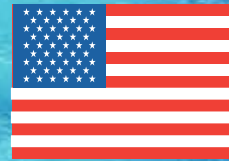




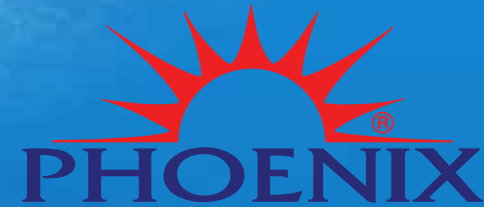
Pool & Spa Guide

*A practical guide to water chemistry
featuring Quality American made
products for your pool, spa or hot tub.*





MADE IN USA



HOUSEHOLD WATER TREATMENT



Welcome and Thank You for your interest in our products.

For those of you who know us and use our products, we would like say - **Thank You.**
To our new customers, we say - **Welcome.**

Since 1982, we have proudly served as a formulator and packager of high quality American Made chemicals for your pool and spa. Our practices are simple; never compromise quality, share the knowledge we've gained, and continue developing new innovative products that make pool and spa maintenance quick, easy, and safe.

Your pool and spa are a big part of your family's life. They are your personal retreats and backyard entertainment centers. This guide showcases the quality products that allow you to effortlessly keep your pool or spa clean, clear and refreshing.

We offer you the best of who we are...because your private sanctuary should not be a complicated chore to maintain!

Table of Contents

| | |
|---------------|-------------------------|
| Page 2: | Welcome |
| Page 3: | Safety 101 |
| Page 4-6: | Water 101 |
| Page 7 - 10 | Balance |
| Page 11 & 12: | Sanitize |
| Page 13 & 14: | Shock & Salt Program |
| Page 15 & 16: | Algaecide |
| Page 17-20: | Specialty |
| Page 21 & 22: | Metal & Scale |
| Page 23 & 24: | Troubleshooting |
| Page 25 & 26: | Puracil |

Nothing Replaces Parental Supervision

• NEVER SWIM ALONE. NEVER LEAVE A CHILD ALONE NEAR WATER. LEARN CPR.

- You must set and enforce strict pool rules such as: no running, no diving, etc. Post a list of rules near the pool area.
- Keep a pole and ring buoy with rope by the pool at all times. Know how to use each effectively, and make sure to replace these items in the same location each time you use them.
- Always have a first-aid kit handy.
- Keep a cordless phone and a list of important phone numbers nearby in case of emergencies. Such as the **Poison Control Center number 800-222-1222**. Also, list the address of the pool residence, should someone other than the homeowner need to make the emergency phone call.
- Use multiple layers of protection to prevent drowning, such as a fence around the pool with a self-latching, self-closing gate, as well as a pool alarm.
- Enroll children over age three in swimming lessons taught by qualified instructors.

In addition to water safety related to swimming pools, be aware of other drowning dangers, especially for children, in and around your home. These include bathtubs, decorative ponds, and even mop buckets. It only takes 2 inches of water for a small child to drown.

Chemical Safety

When using any chemical products, read labels carefully and follow directions precisely. Chemicals protect you when they are used correctly in your pool or spa but may be hazardous if mixed or spilled. Please observe the following guidelines:

- 1) A responsible person should handle pool chemicals. Keep out of reach of children.
- 2) For products requiring measuring, use a clean, dry, plastic scoop (or scoop provided in container). Do not interchange scoop or place wet scoop in container of chlorinating product, dedicate 1 scoop per product.
- 3) Use exact quantities specified, not more. Chemicals need to circulate for hours before retesting.
- 4) Never mix chemicals together. Add products separately and slowly. Most importantly Follow Directions that are listed each product label.
- 5) Never add water to chemicals. Add chemicals to water.
- 6) Handle all chemicals, liquid or dry, with care. Store products in a cool, dry, well ventilated place.
- 7) Always keep chemical containers closed when not in use. Replace cap on proper container.
- 8) Don't inhale fumes or let chemicals come into contact with eyes, nose or mouth.
- 9) In case of contact or if chemical is swallowed, follow emergency advice on product label or call doctor or local Poison Control Center (800-222-1222).
- 10) Don't allow chemicals to stand on concrete or wood decks. Clean up any spillage carefully and dispose of in a safe manner - we recommend washing into pool.
- 11) Don't smoke around chemicals.
- 12) Many chemicals such as chlorinating products are corrosive and should not be stored near metal products like bicycles, lawn mowers, cars, lawn furniture, etc.
- 13) We recommend broadcasting powder products across the deepest part of the pool with the pumps running in such a fashion that nothing rests on the pool floor

Know Your Water Chemistry

Your water's chemistry is the perfect place to start so you know what you are working with when it comes to your pool or spa. In order to have properly balanced and sanitized water, it is necessary to test for different chemical parameters to verify that proper ranges are maintained. It's always a good idea to have your water tested professionally, but monitoring your water chemistry with at-home tests are a good idea.

No matter which method of sanitization you use, you need to test your pool's water daily and your spa or hot tub's water daily in order to keep it properly balanced. During heavy usage and summer months, you should perform a test after swimming. Anytime you notice a change in water quality, check the water quality with your at-home test kit. You will notice patterns during the swimming season which should be recorded in a small notebook that is kept with your test kit.

Proper Testing Procedures

Using a quality DPD test kit:

- 1) **Representative water samples:** Water samples should be taken at least 18" below the water surface and away from the return line. Insert a clean plastic bottle, bottom-side up, to the required depth and turn the bottle top side up to get a sample of water for testing.
- 2) **Proper sample volume:** To get accurate measurements, make sure the sample size is correct. All water samples will display a curvature at the surface of the water in the test cell. Always fill the cell so that the low point rests on the fill mark. Have the fill mark line at eye level when filling the sample container.
- 3) **Match your colors:** Matching colors in colorimetric determinations is done by holding the comparator up to northern light.
- 4) **Swirl . . . swirl . . . swirl:** Proper results depend on either color comparisons or detection of a color change (endpoint). For this to happen, reagents must be thoroughly mixed in the water sample.
- 5) **Correct drop size:** When adding any reagent drop-wise to a water sample, hold the dropper bottle vertically (straight up and down). Holding the bottle at an angle while adding reagent may distort the drop size and lead to inaccurate results.
- 6) **Prepare for the next test:** After testing, flush out sample cells with tap or fresh sample water to avoid any residue from interfering or contaminating the next test.
- 7) Always follow manufacturer's instructions.
- 8) Record your test data in a notepad for future reference and when possible record water temperature.

Test Strips:

Test strips are a quick and easy way for pool and spa owners to check their pool's water chemistry in an instant.

- 1) For Spas and Hot Tubs: turn off spa jets prior to testing.
- 2) Immerse strip and swirl 3 times in a one foot circle.
- 3) Raise strip from water face up and keep level to avoid reactant on strip pads from running. Do not shake off excess water.
- 4) Compare results beginning with the end pad. Starting with the Free Chlorine or Bromine and end with the Total Hardness pad. This order allows for the correct reaction time for the different pads.

Water 101

Recommended Levels for Pools

| | Minimum | Ideal | Maximum |
|--|---------|-------------|---------|
| Free Chlorine (ppm) | 1.0 | 1.0 – 3.0 | 5.0 |
| Bromine (ppm) | 2.0 | 2.0 – 4.0 | 4.0 |
| pH | 7.2 | 7.4 – 7.6 | 7.8 |
| Total Alkalinity (ppm as CaCO ₃) | 60 | 80 – 120* | 180** |
| *Maximum for gunite pools | | | |
| **Maximum for vinyl pools | | | |
| Calcium Hardness (ppm as CaCO ₃) | 150 | 200 – 300 | 400 |
| Cyanuric Acid (ppm) | 10 | 30 – 50 | 100 |
| *Not permitted in New York State Facilities | | | |
| TDS (ppm) | 300 | 1000 – 2000 | 3000 |
| ORP | 650mV | — | — |
| Ozone (low output generator) | — | — | 0.1*** |
| Ozone (above pool level) | 0 | 0 | 0.05 |

Recommended Levels for Spas and Hot Tubs

| | Minimum | Ideal | Maximum |
|--|---------|-------------|---------|
| Free C (ppm) | 2.0 | 3.0 – 5.0 | 10.0 |
| Bromine (ppm) | 2.0 | 3.0 – 5.0 | 10.0 |
| pH | 7.2 | 7.4 – 7.6 | 7.8 |
| Total Alkalinity (ppm as CaCO ₃) | 60 | 80 – 120 | 180 |
| Calcium Hardness (ppm as CaCO ₃) | 150 | 200 – 350 | 400 |
| TDS (ppm) | 300 | 1000 – 2000 | 3000 |
| Temperature | — | — | 104°F |

