### **Sand Filters**

At least a 200 lb Sand Filter is needed for the necessary filter bed depth. 200 lb filter will not support a 1.5 hp or larger pump -- see The Comprehensive Guide to Swimming Pool Ownership at [www.ecosmarte.com/pool\\_request.html](http://www.ecosmarte.com/pool_request.html).

### **Zeolites holding phosphates**

Annual acid wash is required along with checking the bed depth in the filter if ZeoBrite is used. Most other zeolites are incompatible as they pull calcium hardness and copper from the pool. All Sand Filters require media change-out every 3 years, zeolites as needed. Consider Glass Pack®.

### **Keeping the Pool clean**

Suction vacuuming and/or wall brushing is needed weekly during high season with all heavy vacuuming done to WASTE. As with chlorine pools, water will not be clean for 48 hours after heavy vacuuming or if skimmer baskets are full.

### **Backwash: Timing & Method**

**Sand, Glass or Zeolites:** At 6 to 10 lbs rise in filter pressure backwash for 2 1/2 minutes, followed by a Rinse to Clear Sight Glass (seconds). Turn off pump and REPEAT backwash and Rinse. A 5 minute backwash will leave algae spore in the filter. Glass filter to backwash at 6 to 8 weeks if no pressure rise has occurred.

**D/E or Perlite:** At 10 to 18 lbs pressure rise on the gauge backwash for 2 1/2 minutes followed by a Rinse to Clear Sight Glass (seconds). Turn off pump, repeat twice.



## SAND FILTRATION IS DEAD but your Sand Filter may not be.

Sand and Cartridge filters leave many undesirable and unhealthy particles in your pool and require more chemicals. The particles accumulate as Total Dissolved Solids (TDS). There has been only one option in the past to solve this problem: a diatomaceous earth filter. While DE filtration will afford you a healthy pool, it will not go without additional costs in DE powder and time. The average DE filter costs \$899 and requires avid micro-management during the pool season. Fortunately ECOsmarte offers the busy, health-conscious pool owner an inexpensive and invigorating option: Glass Pack® Replacement Filter Media. With ECOsmarte you get the best of two filtration worlds: the convenience and simplicity of your old sand filter, and premium filtration. The best part is Glass Pack is compatible with your current sand filter, so you will not have to learn a new system. Glass Pack® replaces your dead sand.

An average sand filter can catch particle as small as 100 microns.

A good cartridge filter can catch particle as small as 40 microns.

Dead skin and blood cells are 9 microns in size.

DE Filter	2-5 Microns	\$399-\$1,299
-----------	-------------	---------------

Glass Pack®	2-10 Microns*	\$200-\$500
-------------	---------------	-------------

Sand Filter	50-100 Microns	\$299-\$1,299
-------------	----------------	---------------

\*(5YR EXPECTED LIFE INSTEAD OF 3 YR SAND)

2-10 MICRONS WHEN PROPERLY SIZED WITH PUMP

### ECOsmarte WATER AIDS

# Glass Pack®



#### FILTER

- Trisodium Phosphate (TSP)
- Aluminum Sulphate (Alum)
- Muriatic Acid Rinse
- Ferre Tabs, Glass Filter Media

#### WATER CLARITY

- Zero Phos, Sea Klear
- Calcium Hardness Increaser
- Non-foaming, Non-Metal Algaecides 40 or 60
- Potassium peroxy monopersulphate 43%, (Not Sodium)

#### TEST KITS

- LaMotte EC-70 Copper Test -- 0.05 to 1.0 ppm
- Aquality pH Liquid Test Kit
- ECOsmarte Pool Manager  
(cu, pH, calcium, phosphates)

#### SPECIAL PRICING: Media Only

300 LBS. SAND FILTER \$300.00

600 LBS. SAND FILTER \$600.00

900 LBS. SAND FILTER \$900.00

Plus Shipping or Local Install

**CALL YOUR DEALER FOR PACKAGE DEALS  
"INCLUDING A NEW FILTER W/ VALVE"**

**BETTER  
THAN D/E  
WITHOUT  
THE WORK**



## **GLASS FILTER MEDIA- ANOTHER GREAT PRODUCT DEVELOPED by ECOsmarte**

ECOsmarte's Glass Pack® is made from 100% recycled glass. It is crushed, dried at 250 degrees Fahrenheit, and screened into various sized fractions to achieve optimal filtration properties.

