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Since 1960*

POOL TOWN

FAMILY FUN DISCOUNT CENTER

WATER CARE BOOKLET



www.pooltown.net

KNOW YOUR POOL CAPACITY

Knowing your pool's capacity is the beginning to a successful water treatment plan.

Step 1-

Average Depth =

Depth of the deep end + depth of the shallow end divided by 2

Step 2-

Rectangle or square pool =

Length x width x average depth x 7.5 = pool volume

Circular Pool =

Diameter x diameter x average depth x 5.9 = pool volume

Oval Pool =

Long diameter x short diameter x average depth x 5.9 = pool volume

pH BALANCE

Simply put, pH is the measure of acid vs. base of a solution. In your case, the solution is your pool water. The ideal range for pH is 7.2 to 7.6.

Your pH objective is to find the proper pH range for maximum swimming comfort and sanitizer effectiveness. First, you need to be familiar with the pH scale. The pH scale runs from 0 to 14 with 7.0 being the neutral point. Pure distilled water has a pH of 7.0 and is said to be pH neutral, neither acidic nor basic.

When the pH falls below 7.0, your pool becomes acidic. This means your water will become aggressive to pipes, vinyl and plaster pool walls, and metal components in heaters, pumps and filters. All of these elements may become corroded. Low pH water also causes skin and eye irritation, making the eyes look red. In addition, the sanitizer becomes very active which results in higher effectiveness, but has a rapid depletion rate.

High pH can also create problems of its own. When pH values climb too high (7.8 and up), the pool water has a tendency to look dull or flat. High pH can also cause skin and eye irritation. When the pH rises, the sanitizer becomes less effective. This means the pool will require more sanitizer to keep it clean.

The pH of pool water has a great effect on how comfortable it is for swimmers. Your eyes have a pH of about 7.3 to 7.5. As mentioned above, when the pH strays too far away from this point, pool water becomes increasingly uncomfortable. Red, irritated eyes are an indication that the pH might be out of balance and should be checked.

Taking all this into consideration, you will best meet your objective by keeping the pH between 7.2 and 7.6. This range combines the maximum swimmer comfort with sanitizer effectiveness.

ADJUSTING pH

The control of pH is relatively simple. The pH can be raised with the addition of *Pooltown pH Plus* (soda ash). Sodium bicarbonate can also be added. Soda ash

and sodium bicarbonate are the most commonly used products and can be safely mixed into the pool water.

The addition of acid such as hydrochloric acid (muriatic acid) or acid salts (sodium bisulfate) lowers the pH in your pool. *Pooltown pH Minus* (sodium bisulfate) is often recommended because it is safer to handle.

The charts below will help you determine the proper amount of chemicals that are needed to adjust the pH to the appropriate range. When using these charts, it is always best to add small amounts of chemicals over time, rather than large amounts all at once.

Recommended Dosage of Pooltown pH Plus

Pool Capacity In Gallons	6.8 – 7.2	Test Kit Readings	
		6.5 – 6.8	Below 6.5
5,000	6 oz	1.4 lbs	2.00 lbs
10,000	12 oz	2.80 lbs	3.80 lbs
15,000	18 oz	4.25 lbs	5.50 lbs
20,000	1.5 lbs	5.50 lbs	7.50 lbs
30,000	2.25 lbs	8.50 lbs	11.25 lbs

Recommended Dosage of Pooltown pH Minus

Pool Capacity In Gallons	7.6 – 7.9	Test Kit Readings	
		8.0 – 8.4	Above 8.4
5,000	4 oz	8 oz	12 oz
10,000	8 oz	1.0 lbs	1.5 lbs
15,000	12 oz	1.5 lbs	2.25 lbs
20,000	1.0 lbs	2.0 lbs	3.0 lbs
30,000	1.5 lbs	3.0 lbs	4.5 lbs

TOTAL ALKALINITY

Total Alkalinity is the measure of the pH buffering capacity or the water's ability to resist a change in the pH. The ideal range for total alkalinity level is 80 – 120 ppm (parts per million).

Pool owners must realize that Total Alkalinity, or **T.A.**, is completely different from the alkaline or basic side of the pH scale. They are, however, related to one another for proper pH balance.

As mentioned earlier, a desirable pH range is between 7.2 and 7.6. Total Alkalinity plays a major role in stabilizing the pH. When T.A. values are within the proper range, the pH becomes stable. In other words, the pH will remain strong or consistent without great fluctuation. When T.A. values fall below the recommended range, the pH is easily effected. Even a small amount of high or low pH material introduced into the water can result in large swings in pH values.

Generally when T.A. is low, the pH remains low as well, causing your pool water to be corrosive and irritating to swimmers. At high T.A. levels, small additions of calcium can produce scale. The pH tends to remain high and attempts to lower pH are short lived.

Total Alkalinity is measured with a pool test kit or test strip, and for all practical purposes is equal to the measure of carbonates dissolved in the pool water. To adjust T.A., you must adjust the amount of carbonates. To raise T.A. values, you will need to add ***Pooltown Alkalinity Plus***. ***Pooltown Alkalinity Plus*** (with pH of only 8.2) will raise the T.A., but has a moderate effect on the pH of the pool.