Dosages Required to Chemically Treat 10,000 Gallons

| SANITIZER | 1 ppm | 5 ppm | 10 ppm | |
|-------------------------------------|------------|----------|---------|---|
| PHOENIX SUPER SHOCK | 2 oz. | 10 oz. | 21 oz. | Calcium Hypochlorite...68% |
| PHOENIX CLORO POOL | 13 fl. oz. | 1/2 gal. | 1 gal. | Sodium Hypochlorite...12.5% |
| PHOENIX CLEARCHLOR LITHIUM | 4 oz. | 1.2 lb | 2.37 lb | Lithium Hypochlorite...29% |
| PHOENIX DICHLOR GRANULAR | 2.5 oz. | 12 oz. | 24 oz. | Sodium Dichloro-s-Triazinetrione Hydrated...99% |
| PHOENIX GIANT TABS, PHOENIX STIX | 1.5 oz. | 8 oz. | 15 oz. | Trichloro-s-Triazinetrione...99% |

Calculating Your Pool or Spa's Volume

It's key to know your pool or spa's volume in gallons as this will help you to determine the amount of treatment chemicals to add. To find out how many gallons of water your pool contains, use the formula that best applies to your pool:

First - Calculate the average depth:

Deep End Depth + Shallow End Depth = Depth ÷ 2 = Average Depth (in feet)

Second - Calculate Pool / Spa Volume

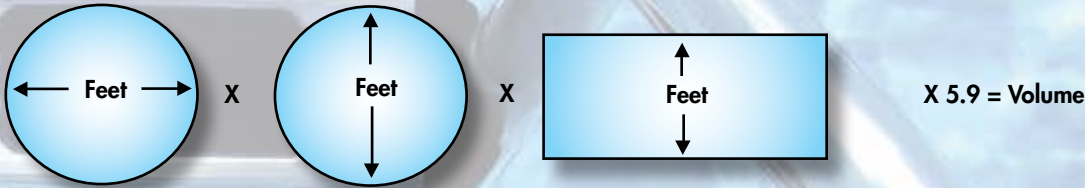
Rectangular or Square Formula

Length x Width x Average Depth x 7.5 = Total Gallons



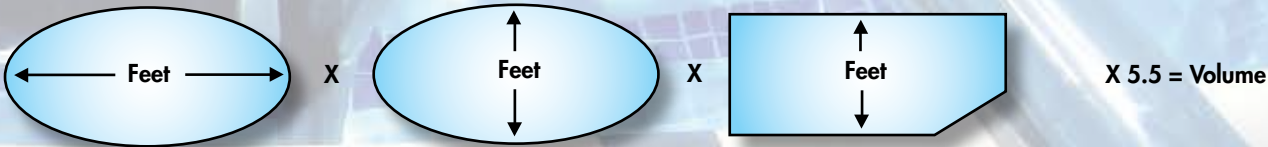
Circular Formula

Diameter x Diameter x Average Depth x 5.9 = Total Gallons



Oval Formula

Long Diameter x Short Diameter x Average Depth x 5.5 = Total Gallons



For Pools with Irregular Shapes or Sloping Sides

Long Diameter x Short Diameter x Average Depth x 5.5 = Total Gallons x .85 = Adjusted Total Gallons

Your Pool Sanitizer is _____ Your Pool Volume is _____

Your Spa Sanitizer is _____ Your Spa Volume is _____



Balance

Balancing Water

Water balance is an important part of pool and spa maintenance allowing the disinfecting and sanitizing chemicals to work more efficiently, and water more enjoyable to swim in. It is also important to prevent damage to equipment and allow the chemical products to work at their maximum efficiency. This balance is constantly changing due to swimming, rain, pollen, suntan lotions, dirt, and cosmetics entering the water.

Total Alkalinity

Total alkalinity is the measure of the water's ability to resist changes in pH... that is... the ability to "buffer" water from wide pH swings. Total alkalinity helps protect equipment, pool surfaces, maximizes sanitizer efficiency and makes the water more comfortable. Low total alkalinity may be caused by make-up water or other chemicals used to maintain the pool. Low alkalinity makes it hard to control the pH which could lead to corrosive water and damage equipment. High alkalinity can cause cloudy water and water that is difficult to manage.

Phoenix Buffer Plus - Raises total alkalinity level safely in pool water. You should maintain the level of alkalinity in your pool water at 150ppm. This is an important step in keeping control of your pool. One pound of Buffer Plus added to 1,000 gallons of pool water will increase your alkalinity level by 75 ppm. While the water is circulating, broadcast Buffer Plus across the deepest part of the pool

Calcium Hardness

Calcium hardness is the measure of dissolved calcium minerals in the water. Water that has a low level of calcium hardness will tend to be aggressive, causing equipment corrosion and etching of tile, grout, plaster and surrounding masonry. Water with high levels of calcium hardness can become cloudy and if not carefully balanced, come out of solution and form scale deposits on the surface of the pool.

Phoenix Reserve - Raises calcium hardness level safely in pool water. You should maintain the level of calcium in your pool water at 200 ppm in vinyl and fiberglass pools and 300 ppm in concrete and plaster pools. This is an important step in keeping control of your pool. One pound of Reserve added to 1,000 gallons of pool water will increase your calcium hardness level by 80 ppm. While the water is circulating, broadcast Reserve across the deepest part of your pool.

Phoenix Stabilizer - Raises the cyanuric acid level safely in pool water. You should maintain levels between 40 - 60 ppm to receive maximum efficiency from your sanitizer. Two pounds of Stabilizer added to 5,000 gallons of pool water will increase the cyanuric acid level by 50 ppm. For pools using stabilized chlorine, add one pound per 5,000 gallons.

Phoenix Calcium Reducer - Effectively reduces calcium hardness in pool water. Calcium Reducer is a uniquely formulated blend compatible with all sanitizing systems, restores water clarity and inhibits scale formation. When applied as directed Calcium Reducer will reduce calcium levels to the ideal range of 200-400 ppm. How to treat: 1 quart per 20,000 gallons will reduce calcium 100-150 ppm. 1 quart per 30,000 gallons will reduce 80-100 ppm. Add the recommended dosage of Calcium Reducer by pouring around the pool perimeter. Maintain water circulation for at least 12 hours each day, during the treatment period. Backwash filter as necessary. Allow up to 3 weeks to reach final calcium hardness level.



For Your Spa or Hot Tub -

There are some things to consider before you fill your spa or hot tub that will help with balancing properly. Try not to use soft water. Bypass your softener if you can. Run water through the hose for a couple of minutes before you place it in the spa, this allows the hose to be flushed free of any contaminants.

Serena Spa® Spa Care Alkalinity - Designed to raise the total alkalinity of your spa or hot tub. A fast acting product designed to maintain proper pH as well as eliminate pH bounce. Maintain total alkalinity level within the range of 100-150 ppm. One ounce of Alkalinity in 400 gallons of water raises the level 10 ppm. While the spa water is circulating, broadcast evenly around the spa. Wait 15 minutes and retest the pH. After two hours retest and repeat procedure if necessary.

Serena Spa® Spa Care Liquid Calcium Balancer - Increases water hardness and helps prevent corrosion due to soft water. Liquid Calcium is the convenient way to bring water hardness into the proper range. Low hardness indicates improper water balance and could result in corrosion of equipment and spa surfaces.

Serena Spa® Spa Care pH Up - Designed to raise pH & softens spa or hot tub water. Add pH Up at the rate of 1 oz. (2 tbsp) per 500 gallons of water. This dosage will increase the total alkalinity approximately 10 ppm and may be added directly to the spa or hot tub when pump is on high speed. After initial application, allow water to circulate approximately 2 hours. Retest total alkalinity and add second dose of pH Up if required. Continue process until total alkalinity falls in desired range of 80 to 150 ppm. Once proper total alkalinity has been attained, test for a proper pH range of 7.2 to 7.8. If pH needs to be raised, use pH Up at a rate of 1/2 oz. for spas up to 500 gallons. Wait 30 minutes, retest and adjust as necessary.

Serena Spa® Spa Care pH Down - Designed to lower pH of your spa or hot tub water. To lower pH, run the spa on high speed and pre-mix 1/2 oz. (1 tbsp) of pH Down with some spa water. To apply, walk around the spa, distributing mixture inside perimeter of spa. Wait 15 minutes and retest the pH. Repeat steps as necessary to achieve a pH between 7.2 and 7.8. NOTE: Never add more than 4 oz. of pH Down within any 24 hour period.

Serena Spa® Spa Care pH Hold - Specially formulated to lock in the vital pH level of spa water, especially hard water. pH Hold is intended for use in freshly filled spas, but can also be added to existing spa water that is properly balanced. Add 16 oz. (half the bottle) of pH Hold for up to 250 gallons of spa water or the entire contents for up to 500 gallons. Pour directly into spa. Turn on jets and allow water to circulate for 15 minutes. Temporary cloudiness may occur, but the water will clear quickly once pH Hold has completely dissolved. Repeat the application each time you refill your spa with fresh water. It is recommended that you refill every 3 months.





Balance

Importance of pH

Once water balance is achieved, the next step is bringing your pH into range. So why is pH important? Measured on a scale that runs from 0 to 14, pH indicates whether the water is acidic, neutral or basic (alkaline). On the scale 7.0 is neutral, a pH below 6.0 is acidic and a pH above 8.0 is basic. The ideal range for pools and spas is slightly on the basic side of the scale at 7.2 - 7.8. When pH is too low, staining, corrosion, and eye irritation can occur. (Science fact: your eye's pH is 7.5.) When pH is too high scaling, cloudy water, poor chlorine disinfection, and eye irritation can occur.