As the grains are nearly all angular in shape and have a fairly high degree of sphericity, the filter bed tends to have more opened packing resulting in better permeability than a filter of spherical silica grains.

Because glass is amorphous and has no internal crystal structure, the particles are homogenous and have no grain boundaries. This gives glass more resistance to breakdown through filtration backwashing cycles.

Furthermore the lack of grain boundaries minimizes cracks where bacteria can lodge and resist flushing in back washing.

Glass particles have a slight negative charge on their surface, which tend to hold onto fine particles during the filtration cycle. Upon back washing, this weak charge releases these fine particles to the effluent thereby contributing to better filtration action. There is less water to the better permeability of a glass filter.

As crushed glass is lighter than silica sand, between 15 and 20% less glass is needed to fill a filtration unit. With the better filtration characteristics and lower density glass is a superior filtration media for many filtration applications. It can be used in swimming pool and spa filters as well. Glass filter media is now being used in storm water runoff filtration systems as a replacement for silica sand.

Using glass not only results in good performance, but in real cost benefits over the life of a filter bed.

**2011 VIDEO DOWNLOADS**  
[www.ecosmarte.com](http://www.ecosmarte.com)  
**ONLINE SUPPORT**  
Password: customer2007

1. Swimming Pool Operation
2. Programmable w/CO2 Keypad Operation
3. Spa System Installation & Operation
4. Water Testing

### **ONLINE GUIDES**

- A. How Do I Put Calcium Hardness In My Pool?
- B. How to Remove Phosphates over 1,000 ppm
- C. How to Remove Metal Remover or Chelating Agent?
- D. How to Remove Yellow, Green, Brown, and Black Spots From Pool Surface
- E. How to Avoid or Get Rid of Green Hair?
- F. Using a Soft Wash instead of an ACID WASH for Plaster Pools.
- G. REGISTER WARRANTY at [www.ecosmarte.com](http://www.ecosmarte.com)

### **ONLINE SUPPORT FRAME**

**Password:**  
**customer2007**

**Glass  
Pack®**



# Glass Pack®

## Glass Filtration Media

Finely crushed glass for pool, industrial, and environmental filtration that provides outstanding water clarity and quality - a direct replacement for sand or Zeolite in both freshwater and saltwater pools.

### Superior Cleaning

- Cleaner, lighter weight, highly angular crushed recycled glass provides an amazing 25% improvement in turbidity removal over silica sand, and is equivalent to Zeolite. It has been tested in the worst wastewater applications by the U.S. Environmental Protection Agency (EPA).
- Crushed glass filtration media generally removes finer particles from water than silica sand of an equivalent grade, and is comparable to properly configured Zeolite.
- Weak negative surface charge holds fine particles and positively charged iron and manganese ions that are easily released upon back washing. Perfect for well water pools.
- Crushed glass filtration media is less likely to block or channel than silica sand or Zeolite and will not support moss or fungus growth in the media.

### Safer to Use

- Glass contains no crystalline silica—resulting in better lung protection for employees and a far healthier environment.
- Glass grains are amorphous, smooth particles that have higher attrition strength and do not permanently trap bacteria in cracks.
- Use of crushed glass filter media will lower your consumption of chlorine and coagulants. Coagulants and metal removers foul Zeolite and are compatible with glass.
- Manufactured from 100% recycled glass machined like sugar.

### Lower Operating Costs: Easy Install and Maintenance

- Labor and time savings at install.
- Improved performance for pressure or gravity-flow filters.
- Weighing 20% less than sand, ECOsmarte® crushed glass filtration media provides more filter volume per pound.
- Lower density requires up to 20% less media to fill your filter vessel.
- Better permeability—back washes with up to 25% less water, saving down-time and water/sewer charges.
- Because glass cleans better, you save energy, operating costs, and extend the life of your filter.
- Comparable initial cost to Zeolite on retrofit sand filters.