Causes of pH Change

Everything affects the pH of your pool water. From swimmer's sweat and body oils, to rain fall, make up or new pool plaster. Most often it is the sanitizer we are using to keep our pool water clean and safe.

The following are some of the common causes of pH change:

Lower pH

- Phoenix Giant Tabs, Tiny Tabs and Stix are sanitizers that lower pH
- Phoenix ClearBrom Bromine Tablets is a sanitizer that lowers pH

Raise pH

- Phoenix Cloro Pool is a liquid sanitizer that raises pH
- Phoenix Super Shock is a sanitizer that raises pH
- Phoenix ClearChlor Lithium is a sanitizer that raises pH

A common cause of increases in pH are due to Chlorine Generators

Phoenix pH Up - Safely and effectively raises pH of pool water.

While the pool water is circulating, broadcast this product directly into the deepest end of the pool at a rate of 1 lb. per 10,000 gallons of water. Apply daily as needed until the pH is brought into range.

Phoenix pH Down - Safely and effectively lowers pH of pool water.

While the pool water is circulating, broadcast this product directly into the deepest end of the pool at a rate of 1 lb. per 10,000 gallons of water. Apply daily as needed until the pH is brought into range.

Puracil Purate - Adds an additional layer of protection against algae blooming by increasing the efficacy of the other chemicals in the water.

A liquid borate designed specifically for the all types of sanitizing systems. Prevents almost every problem chlorine free systems have experienced by maintaining a conservative level of Purate in the water.

For Your Spa or Hot Tub -

Serena Spa® Spa Care pH Up -

Designed to raise pH & softens spa or hot tub water.

Directions:

Add pH Up at the rate of 1 oz. (2 tbsp) per 500 gallons of water. This dosage will increase the total alkalinity approximately 10 ppm and may be added directly to the spa or hot tub when pump is on high speed. After initial application, allow water to circulate approximately 2 hours. Retest total alkalinity and add second dose of pH Up if required. Continue process until total alkalinity falls in desired range of 80 to 150 ppm. Once proper total alkalinity has been attained, test for a proper pH range of 7.2 to 7.8. If pH needs to be raised, use pH Up at a rate of 1/2 oz. for spas up to 500 gallons. Wait 30 minutes, retest and adjust as necessary.

Serena Spa® Spa Care pH Down -

Designed to lower pH of your spa or hot tub water.

Directions:

To lower pH, run the spa on high speed and pre-mix 1/2 oz. (1 tbsp) of pH Down with some spa water. To apply, walk around the spa, distributing mixture inside perimeter of spa. Wait 15 minutes and retest the pH. Repeat steps as necessary to achieve a pH between 7.2 and 7.8.

NOTE: Never add more than 4 oz. of pH Down within any 24 hour period.

Serena Spa® Spa Care pH Hold -

Specially formulated to lock in the vital pH level of spa water, especially hard water. Serena Spa Spa Care pH Hold is intended for use in freshly filled spas, but can also be added to existing spa water that is properly balanced.

Directions:

Add 16 oz. (half the bottle) of Serena Spa Spa Care pH Hold for up to 250 gallons of spa water or the entire contents for up to 500 gallons. Pour directly into spa. Turn on jets and allow water to circulate for 15 minutes. Temporary cloudiness may occur, but the water will clear quickly once pH Hold has completely dissolved. Repeat the application each time you refill your spa with fresh water. It is recommended that you refill every 3 months.

NOTE: If local water conditions are extreme or your spa usage is heavy, use pH Up or pH Down to bring the pH into the range of 7.2 - 7.8. Once you have achieved the desired pH level, then follow the directions above. Once pH Hold is added, it will lock in the pH level.

Serena Spa® Spa Care Purate for the Spa -

Adds an additional layer of protection against algae blooming by increasing the efficacy of the other chemicals in the water. A liquid borate designed specifically for the all types of sanitizing systems. Prevents almost every problem chlorine free systems have experienced by maintaining a conservative level of Purate in the water.



Sanitizing Water

Why Sanitize?

Sanitation is the reduction of the level of micro-organisms (living cells so small they can only be observed through a microscope) by significant numbers (usually 99.9% or more) to safe levels as established by state or federal authorities.

Sanitizing your pool not only gets rid of dust, dirt, rain, algae, and fungi from nature but also eliminates bather waste. Bather waste is a term we use to describe the bacteria, viruses, and products that all humans put on, carry and collect throughout the day just by living. Products such as deodorant, hair spray, and sun tan lotion can rub off in the water. Perspiration, body oils, bacteria and viruses also enter your pool simply by enjoying the water after a long day.

The following information describes different methods for water sanitation. As with all the topics covered in this guide, if you have any questions or doubt, your dealer will be happy to assist!

Chlorine Chemistry

The most popular pool and spa sanitizer is chlorine. When we add Cl_2 (chlorine) + H_2O (water), we get a chemical reaction which produces HOCl (hypochlorous acid). The hypochlorous acid molecules work to disinfect your water killing micro-organisms and bacteria. These molecules also oxidize, meaning they destroy contaminants and waste. The whole process of removing organics and micro-organisms consumes the chlorine in your water. This consumption is called the chlorine demand. Have you ever had that obnoxious "chlorine" smell assault you the moment you get near a pool or spa? Was your first thought, "there's too much chlorine in the water!" Then, once in, your eyes turn a scary shade of red? Hard to believe, but these issues are clear indication that there is not enough chlorine to keep up with demand. Ever open up a gallon jug of chlorine bleach and take a whiff? It smells fresh and clean and so does your pool or spa when the chlorine levels are just right. If you do get that strong chlorine smell, a 'super dose' of chlorine may be required to correct the problem which brings us to superchlorination or shocking. Shock treatment adds a larger than normal amount of oxidizing chemicals to pool water. This additional dose destroys organic contaminants and oxidizes ammonia and nitrogen compounds to rid the area of irritating chloramine odor and to sanitize the water. Shocking should be done about once a week with the pump and filter operating, but after sundown to avoid the loss of chlorine to the sun's ultraviolet rays and to allow sufficient time for chlorine levels to return to normal before swimming again.

Phoenix Giant Tabs - (89% Available Chlorine)

These tablets are manufactured with the most concentrated form of dry chlorine available today. They are slow dissolving to allow you to reliably dose your pool once a week. These tablets contain cyanuric acid - a stabilizer that prevents ultraviolet light from removing the available chlorine from the pool. These tablets allow you to easily maintain proper chlorine residuals and help you to effortlessly produce beautiful, clean sparkling water. For use in chlorinators and automatic feeders. (also Available in Stick Form as **Phoenix Stix**)

Phoenix Dichlor Granular - (56% Available Chlorine)

Dissolve this product in a clean plastic bucket stirring with a clean plastic spoon. Add this product to water, NEVER add water to this product. Maintenance Dose: Add 4 ounces per 10,000 gallons as an initial treatment. Repeat until a residual of 1-3 ppm chlorine is established. For superchlorination, use 1 pound per 10,000 gallons. To prevent damage to pool surface, use a pool brush to disperse any granules that have settled to the bottom of your pool. Keep filter system running for at least 12 hours after treatment. Frequency of treatment is dependent on ambient temperatures, light intensity, and bather load. Do not reenter pool until chlorine level has dropped to 3.0 ppm or lower.

Bromine Chemistry

Bromine is a powerful and effective sanitizer. Use it as an alternative to chlorine, especially in spas, hot tubs and indoor pools. The use of bromine is significantly different from chlorine and the methodology to use this sanitizer also differs. The difference between chlorine and bromine is that once chlorine combines with bacteria or harmful organics to kill them, most of the chlorine is used up. When bromine combines with bacteria in water, the bromine is still active but combined with the bacteria and organic matter to neutralize these harmful contaminants. When shocking bromine treated water; the shock treatment only burns off the harmful contaminants, and leaves a good portion of the bromine behind which is available to sanitize the water again.

Phoenix ClearBrom - (Brominating Mini Tabs)

Slow dissolving bromine tablets for pools.

A bromine residual of 1-2 ppm must be first established in the pool. If the residual is established with this product in a brominator, use at the highest feed rate following manufacturer's recommendations. When the bromine residual reaches 1-2 ppm, adjust the feeder accordingly. To maintain bromine residual, adjust the brominator feed rate to assure a constant treatment level of 1-3 ppm in residential pools and 3-5 ppm in commercial pools.

For Your Spa or Hot Tub -

Serena Spa® Spa Care Granular Dichlor -

Effective spa and hot tub sanitizer. For maintenance doses: With pump on, add 1/2 teaspoon of this product per 100 gallons of water (or 5 teaspoons per 1,000 gallons) as an initial treatment. Repeat at 15 to 20 minute intervals until a residual of 3 to 5 ppm of available chlorine is established. For superchlorination: Use one teaspoon of this product per 100 gallons of water (or 1/4 cup per 1,000 gallons). Superchlorination may be needed on a nightly basis in a heavily used spa or as infrequently as once a week in a moderately used spa. Frequency of treatment is dependent on ambient temperatures, light intensity, water replacement and bather load. Reentry is prohibited above levels of 3 ppm chlorine due to risk of bodily injury.

Serena Spa® Spa Care Brominating Tabs - Fill spa bromine feeder with tabs and adjust feeder following manufacturer's directions to yield bromine residual between 2-4 ppm in residential spas and 4-6 ppm in commercial spas. Check feeder regularly and add additional tabs as needed to maintain the bromine residual.

Serena Spa® Spa Care Brom Bank for Spas - A clear solution of bromide salts which remain as a stable bank in the spa/hot tub water. This product has no disinfectant qualities and it is only when Serena Spa® Spa Care Brominating Tabs are added that bromide is released into the water containing this product. This product should be added when the spa/hot tub is filled and weekly thereafter to maintain a bank of bromide in the water. First treat the spa/hot tub with Serena Spa Spa Care® Stain & Scale Preventer according to its label directions. Then, add this product 4 oz. to 250 gals. directly into the spa/hot tub. Circulate the water while adding this product to assure rapid and thorough distribution. Weekly, thereafter, add this product 1 oz. to 250 gals. to maintain a sufficient bank of bromide in the water. Test the bromide residual at least once every day with a bromide/pH test kit. The bromide residual must be between 1-3 ppm for residential spa/hot tubs and 3-5 ppm for commercial installations. Heavy usage, or the length of time the spa/hot tub is in use may result in depletion of bromide and require additional dosages of Serena Spa Spa Care® Brominating Tabs and/or this product to maintain the desired bromide residual. Never mix any chemical with each other before adding to the spa/hot tub water. Change water monthly or as needed to maintain water quality.



Shock

Why Shock?

Phoenix Oxy-Clean

Oxy Clean (Potassium Peroxymonosulfate) is an alternative to chlorine-based shocking, particularly in situations where bathers may have allergic reactions to chlorine.

- Contains no chlorine – will not produce chloramines or generate chlorine odors.
- Will not damage vinyl liners. By-products are harmless sulfate salts.
- Completely soluble in water – dissolves quickly at normal pool temperatures.
- Permits same-day shock and swim. Swim within 30 minutes after use.

Light/Medium Pool Use: 1 lb. Oxy-Clean per 10,000 gallons of pool water every two weeks. Heavy Pool Use: Use 1 lb. Oxy-Clean per 10,000 gallons every week. Add by broadcasting evenly around the pool perimeter with filter pump in use. NOTE: Oxy-Clean is used only as a shock treatment and it will not replace the need for regular use of a pool sanitizer such as chlorine or bromine.

Phoenix Clearchlor Lithium - (35% Available Chlorine)

The ultimate water sanitizer! Sparkling water, simply and easily. After filling or at the start of each season, initially, two (8 oz.) cups of Clearchlor per 5,000 gallons of pool water is added to develop the proper chlorine level of 1-2 ppm. To prevent chlorine decomposition and provide a balanced, economical pool sanitation program, add Stabilizer. The available chlorine content of the swimming pool should be maintained between 1.0 - 3 ppm. Under normal conditions, this can be maintained by adding daily 2.7 oz. (1/3 cup) of Clearchlor for each 5,000 gallons of pool water. Severe conditions such as high temperatures or excessive use will require a higher daily dosage. The pool water should be superchlorinated once a week - five times the normal addition, or a minimum of one cup (8 oz.) per 50,000 gallons of pool water should be added in the evening when the pool is not in use for a minimum of 12 hours. If the chlorine residual is above 2 ppm, usage of the pool should not be permitted until it is decreased.

Phoenix Cloro Pool Shock - (12.5% Available Chlorine)

For a new pool or spring start-up, superchlorinate with 52 to 104 oz. of this product for each 10,000 gallons of water to yield 5 to 10 ppm available chlorine. To maintain the pool, add manually or by a feeder device 11 oz. of this product for each 10,000 gallons of water to yield an available chlorine residual of between 0.6 to 1.0 ppm. Stabilized pools should maintain a residual of between 1.0 to 1.5 ppm available chlorine. Frequency of water treatment will depend upon temperature and number of swimmers. Every seven days, or as necessary, superchlorinate the pool with 52 to 104 oz. of this product for each 10,000 gallons of water to yield 5 to 10 ppm available chlorine by weight. Do not re-enter the pool until the chlorine residual is between 1.0 and 3.0 ppm.

Phoenix Super Shok - (68% Available Chlorine)

For a new pool or spring start-up, superchlorinate with 10 to 20 oz. of Super Shok for each 10,000 gallons of water to yield 5 to 10 ppm available chlorine. To maintain the pool, add manually or by feeder 2 oz. of Super Shok for each 10,000 gallons of water to yield an available chlorine residual between 0.6 to 1.0 ppm. Stabilized pools should maintain a residual of 1.0 to 1.5 ppm available chlorine.

Phoenix Dichloro Granular - (56% Available Chlorine)

Dissolve this product in a clean plastic bucket stirring with a clean plastic spoon. Add this product to water, NEVER add water to this product. Maintenance Dose: Add 4 ounces per 10,000 gallons as an initial treatment. Repeat until a residual of 1-3 ppm chlorine is established. For superchlorination, use 1 pound per 10,000 gallons. To prevent damage to pool surface, use a pool brush to disperse any granules that have settled to the bottom of your pool. Keep filter system running for at least 12 hours after treatment. Frequency of treatment is dependent on ambient temperatures, light intensity, and bather load. Do not reenter pool until chlorine level has dropped to 3.0 ppm or lower.

For Your Spa or Hot Tub -

SerenaSpa™ Oxy Clean - Oxy Clean is a non-chlorine buffered oxidizer. This product is stable at all hot tub temperatures. It is compatible with most chemicals that are normally used to treat hot tub water. Add 1 oz. of Oxy Clean after each use of your hot tub. Weekly Use (Maintenance): Once a week or whenever the water becomes cloudy, add 3 oz. of Oxy Clean to your hot tub water as a Maintenance dose. Swimmers may reenter spa 30 minutes after use.

The Science of Salt Water

There is a funny misconception when it comes to salt water pools and spas, the thought that a salt water pool or spa is similar to ocean water is not an accurate one. Salt water pools and spas consists of a mild saline solution, one which makes you feel refreshed, your skin soft and the water smooth. The salt level in a salt water pool or spa is between 2,700 to 4,000 ppm (parts per million). At 5,000 ppm you will be able to taste the salt in the water, but even with salt levels slightly high, it will never come close to the salt content of ocean water, which is about 35,000 ppm.

Another misconception is that salt water pools or spas are chlorine free. The #1 benefit of having a salt water pool or spa is that it utilizes the salt to generate chlorine. A chlorine generator's main function is to produce chlorine for the pool so you do not have to store or handle chlorine. The secret is through the process of electrolysis. Salt water passing over the chlorine generator cell produces a chlorine gas that is instantaneously transformed into Hypochlorous acid. Hypochlorous acid is the active sanitizer all chlorine products produce, which kills algae and bacteria in the water. Its effectiveness is dependent on correctly balanced water conditions. While the pump is running, chlorine generators produce chlorine constantly. This keeps a residual of chlorine in the pool or spa that prevents algae growth and maintains sanitation.

To keep your salt water pool or spa working properly, keep the generator cell clean and free of calcium and mineral deposits. The cell itself is made up of precious metals, and it must be maintained so it can continue to make chlorine. If you do not maintain the chlorine generator properly or maintain your pool or spas chemistry, you can damage the interior finish, decking, and equipment. Generator cell care is crucial, which is why we have created a very unique Saline Support Program. Our Saline Support System includes products that address the key concerns with maintaining salt water pools and chlorine generators. Our program is designed to make maintaining salt water pools simple and easy. Each product addresses the specific needs of a salt water pool with a step by step dosing method. These advanced lab formulas will help extend cell life to effectively maintain your salt water pool or spa.



Algaecide

Preventing and Treating Algae

Algae Formation

Algae are single-cell plants containing chlorophyll and are one of the hardiest and most widespread living organisms on this planet, existing in over 30,000 different varieties. Algae require warm water, sunlight, and carbon dioxide to grow. Pool and spa water has the potential of providing just such an environment. When conditions are right, an algae bloom can occur seemingly overnight so instead of dealing with algae after the fact; which requires work and effort (and money!) to rid the water completely of algae, it is better to use preventative chemicals and keep algae at bay.

There are three main categories of algae:

- 1) **Green Algae** – usually floating algae, but sometimes clings to walls. Pool water becomes turbid with a green growth that renders the pool uninviting and dangerous to use by making it difficult to see the bottom of the pool. Before green coloration appears, sides of the pool have a slippery feel, water becomes hazy, and exhibits a high chlorine demand.
- 2) **Mustard (Yellow) Algae** – appears as a yellow powdery deposit on the pool, usually on the shady side. Once established, it is chlorine-resistant and can exist in the presence of 3-5 ppm Free Chlorine.
- 3) **Black (Blue-Green) Algae** – evident by the formation of dime to quarter-size black (or blue-green) spots, tenaciously adhering to the pool's surfaces. Black algae forms a layered structure where the first layers, which may be killed by chlorine, protect underlayers from further destruction. Black algae, like mustard algae, is also chlorine-resistant.