**Makes Your Pool  
Water Look Like Glass...**

# 1-800-ION SWIM

## PROCEDURE TO RECEIVE TOLL-FREE SUPPORT ORDER SUPPLIES & PARTS

To properly support thousands of customers in North America, ECOsmarte has trained, factory support personnel available six days per week. This service is offered at no charge for the first six months you own an ECOsmarte Pool or Spa System. Combination Pool and Whole House System customers get five years unlimited phone support. When calling 1-800-ION SWIM with a pool problem or question, please have ready.

- (1) Your Install Date.
- (2) Where purchased if applicable
- (3) The current pH, copper, calcium, and phosphate levels along with a recent general pH history of your pool.

This information will allow ECOsmarte personnel to properly advise you. If you wish to receive Toll-Free Customer Support after your 6 months has expired, ECOsmarte offers three levels of Support at a minimal cost.

### All Online Inquiries Answered Within 24 Hours.

#### BEFORE CALLING ECOSMARTE SUPPORT LINE

Current pH: \_\_\_\_\_

Copper ppm: \_\_\_\_\_

Calcium: \_\_\_\_\_

Phosphates: \_\_\_\_\_

#### 2011-2012 Consumable Price List (subject to change)

- |  |       |
|--|-------|
| • ECOsmarte Pool Manager   | \$109 |
| • EC70 Copper Test Kit   | \$24  |
| • Glass Pack (Per LB of Filter Capacity)                                   | \$1   |
| • Replacement Copper Electrodes  | \$175 |
| • Electrode Chamber Hardware Kit<br>(includes bolts, washers & male clips) |       |

**Most Items @ [www.ecosmarteonlinestore.com](http://www.ecosmarteonlinestore.com)**

# IMPORTANT SAFETY INSTRUCTIONS

**When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:**

- 1) READ AND FOLLOW ALL INSTRUCTIONS.**
- 2) (For all units) WARNING - To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.**
- 3) (For cord- and plug-connected units) WARNING - Risk of Electric Shock Connect only to a grounding type receptacle protected by a ground- fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify that the receptacle is protected by a GFCI.**
- 4) (For cord- and plug-connected units) Do not bury cord. Locate cord to minimize abuse from lawn mowers, hedge trimmers, and other equipment.**
- 5) (For cord- and plug-connected units) WARNING - To reduce the risk of electric shock, replace damaged cord immediately.**
- 6) (For cord- and plug-connected units) WARNING - To reduce the risk of electric shock, do not use extension cord to connect unit to electric supply; provide a properly located outlet.**
- 7) SAVE THESE INSTRUCTIONS.**

**MODEL:** ECOPT

**INPUTS:** 110/220V 50/60Hz

**OUTPUTS:** 4V-17V DC. 100-900 Milliamps

**CAUTION:** CONNECT ONLY TO A CIRCUIT PROTECTED BY A CLASS A GROUND FAULT CIRCUIT INTERRUPTER.

**WARNING:** DISCONNECT THE ELECTRIC POWER BEFORE SERVICING. USE COPPER CONDUCTORS ONLY.

**CAUTION:** For continued protection against possible electric shock use only identical replacement parts when servicing.

TO REDUCE THE RISK OF ELECTRIC SHOCK, INSTALL AT LEAST 10 FEET FROM THE INSIDE WALLS OF A POOL.

DO NOT USE AN EXTENSION CORD.

**CAUTION:** ADEQUATE DRAINAGE MUST BE PROVIDED IF THE EQUIPMENT IS TO BE INSTALLED IN A PIT.

**1-800-ION-SWIM (466-7946)**  
**www.ecosmarte.com**



Est. 1994

# "OUR BEST CUSTOMERS HAVE BECOME OUR BEST RESELLERS..."

The two largest resellers in ECOsmarte's 17-year history both started as enthusiastic customers with business backgrounds in totally unrelated careers. The first was a newspaper publisher from North Carolina, in the Southeastern United States, and the second a medical emergency room doctor with a territory in Colorado. Outside of a shared belief in ECOsmarte's products, there was no reason to believe that they would become ECOsmarte's highest performing distributors.