Phoenix Algae Blast – For fast treatment of yellow and mustard algae in swimming pools. Algae Blast clears water quickly and can be used in any type of swimming pool. Swimming may be resumed several hours after treatment. All dosages are for 10,000 gallons of water. Brush walls and floor areas affected by yellow algae accumulations. Apply 4 oz. of Algae Blast per 10,000 gallons as close to the affected areas as possible. For severe accumulations, double the above dosage. Activate by shocking based on your pool's sanitation type following directions of that product's label. Swimming may be resumed a few hours after treatment. Weekly maintenance: To prevent accumulation of yellow algae: For water temperature over 80°F, add 4 oz. Algae Blast with 1 gallon liquid chlorine or 1 pound of a dry chlorine once a week. For water temperature under 80°F, add 2 oz. Algae Blast weekly and ½ gallon liquid chlorine or ½ pound of a dry chlorine.

Phoenix CU7 Algaecide- (7% Copper)

Made especially to control growth of algae and bacteria growth in all types of swimming pools. Its long lasting action will control existing algae and subsequent doses will control recontamination by algae. Swimming may be resumed immediately after using this product. This product comes concentrated. Dilute with at least nine parts of water before applying. Dilution rate for 10,000 gallons of water is 4 oz. for initial treatment and 2 oz. once every two weeks. Pour required amount into a clean plastic watering can, fill with water and sprinkle around edge of pool. Apply initial treatment to a freshly filled pool or at first visible signs of algae growth. Apply under sunny conditions for most effective results.

Phoenix Poly 60 Algaecide (Also available in Poly 15 and 30)– Algaecide used to control the growth of algae in swimming pools, exterior spas, whirlpools, hot tubs, and decorative fountains.

Treats

For maximum effectiveness pools, spas, whirlpools, hot tubs, and decorative fountains containing heavy growth of algae should be cleaned prior to using Poly-60 Algaecide. For pools having just visible algae growth add an initial dose of 11 to 17 oz. per 10,000 gallons of water and remove settled algae debris by cleaning.

For treatment of a freshly cleaned and filled pool add initially 6 to 11 oz. per 10,000 gallons of water.

Subsequent additions of 2 to 4 oz. per 10,000 gallons of water should be made every 5 to 7 days after initial treatment for maintenance. Spas, whirlpools, hot tubs, and decorative fountains having just visible algae growth require an initial dose of 1 to 2 oz. per 1000 gallons of water. For treatment of a freshly cleaned and filled spa, whirlpool, hot tub, or decorative fountain, add initially 0.6 to 1.1 oz. per 1000 gallons of water. Subsequent additions of 0.2 to 0.4 oz. should be made every 5 to 7 days after initial treatment for maintenance.

Phoenix Algem Concentrate – Swimming pool algaecide supplement effective against green, black, blue-green, and mustard algae. Keeps water free of algae and slime.

Do not allow swimming in pool for at least 15 minutes after this product has been applied. Initial application: Vacuum algae debris to waste and thoroughly brush pool. Add 5.25 oz. of this product to each 10,000 gallons of water, adding directly into pool by pouring around perimeter of pool. Vacuum pool after 24 hours to remove dead algae. If algae is still visible repeat dose as necessary until pool is free of visible algae. Once algae is under control, clean filter. Maintenance dose: Add 1.25 oz. of this product to 10,000 gallons of pool water. Maintenance dose should be added weekly. If high temperatures prevail or pool has unusually heavy use, add maintenance dose more frequently.

Phoenix Algem II – Add 26.25 oz. of this product to 10,000 gallons of pool water. Wait 15 minutes before entering pool. Vacuum pool after 24 hours to remove algae debris. When pool is free of visible algae, use the recommended maintenance dose. Maintenance dose: Add 6.25 oz. of this product to 10,000 gallons of pool water. If make-up water is added at the rate of more than 10% per week of pool capacity, add 2.5 oz. for each 1,000 gallons of fresh make-up water added. Maintenance dose should be added weekly. If high temperatures prevail, pool has unusually heavy use or after a heavy or prolonged rainfall, add maintenance dose more frequently.

Phoenix 3 Month Algaecide – Single treatment kills & prevents all types of algae growth for 3 months! Every three months: Add 16 fl. oz. 3 Month Algaecide per 10,000 gallons pool water will prevent algae growth in all pool types. Severe algae treatment: 32 fl. oz. 3 Month Algaecide per 10,000 gallons pool water. Add 3 Month Algaecide directly to the pool, distributing it over as wide an area as possible.

Phoenix Summer Algaecide – Effective in controlling existing algae, and subsequent doses will control recontamination by algae.

The treated water may be used immediately. NO WAITING.

This product under field conditions, has shown to be effective in controlling mustard and black algae. The triethanolamine complex used in this product prevents the precipitation of the copper with the carbonates or bicarbonates in water. Apply an initial treatment to a freshly filled pool or at first visible signs of algae growth. Add a maintenance dose every two weeks.

Pour the required treatment amount of this product into a plastic watering can, fill with water, and sprinkle the diluted product around the edge of the pool. For best results, the mixture should be distributed equally around the edge of the pool.



Problem Solving



Cloudy, dingy, hazy, murky...

No matter what word you use to describe it, when confronted with cloudy pool or spa water, confusion often results because there are several different reasons for water to become cloudy. Cloudy, or turbid water is the result of the presence of suspended solids in the water.

The key causes of cloudy water:

1) Filtration/Circulation: If a filter is not properly functioning, cloudy water is your first sign. For pools, check to see if the water flow is restricted by a malfunctioning pump, circulation stoppage, or lack of backwashing the filter. For spas and hot tubs, inspect filter cartridge for tearing and cracking. For both pools and spas, clean filter if necessary.

2) Water Balance/Mineral Levels: If the water is out of balance on the scaling side, suspension of calcium carbonate particles is possible. By balancing pool water, the calcium carbonate will go back into solution and turbidity will clear up.

3) Algae Formation: Pools -Formation of algae which has not yet bloomed, will cause the pool to cloud. This type of turbidity can be distinguished from other causes by noticing the slippery feel on the pool's surface. Shock the pool with 30 ppm chlorine to correct this problem.

Spas and Hot Tubs - Outdoor spas and hot tubs can (though rare) encounter algae problems especially if rarely used.

4) Heavy Bather load: A heavy influx of bathers at one time can overload a pool or spa with organics, causing turbidity. An effective preventative measure is a good shock treatment to clear the water and raise normal chlorine levels in anticipation of a heavy bather load.

Phoenix Stow Guard - Designed to clean, deodorize, and prevent mildew for pool and spa covers and solar caps. With cover still on, remove water, leaves, debris, etc. Remove cover and squirt Stow Guard over full area of cover. Using a nylon brush, scrub cover clean adding water to aid in loosening of dirt. Rinse loosened soil with water. If possible allow cover to dry thoroughly. Cover should be stored in a safe place.

Phoenix Phosphate Remover - Specialty maintenance product proven to eliminate phosphates from fertilizers, rain water, soaps and other pollutants. Phosphates are the key nutrient for algae, and if phosphate levels are too high the salt water generator will have a hard time keeping up with chlorine demand. Use weekly, if no algae is present: Use 1 ounce of Phosphate Remover per 5,000 gallons to maintain phosphate levels at or below 125 ppb (parts per billion).

If algae is present: Shock the pool. Brush pool surface and vacuum to filter. Test water using a phosphate test kit. Use dosage chart below to determine correct dosage. With filter running, disperse the proper amount of Phosphate Remover by adding it slowly around the edge of the entire pool and in front of the return line. Run filtration system for at least 24 hours. Watch the filter pressure and clean or backwash as necessary. Test for phosphate again.

Phoenix Super Phos - new and improved formula designed to remove very high levels of phosphates from your pool water. SuperPhos is a quick and economical way to correct this problem! Weekly, if no algae is present: Use 2.5 ounces of SuperPhos per 5,000 gallons to maintain phosphate levels at or below 100 ppb (parts per billion).

If algae is present: First add a dose of Phoenix 3 month Algaecide. Test water using a phosphate test kit. Use dosage chart below to determine correct dosage. With filter running, disperse the proper amount of SuperPhos by adding it slowly around the edge of the entire pool and in front of the return line. Run filtration system for 24 to 36 hours. Shock the pool. Brush pool surface and vacuum to filter. Watch the filter pressure and clean or backwash as necessary. Test for phosphates again.



Phoenix Filter Cleaner (Soaker) - A concentrated cleaning solution designed specifically for removal of oils, grease and soaps to restore filter to original condition. Clean filters will reduce pump electricity costs, and will decrease the potential for bacterial growth. For Cartridge and D.E. Filters: Use full strength on elements and brush clean, or soak elements in a solution of 1 part Filter Cleaner to 10 parts water. Soak for 3 hours or overnight. For Sand Filters: For filters up to 24" diameter tanks, use 16 oz. For filters with greater than 24" diameter tanks, use 32 oz. Add Filter Cleaner to pool skimmer with pump running and the filter in backwash.

Phoenix Instant Filter Cleaner - Removes scum, oils, minerals and scale from Spa & Pool Cartridges & D.E. Grids. Easy to use, no scrubbing. This special liquid formula works in minutes so you can continue to enjoy your spa or pool. It is recommended that you use every 4-6 weeks to maintain filter efficiency. Rinse filter cartridge or D.E. Grids thoroughly to remove any loose matter/debris. While wet, spray Instant Filter Cleaner on total surface area and allow to set for 3-5 minutes. Rinse thoroughly and reinstall in filter system. Note: It is recommended that 2-3 times a year that you soak the cartridge or D.E. element in a solution of Phoenix Filter Cleaner for 24 hours.

Phoenix Thick Tile & Vinyl Cleaner -

Designed specifically for removal of oil, grease, soaps, and waterline scum as well as restoring original sheen to pool surfaces. Safe and effective for vinyl, tile, ceramic, fiberglass and acrylic pool and spa surfaces. Spray or sponge Enzyme Tile & Vinyl Cleaner directly on dirty pool surface. Wipe with damp cloth or sponge and flush with pool or spa water. For hard caked-on oils and scum, apply Enzyme Tile & Vinyl Cleaner, let stand for one minute and use a nylon brush. Bubbles may appear in water around cleaning area, but will dissipate after several minutes.

Phoenix Super Pool-Pruf - Polymeric clarifier which cures cloudy water removing ultra-fine dirt particles and improves filter efficiency for sparkling pool water. Cloudy water can be caused by bacteria, poor water balance, algae, or fine particles of impurities. Super Pool-Pruf is a very low molecular weight, cationic flocculent that will combine tiny particles of dirt, dead algae and color into masses large enough for the filter to trap. Simple to apply and safe to handle, Super Pool-Pruf works well over a wide pH range and will not affect pool pH as does alum or alkali. Not affected by chlorine or bromine. The dosage of Super Pool-Pruf required depends on the amount of dirt, color, or particles present. Initially add 4 oz. of Super Pool-Pruf for every 20,000 gallons of pool volume. Just mix proper amount with 2-4 gallons of water, then distribute evenly around pool perimeter. Continue filter operation during full treatment period. If after 24 hours noticeable color or turbidity exists, a second treatment is recommended. Under normal conditions and following above recommendations, pool use can be resumed 2 hours after Super Pool-Pruf addition. Periodic treatment will keep pool water sparkling clear. Pool Openings: Use of Super Pool-Pruf will reduce the time required to restore clear water quality. 1 oz. per 2,500 gallons is recommended.

Phoenix Enzyme Pool Refresher - A unique stabilized enzyme system that catalyzes the bio-oxidation of body oils, suntan lotions and other organic contaminants. When used at the recommended dosage levels on a regular basis, Enzyme Pool Refresher provides multiple user benefits. Through the bio-oxidation process, it eliminates the primary components of the scum ring that forms around the water line of most swimming pools, which can also cause cloudy water, clog filters and shorten filter runs. Dosage: Initially add two ounces per 1500 gallons of pool water and thereafter one ounce per 1500 gallons per week. If the pool already has a scum ring, you may apply a concentrated dosage to the ring as a scrub or use Phoenix Tile and Vinyl Cleaner. Enzyme Pool Refresher can be used 3-5 days before or after shock treatments, but not in conjunction with.



Maintaining Clarity

Phoenix Flock - Coagulant clarifier helps clear cloudy water in swimming pools.

When Flock is added to the water it forms gelatin-like particles called "flocs" which trap small pieces of dirt and impurities and settles them to the bottom of the pool where they may be removed by vacuuming. Directions for settling: Apply 3-4 ounces of Flock per 1,000 gallons by broadcasting it over the surface of the pool as you walk around the edge. Do this with the filter off. Foreign material and Flock should settle to the bottom if the water is allowed to remain undisturbed overnight. After the debris has settled to the bottom remove with pool vacuum, sending water to waste. Do not filter the water from the vacuum during this operation. Directions for use as filter aid for sand filters: Backwash your filter. Using 3 oz. for each square foot of filter area, add Flock very slowly (over a period of 6-8 hrs.) through the intake of the filter or through the automatic surface skimmer. A gelatin-like layer will form over the top surface of the filter material removing many small particles that would otherwise pass through the filter and back into the pool. Liquid Floc can be used in place of dry flock.

Phoenix 4 in 1 Natural Clarifier - An all natural polymer from crustacean shells proven to be a superior clarifier for swimming pools, spas, fountains, water parks, ponds, aquariums. 4-in-1 Clarifier is environment friendly - will not harm plants, animals or fish.

When used weekly, 4-in-1 Clarifier clears cloudy water by coagulating all the tiny particles, oily liquids, and stain-causing metals that build up and deposits them in your filter where they stay until you flush them out. Any filter will leave a certain amount of material in your water. 4-in-1 Clarifier allows your filter to trap these impurities and hold them without clogging. The molecular structure of our biopolymer keeps it and the impurities it holds in the filter media, and not in the spaces that your water passes through. So, your filter can actually run longer between cleanings. Clean or backwash your filter if applying initial dose. Add desired dose, 1 ounce treats 500 gallons, across the water's surface, no premixing required. If your water is especially dirty you can double or triple the dose. Allow at least 1-hour of continuous filtration.

Serena Spa® Spa Care Clear Blue - Clear Blue is a cationic polymeric flocculent formulated to coagulate and floc fine suspended solids from spa and hot tub water. These solids, after the addition of Clear Blue, will be filtered out of the spa or collect on the bottom for removal. Initial Use: After filling the spa or hot tub, add Clear Blue directly to spa when pump is on high speed at a rate of 4 oz. per 500 gallons of water. Weekly Use: Add 2 oz. of Clear Blue per 500 gallons of water as a maintenance dose. For cloudy water, add approximately 2 oz. per 500 gallons until water is clear.

Serena Spa® Spa Care Foam Out - Foam Out is an exclusive formula that breaks up existing foam in spas, hot tubs, and whirlpools. Use Foam Out whenever troublesome, unsightly foam develops.

To Eliminate Foaming: Shake well and dispense approximately one capful of Foam Out onto the surface of the water while the water is being circulated. Wait 30 minutes and repeat treatment if foam has not subsided.

NOTE: If more than three capfuls of Foam Out have been used within a 24 hour period, it is recommended that you clean your filter(s) to prevent clogging with Serena Spa™ Filter Cleaner and test your water chemistry.

Serena Spa® Spa Care Naturally Clear - Use Naturally Clear to break down contaminants as soon as they enter your spa. Water is kept clear and odor free. Natural enzymes emulsify and biodegrade contaminants converting them into easy to remove compounds so the waterline and the filter can go longer between cleanings. Naturally Clear works to remove organics before they can interfere with sanitizer performance. This boost in sanitizer effectiveness keeps spas and hot tubs safe, while your spa experience is greatly improved. Naturally Clear may be used in hot tubs equipped with ozonators. To attain clean, clear, and odor-free spa and hot tub water, add an initial dose of Naturally Clear to spas up to 1 oz. to 100 gallons daily until water is clear. To maintain, add 1 oz. to 100 gallons weekly.

Maintaining Equipment

Serena Spa® Spa Care Cover Rejuvenator - Cover Rejuvenator has been formulated exclusively to effectively clean and restore luster to vinyl and other hard surfaces. Helps prevent fading and discoloration. Waterproofs leaving a protective silicone shield. Wipe surface with a mild detergent to remove excessive soiling. Dry cover thoroughly before applying this product. Shake this product gently and then apply liberally to the spa cover surface. Let stand on the surface 10 to 15 minutes to permit penetration. Wipe off excess with clean cloth and buff to high luster.

Serena Spa® Spa Care Jetline Cleaner - Jet Line Cleaner clears spa and jetted bath tub plumbing of organics, oils, dirt, and minerals. Add Jet Line Cleaner before the water is drained to prevent buildup that can restrict water flow and damage equipment. This product is compatible with all sanitizers including chlorine, bromine, ozone and biquanide. Use Jet Line Cleaner every 3 months or when the spa is drained and refilled. Before spa is drained, add entire bottle of Jet Line Cleaner to warm spa water through the skimmers. Turn pump on and run the jets for 15 minutes. (Ensure that filter is not in spa.) Turn pump and jets off and let sit for 1 hour. Turn pump on and run jets and blower for 15 minutes. Drain the spa, hosing off the inside spa walls while draining. When empty, rinse one last time.

Serena Spa® Spa Care Spa Gloss - An innovative polish that contains unique reactive silicones which chemically bond to spa surfaces, providing a hard, glossy, durable, protective coating. Drain, clean, and polish your spa frequently. Apply this product to a clean, dry spa using a soft, dry cloth. Spread evenly to one area at a time with a circular overlapping motion. Allow this product to dry for 10 to 15 minutes and react with the spa surface. Wipe off residue with a clean, dry cloth. Turn cloth frequently. Repeat application for additional protection and shine.