**When someone runs a crystal clear pool without any chemicals,  
they get so excited they create a business.**

What these two examples show is that you don't need to be a pool or water treatment expert to succeed with our products. Product passion, commitment and entrepreneurial spirit are huge contributors to success. Consumer spending for 2011 looks way up and the "GREEN" product niche is here. An ECOsmarte pool owner has an immediate opportunity.

**ENTREPRENEURS WANTED**  
**Swimming Pool Owners Preferred**

**Glass  
Pack®**



[www.ecosmarte.com/dlr\\_info.html](http://www.ecosmarte.com/dlr_info.html)  
[www.glasspackfilter.com](http://www.glasspackfilter.com)

DOMESTIC and INTERNATIONAL TERRITORIES  
**(612) 866-1200**



Est. 1994

**AVAILABLE AT OUR ONLINE STORE**  
[www.ecosmarteonlinestore.com](http://www.ecosmarteonlinestore.com)



### **ECOsmarte's Copper Electrodes**

For all ECOsmarte Systems: Pool System, Spa System, or city/well Water System.



**ECOsmarte's Ferre-Tabs** remove iron or excess copper from swimming pools.

Two skimmer tablet doses eliminates the need to waste water by draining the pool back and avoids incompatible metal removers.



### **The Exact Micro 7 Digital Water Test Kit**

makes testing water parameters easy. Just put the test strip into the reader and get a digital readout. No color charts to compare to.

Tests: copper, calcium, and pH  
EZ Use. Proven accurate since 2009.

## **BLOG WITH ECOSMARTE**

**Help Us Donate Water  
To Those Without Any Water.**

[www.ecosmarteblog.com](http://www.ecosmarteblog.com)





## INTERACTIVE CD

THE ECOSMARTE POOL SYSTEM  
Trouble shoot your pool at 2 AM with this interactive problem solving CD. Follow step by step instructions with your pools parameters to solve problems.

## SUPPLIES FOR YOUR POOL MANAGER

- Cu
- Calcium
- pH
- Phosphates

Test Kits

(2 Year Shelf Life and Supply)



## OTHER SERVICES

### A) REGISTER YOUR WARRANTY

(Must have serial number from bottom of control box)

### B) CHAT ABOUT YOUR POOL - Using Instant Messenger

A mouseclick or keyboard stroke away for your convenience.

[www.ecosmarteonlinestore.com](http://www.ecosmarteonlinestore.com)



Established in 1994, ECOsmarte is located adjacent to the MSP airport on I-494 at the Mall of America. Come Visit Us.

### ECOSmarte Planet Friendly

1600 E. 78th Street  
Richfield, MN 55423  
**(612) 866-1200**



# The Automated Pool

Automatic CO<sub>2</sub>  
Non-Chemical  
Feed (pH Down)  
(w/o tank)

Flow Regu-  
lator

20 or 50 lbs  
CO<sub>2</sub> Cylinder  
Tank

Solenoid  
Pressure  
Hose 1/4"

To ECO Box  
DC Voltage

CO<sub>2</sub> Feed Line

Plastic CO<sub>2</sub>  
Check Valve

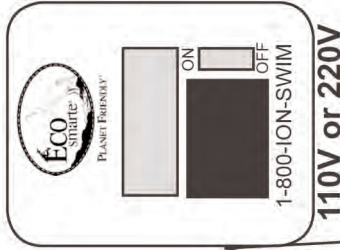
CO<sub>2</sub> Injection  
Chamber  
w/ Check Valve\*

To Pool

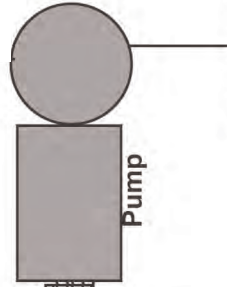
## FILTER

In Order of quality

- 1) DE
- 2) GLASS Media®
- 3) ZEOsmarte®
- 4) Sand
- 5) Cartridge  
(Not Compatible)