Serena Spa® Spa Care Cartridge Cleaner - Concentrated formula cleans spa cartridge filters. Removes oils, dirt and grease. Restores filter efficiency. Remove cartridge or elements from filter housing. Use full strength on elements and brush clean, or soak elements in a solution of 1 part Cartridge Cleaner to 10 parts water (1 qt to 2.5 gallons). Soak for 3 hours or overnight. Rinse with maximum water pressure and replace elements or cartridge.

Serena Spa® Spa Care Instant Cartridge Cleaner - Removes scum, oils, minerals and scale from spa cartridges improving filter life and water clarity. Easy to use with no scrubbing required; this special liquid formula works in minutes so you can continue to enjoy your spa. It is recommended that you use every 4-6 weeks to maintain filter efficiency. Rinse filter cartridge thoroughly to remove any loose debris. While wet, spray Instant Cartridge Cleaner on total surface area and allow to set for 3-5 minutes. Rinse thoroughly and reinstall in filter system.





Metal & Scale

Metal, Metal Everywhere

Good water maintenance also includes dealing with dissolved metals. Issues with metal and metallic ions can cause staining and scale, can discolor water, can damage equipment and ruin your pool or spa if not treated or better yet - prevented. So how does metal find it's way into your pool or spa? Through the very water you fill them with, and it doesn't matter if it's well water or tap water. Iron, copper, manganese, cobalt, aluminum and silver can all be present in dissolved form in your fill water. As the metal and metal ions accumulate, the greater the chance that they will eventually come out of solution. Once out of solution, they make the water cloudy or worse, they "plate out" on the pool's or spa's surfaces and stain. Those same metals can come out of solution when the pH, Total Alkalinity and/or Calcium Hardness are out of level. Also to be aware of this when you shock, whether with chlorine or a non-chlorine oxidizer, the shock oxidizes everything in the water, including metals.

Popular metals and the colors they can produce:

| | | |
|--------|----------------------------|---|
| Iron | :Brownish Red | |
| Cobalt | :Red, Blue, Gray, or Black | Manganese :Pink, Red, Black or Brownish Black |
| Copper | :Blue Green | Calcium :Cloudy |

Phoenix Erace - Highly concentrated, Erace is a great first step when opening your pool. Erace eliminates colored or cloudy pool water and stops the precipitation, scaling, and staining of the most common minerals found in pool water. Add Erace at the rate of 1 quart per 7,500 gallons. A 12-hour waiting period is sufficient for Erace to mix with the pool water before adding chlorine.

Phoenix Super Erace - Highly concentrated chelate with unique dispersing properties, by combining these two properties, Super Erace has become the best metal control, anti-scaling and stain removal product available in the market. Prevents staining of pool surfaces caused by iron, copper, manganese and calcium. Super Erace prevents staining by completely removing metal ions from the pool. It preferentially reacts with iron, which is the most common cause of staining, then copper, manganese and finally calcium. Super Erace can also be used to effectively prevent calcium scaling. It is important to keep the filtration system operating for 72 consecutive hours after addition of Super Erace to insure complete removal. Metals in Suspension removal: Add one quart per 10,000 gallons of pool water with the filtration system operating. Maintain pH level and check often. Backwash the filter at the end of 24 and 72 hours. Cartridge filters should be removed and cleaned as needed. Several cleanings may be required in the first 24 hours. Metal Stain removal: Add two quarts per 10,000 gallons of pool water with the circulating system turned off. Add the product around the perimeter of the pool allowing it to contact the pool wall as it settles into the water. After about one hour, start the system and maintain filtration for 72 hours and backwash the filter as above. Super Erace will remove metal stains from both concrete and vinyl liner pools. Maintenance: Regular use of Super Erace will prevent staining and keep the plumbing in good condition. Add 4 oz. per 1000 gallons of new water added to the pool. Always make sure that the filter runs continuously for 24 hours after dosing.

Phoenix Stain Out - Removes Stains Caused by Iron, Copper & Calcium. To treat stains, determine your pool's volume. Raise alkalinity to 100 ppm before treatment. In a clean plastic pail dissolve 2 pounds of Stain Out with 4 to 5 gallons of tap water for every 20,000 gallons of pool water. Use Super Erace in tandem to filter out metals present in the water. Do not shock pool after treatment. After 2-3 days, test pool chemistry and adjust balance as necessary. Replenish sanitizer (chlorine or bromine) in several small additions to gradually bring up levels. This prevents any metals from redepositing on surfaces. Preventative Maintenance regular treatment is necessary to prevent stains. Add 2 pounds of Stain Out per 20,000 gallons every 60 days in the summer months and every 90 days in the winter months. Resistant Stains: Shut down the pump and filter. Sprinkle Stain Out over stained area and allow product to settle on the stain. After a few minutes, turn on the pump and filter.

Phoenix Stainless Steel Polish - Commercial Grade Formula that is safe for routine maintenance, restores shine on rusted stainless steel fixtures in and around the pool. Great for any rehab project! Use to remove light to medium staining and corrosion on stainless steel and any concrete surface. (Always start in an inconspicuous area to understand the results, before proceeding to high visibility areas. It is recommended to wear safety glasses and protective hand gloves when using this product.) Wipe down surface with a clean cloth to remove as much surface dirt, rust, or scale as possible. Wipe down surface with Stainless Steel Polish. Allow surface to dry then wipe down. Reapply until you achieve desired results. Wash off surface with a clean cloth.

Phoenix Stainless Steel Restoration Powder - Commercial Grade Formula uniquely formulated granular product that is used for the restoration and revitalization of any and all stainless steel fixtures used in and around the Commercial and Residential pools. When used as directed this product will remove corrosion on the stainless steel fixtures. Wipe down surface with a clean cloth to remove any surface dirt, rust, or scale. A scoring pad may be needed for stubborn stains. Wipe down surface with Phoenix Stainless Steel Polish. Apply powder to a damp cloth to make a paste like consistency. Using the damp cloth apply paste to a small area of stainless steel at a time. Allow treated surfaces to dry thoroughly and retreat and scrub with a damp cloth soaked with Phoenix Stainless Steel Polish. For extremely corroded surfaces repeat steps until satisfied.

Serena Spa® Spa Care Stain & Scale Preventer - The water used to fill your spa may contain high amounts of metal that can stain or discolor your spa's surface. The presence of minerals can cause oxidizing and scaling on the shell's surface and erosion of the heater element. Serena Sp^a Stain & Scale Preventer protects your spa from metal and mineral impurities found in spa water. Initial Use: Add 16 oz. to spas up to 500 gallons of water while it is being filled, before any sanitizer is added. Remove and clean cartridge filter within 24 hours of dose with filter cleaner. Maintenance Dose: When you add water to top-off your spa, you may need to maintain your Stain & Scale Preventer levels. Add 1 oz. per 100 gallons of Stain & Scale Preventer to hot tub water while the pump is running. Allow the water to recirculate overnight or until the water is clear. This will help to control any mineral staining and will help to protect the heating element from corrosion. If staining continues due to excessive mineral levels in water, increase dosage.



Troubleshooting

Is there Something we Missed?

We hope this guide gives you a good starting point for understanding the basic do's and don'ts to pool and spa care and water chemistry. We here at Phoenix Products are more than happy to help with any further inquiries you may have. Our knowledgeable customer service staff is available five days a week all year round! We pride ourselves on sharing our hard earned knowledge so here are some last minute tips for basic troubleshooting.

Fun with Filters - Pools:

Cloudy water. You've done everything you can chemically to try to fix your cloudy water problem, but with minimal results, then the issue may lie in your filter. The following are some helpful hints to try based on your filter type:

Sand filter - If you find that filter pressure not building up - check your sand. Your sand could be getting old and allowing microscopic particles to pass through and accumulate in the pool. Older sand can also have displaced and formed a channel (tunnel in sand). Replace sand or redistribute with use of garden hose. You might also have an issue with particles so small that sand may just need some help with catching them - alum or Liquid Floc would help.

Above-ground pool - With an above-ground pool the skimmer is only way water is getting to the filter. If you find that the top foot of water is clear but rest is cloudy or milky, then the problem may lie in poor circulation. This basically means there is no water movement/circulation in bottom of pool. If you are able, direct your return jet stream so it angles slightly downward to get the water moving. If this doesn't improve the condition, attach your pool vacuum and position it at bottom of pool with vac head tilted on side - this will draw the water up and get it circulating through the filter system. Adding Super Pool Pruf clarifier is recommended and Floc may also be necessary.

Vinyl in-ground - If you find it's cloudy only in deep end of pool. Your problem lies in no circulation. To help restore good circulation back to your pool try (if you are able) to direct your return jet stream so it angles slightly downward to get the water moving. If this doesn't improve the condition, attach your pool vacuum and position it at bottom of pool with vac head tilted on side - this will draw the water up and get it circulating through the filter system. Adding Super Pool Pruf clarifier is recommended and Floc may also be necessary.

For Spas and Hot Tubs -

It is recommended that you drain, clean and refill your spa or hot tub every three months or as needed.

Black and/or Dark Green Spots on Walls -

Possible causes:
Black Algae -

Solutions:
Use Phoenix Algae Blast with a shock treatment. Brush spots daily.