Programmable  
Controller



Oxygen/Copper  
Chamber  
Version 4.0

CO<sub>2</sub> Injection  
Chamber  
w/ Check Valve\*

From Pool

\* CO<sub>2</sub> Must Go After ECO Chamber

MINIMUM FILTER SIZES			
GALLONS	SQ METERS	FILTER SIZE	DIAMETER
0-25,000	Less than 90	150 Kilo/300 LB	24"
25,000-39,000	90-159	300 Kilo/600 LB	31"
40,000 and Up	160 and Up	450 Kilo/900 LB	36"

**1-800-ION-SWIM**  
[www.ecosmarte.com](http://www.ecosmarte.com)

Certain U.S. and International Patents Pending

**FREE OFFER: COPPER ELECTRODES**  
LIMIT ONE PAIR PER HOUSEHOLD  
**REFERRAL PROGRAM**

**TWO WAYS TO QUALIFY**

- 1) Send us a short video of your pool (mail or email/any handy-cam will do) telling us what you like about chemical-free water.
- 2) Refer one buying customer to any ECOsmarte dealer and provide referred buyer name.

Referred Buyer Name \_\_\_\_\_

Your Name \_\_\_\_\_

Daytime Phone# \_\_\_\_\_ Work Phone: \_\_\_\_\_

Evening Phone# \_\_\_\_\_ Email \_\_\_\_\_

Unit 1 Serial# \_\_\_\_\_ Unit 2 Serial# \_\_\_\_\_

Date of installation \_\_\_\_\_

Name of ECOsmarte Dealer \_\_\_\_\_

**ON-LINE SUPPORT AT [www.ecosmarte.com](http://www.ecosmarte.com)**

**Mail this card to:**

**ECOsmarte Planet Friendly, Inc.**

**1600 East 78th Street, Richfield, MN 55423**

**Ecosmarte Planet Friendly**  
**FIVE YEAR**  
**Manufacturer's Product Warranty**  
**Pool and Spa System**

The manufacturer warrants its equipment to be free of defects in material or workmanship on the product for the period of five (5) years. This warranty includes the electronic box, the plumbing components and the titanium electrodes. It does not include the self-sacrificing copper electrodes, installation or repair cost and in no event shall the manufacturer's liability exceed its selling price.

The electronic box shall further have a limited warranty on all operating components; provided in years three through five, warranty expressly excludes misuse of product, submersion or cord removal.

No warranty shall exist on airborne microbes on indoor pool or spa installs.

The manufacturer disclaims all liability for damage to its products through improper installation, acts of God, maintenance, use or attempts to operate such products beyond their functional capacities, intentionally or otherwise, or any unauthorized repair. The manufacturer is not responsible for consequential or other damages, injuries, or expenses incurred through the use of its products.



# SMARTE 5 YEAR WARRANTY REGISTRATION CARD

Ecosmarte agrees to repair or replace all non-performing components for a period of five years on the products if proper installation has been followed.

The customer ships prepaid to our office; return freight prepaid by Ecosmarte.

Automated Non-Chemical Pool  Turbo Pool System  Above Ground Pool System  Turbo Spa

Date Installed \_\_\_\_\_

Name \_\_\_\_\_

Email \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

REFERRED BUYER

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State \_\_\_\_\_

Unit Installed:

Outdoor

Indoor

Phone Numbers: Days \_\_\_\_\_ Evenings \_\_\_\_\_

Local Dealers Name: \_\_\_\_\_

Payment by:  Check or Money Order  Visa/Mastercard  Discover  Cash  
Please Check One

Corporate Office Use Only

Ship Date \_\_\_\_\_

Distributor \_\_\_\_\_

Card Return Date \_\_\_\_\_

Referral Received \_\_\_\_\_

Electrodes Shipped \_\_\_\_\_

Date \_\_\_\_\_

**FAX THIS FORM TO**  
**612-866-0152**  
 Mail to the address below or  
**Submit Online @**  
[ecosmarteonlinestore.com](http://ecosmarteonlinestore.com)

**FACTORY SPONSORED - DIRECT TO YOU - FREE COPPER ELECTRODES FOR ONE BUYING REFERRAL**  
 Send to 1600 East 78th Street, Richfield, MN 55423