Yellow or Orange Spots on Walls -

Possible causes:
Mustard Algae -
Iron in water -

Solutions:
Use Phoenix CU-7 Copper Algaecide
Use Phoenix Super Erace and Check pH.

Brown or Reddish-Brown Stains/Rust -

Possible causes:
Green Algae -

Solutions:
Use Phoenix Poly 60 or Phoenix CU-7 Copper Algaecide, and check pH.
Use Phoenix Super Erace.

Copper or Iron dissolved in water -

Cloudy Green Water -

Possible causes:
Sanitizer level low -
Corrosion of metal pool hardware due to low pH -
Iron or Magnese dissolved in water -
High pH and total Alkalinity -
Algae growth due to low chlorine -

Solutions:
Use Phoenix Stainbuster. Adjust pH Lower to proper range.
Add Phoenix Algae Blast

Clear Green Water -

Possible causes:
Dissolved Copper or Iron in fill water -
Corrosion of copper/metal pool fixtures -
Very High pH and total alkalinity -

Solutions:
Use Phoenix Stainbuster to prevent minerals from causing stains.
Treat with Phoenix Stainbuster, check water balance.
Lower to proper range.

Cloudy Water -

Possible causes:
Filter not removing small particles -
Free chlorine residual too low -
Inadequate filtration -

Solutions:
Use Phoenix Super Pool Pruf Clarifier
Shock treat with Phoenix Algae Blast and add chlorine.
Use Phoenix Filter Cleaner or Phoenix Instant Filter Cleaner to improve filtration.
Shock treat with Phoenix Oxy Clean.
Lower to proper range

Rainfall -
High pH or total alkalinity -

White/Chalky deposits -

Possible causes:
Hard water -
High pH, total alkalinity, calcium hardness -

Solutions:
Use Phoenix Stainbuster prevention weekly.
Lower to proper range

Skin/Eye Irritation -

Possible causes:
Combined chlorine level is too high -
pH is too low or too high -

Solutions:
Shock treat with Phoenix Oxy Clean to destroy organic contaminants.
Adjust pH to proper range.

Chlorine Like Odor-

Possible causes:
Combined chlorine level is too high -

Solutions:
Shock treat with Oxy Clean.

Scum Line -

Possible causes:
Bather waste(body grease and oils) -

Solutions:
Clean walls/surface with Tick Tile and Vinyl or Enzyme Pool Refresher.



The PURACIL CHLORINE FREE SANITIZING SYSTEM relies on 3 core products, that when used correctly provide clean, clear and refreshing swimming pool water for your family and friends to enjoy. When your pool water is properly balanced and chemical levels are maintained, the swimmers will enjoy an odor free, non-irritating, and refreshing experience where the water feels silky smooth. This product line requires your attention to weekly testing and maintaining chemical levels within specific ranges. This is necessary to prevent problems from occurring.

1 PURACIL CHLORINE FREE SANITIZER is a proven, long established swimming pool sanitizer. This product is a powerful sanitizer and remains concentrated and stable regardless of the temperature, pH range or sunlight (UV rays). Please test your water weekly and keep sanitizer within the 40-50 ppm range. This is important even if the water looks clear!

2 PURACIL PURASHOCK is a concentrated oxidizing agent used to break down organic waste that the filter does not trap and remove through back washing. Cosmetics, sun tan lotions and oils, perspiration, soap and dead algae are many of the contaminants that reduce the efficiency of the sanitizer. Using Purashock regularly will reduce these contaminants and allow the Chlorine Free Sanitizer to work at its maximum efficiency. Regular use will result in clean and crystal clear water. Please read all precautions on the label before use. This product is a strong oxidizer and may cause severe burns and fire if mishandled. Always keep out of reach of children.

3 PURACIL ALGAE CONTROL is a unique algaecide designed to work in tandem with the Purashock and the Chlorine Free Sanitizer to prevent algae blooms from occurring. The regular addition of Algae Control is a very important preventative step necessary in keeping the water clean, clear and refreshing.

PURACIL PURAQUEST is designed to prevent metals in solution in your pool water from reacting with the Chlorine Free Sanitizer. This is a very important step for the sanitizer to work at its maximum efficiency.

PURACIL PURFECT 30 is a concentrated algaecide designed to quickly combat an algae bloom. This algaecide is designed to attack algae effectively using a different chemistry than the Algae Control in order to break down the algae's defense mechanism.

PURACIL PURATE is a revolutionary new liquid borate designed specifically for the Chlorine Free Sanitizing System. By adding Purate to the water, you are adding an additional layer of protection against algae blooming by increasing the efficacy of the other chemicals in the water. Through years of research and development, we can prevent almost every problem chlorine free systems have experienced over the past twenty years by maintaining a conservative level of Purate in the water.

| MAINTENANCE DOSAGE GUIDE | | | | | | |
|----------------------------|----------|----------|----------|----------|---------|---------------|
| Gallons of Water (x 1,000) | | | | | | |
| Recommended Doses | | | | | | When? |
| | 10 | 15 | 20 | 25 | 30 | |
| CHLORINE FREE SANITIZER | 16 oz. | 24 oz. | 32 oz. | 40 oz. | 48 oz. | WEEKLY |
| PURASHOCK | 1 gal. | 1.5 gal. | 2 gal. | 2.5 gal. | 3 gal. | BIWEEKLY |
| ALGAE CONTROL | 1.6 oz. | 2.4 oz. | 3.2 oz. | 4.0 oz. | 4.8 oz. | WEEKLY |
| PURAQUEST | 40 oz. | 60 oz. | 80 oz. | 100 oz. | 120 oz. | MONTHLY |
| PURATE | 3.3 gal. | 5 gal. | 6.7 gal. | 8.3 gal. | 10 gal. | AT START UP |
| PURFECT 30 | 32 oz. | 48 oz. | 64 oz. | 80 oz. | 96 oz. | VISIBLE ALGAE |

The normal ranges of water balance should be followed for the PURACIL CHLORINE FREE SANITIZING SYSTEM.

THE IDEAL PH RANGE IS 7.2 - 7.8.

pH is a measure of the acidity of the water. A pH of 7.0 is neutral. A pH below 6.0 denotes acidity while a pH above 8.0 indicates basicity. Acidic water is corrosive and can damage metal components and the surface of the pool. Water with a high pH can cause cloudiness and a scaling condition that can mar the pool surface.

TOTAL ALKALINITY = 80-120 PPM

Total alkalinity assists in controlling the pH within the range of 7.2-7.8. Too much alkalinity will cause the pH to rise above the desired level while too little alkalinity will result in a condition called "pH bounce," that is, adding a small amount of acid or base will result in large changes in pH.

CALCIUM HARDNESS = 200-400 PPM

Calcium hardness protects the surface of the pool from the solvent power of the pool water. Soft water will cause a vinyl liner to become brittle and crack while hard water will pit the plaster surface of a pool and leave scale deposits.

METALS

While metals do not have an effect on water balance, they do, however require treatment prior to adding Puracil Chlorine Free Sanitizer to the pool water. It is a good idea to test for common metals such as copper, iron, and manganese whenever you have your water balance checked. The maximum allowable level for these metals is 0. Should you find any metals present, treat the water with PURACIL PURAQUEST at a rate of 1 quart per 10,000 gallons.

Maintaining a PURACIL pool is easy if you follow the Dosage chart below and maintain your filter:

| WHAT? | WHEN? | HOW MUCH? |
|-------------------------|-----------------|--------------------------|
| Run filter | daily | At least 12 hours |
| Test water | every week | Adjust as needed |
| Brush & vacuum | every week | All walls and floors |
| Chlorine Free Sanitizer | every week | Adjust to 50 ppm |
| Algae Control | every week | 1.6 oz. per 10,000 gal. |
| PuraShock | every 2 weeks | 1 gallon per 10,000 gal. |
| Clean filter | every 2-3 weeks | Use filter cleaner |
| Puraquest | every 3-4 weeks | 4 oz. per 10,000 gal. |

Seasonal changes in weather impact the pool chemicals needed to maintain clean, clear water. Here is a list of factors that affect the your pool's chemical requirements.

| FACTOR | EFFECT ON DOSAGE CHART | |
|-------------------|---------------------------------|-----------------|
| Rain | 💧 Chlorine Free Sanitizer | 💧 Algae Control |
| High Temperature | 💧 Chlorine Free Sanitizer | 💧 Algae Control |
| High Bathing Load | 💧 All products except Puraquest | |
| Well water/heater | 💧 PuraShock | 💧 Puraquest |

The symbol 💧 represents doses of 10 – 30% above normal.

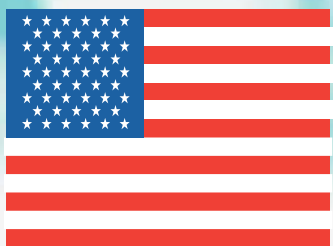
More Questions?

Contact Us

www.phoenixproductsco.com

Call 1.800.928.7665 to Order Now!

or Fax us at 1.860.589.7501



MADE IN USA



Phoenix Products Company

55 Container Drive - Terryville, CT 06786