To raise the Total Alkalinity level, either broadcast the ***Pooltown Alkalinity Plus*** over the pool, or pre-dissolve it in water and pour the mixture evenly around the water's edge.

Lowering T.A. is a little more involved. You will need either Muriatic Acid or ***Pooltown pH Minus***. Instead of broadcasting the acid over the pool water as for pH adjustment, you must pour the acid in one spot or column at the deep end of the pool. This method causes a different chemical reaction in the water which will lower the Total Alkalinity, instead of only reducing the pH level.

Lowering T.A. is a slow process and usually requires repeated additions of acid. We recommend that you do not add more than one quart or one pound of acid per 10,000 gallons of water per day.

Recommended Dosage of Pooltown Alkalinity Plus

Pool Capacity In Gallons	10 ppm	To Raise Alkalinity 20 ppm	Total 30 ppm
5,000	.75 lbs	1.5 lbs	2.25 lbs
10,000	1.5 lbs	3 lbs	4.5 lbs
15,000	2.25 lbs	4.5 lbs	6.75 lbs
20,000	3 lbs	6 lbs	9 lbs
30,000	4.5 lbs	9 lbs	13.5 lbs

Recommended Dosage of Pooltown pH Minus

Pool Capacity In Gallons	10 ppm	To Raise Alkalinity 20 ppm	Total 30 ppm
5,000	1 lb	2 lbs	3 lbs
10,000	2 lbs	4 lbs	6 lbs
15,000	3 lbs	5 lbs	7 lbs
20,000	4 lbs	6 lbs	8 lbs
30,000	6 lbs	8 lbs	10 lbs

CALCIUM HARDNESS

The term “water hardness” originated with the use of soap for laundering and cleaning. Certain ions in water combined with the chemicals in soap to form a solid precipitate, or scum, and made it difficult to get soap to lather. Thus water, with more than 100 ppm of hardness ions, was called *hard water*.

Like pH and Total Alkalinity, Calcium Hardness effects the water’s tendency to be scale forming or corrosive. The ideal range is 200 – 400 ppm.

When scale is formed in soft water, the scale is generally large and coarse. This is seen in many tap water pipes where the local water treatment plants soften the water to 100 ppm or less. Hard water, however, appears to produce a protective scale that has smaller, finer particles that prevent corrosion. Thus Calcium

Hardness should be maintained at 200 ppm or higher to provide sufficient calcium saturation and to insure that if scale does form, it is the less harmful form.

To raise Calcium Hardness in the pool, add the proper amount of *Pooltown Calcium Plus Adjuster*, using the chart below. For those with extremely high calcium hardness (over 1000 ppm), the pool must be partially drained and refilled with water that is lower in total hardness.

Recommended Dosage of Pooltown Calcium Plus Adjuster

Pool Capacity In Gallons	Amount Needed to Raise Calcium Level By:			
	10 ppm	20 ppm	30 ppm	40 ppm
5,000	8 oz	14.4 oz	1.32 lbs	1.8 lbs
10,000	1 lb	2 lbs	3 lbs	4 lbs
15,000	1.35 lbs	2.75 lbs	4 lbs	5.5 lbs
20,000	1.8 lbs	3.6lbs	5.4 lbs	7.2 lbs
30,000	2.7 lbs	5.4 lbs	8.1 lbs	10.8 lbs

CYANURIC ACID (Stabilizer / Conditioner)

The sun is a natural enemy to chlorine residuals in your pool. The ultra violet rays of the sun break down chlorine at the molecular level reducing the effectiveness of your chlorine. It is said that on a sunny day, chlorine can be depleted at a rate of 5 ppm per hour. By controlling the consumption, you can help reduce your annual chemical costs.

Pooltown Stabilizer (cyanuric acid) is designed to reduce the sun's effects on chlorine. Also known as a stabilizer or conditioner, cyanuric acid is a hard granular product that combines with chlorine and reduces the reaction with sunlight. Before adding stabilizer to your pool, it is very important to backwash the filter first. The best way to add cyanuric acid is to *slowly* pour the granules into the skimmer (closest to pool pump if you have more than 1 skimmer) allowing the product to be pulled into the filter. The granules must continue circulating in the pool for a minimum of 48 hours (allow more time for cold water). Stabilizer is very slow to dissolve and it is very important not to backwash the filter for a minimum of 48 hours, if not longer, to allow the product to fully dissolve. Backwashing earlier will just flush the product out of the system and not allow for full effect.

Maintain a cyanuric acid level of 20 to 40 ppm to help control chlorine consumption. If your pool is a salt water pool, maintain the the cyanuric acid level of 60 to 80 ppm.

To raise cyanuric acid levels in the pool, simply add the proper amount of *Pooltown Stabilizer*.

Recommended Dosage of Pooltown Stabilizer

Pool Capacity in Gallons	To Raise Cyanuric Acid Level 10 ppm	To Raise Cyanuric Acid Level 10 ppm
5,000	½ Pound	1 Pound
10,000	1 Pound	2 Pounds
15,000	1½ Pounds	3 Pounds
20,000	2 Pounds	4 Pounds
30,000	3 Pounds	6 Pounds

PUTTING IT ALL TOGETHER

Water balance is the first step to a clean, clear pool. Having the correct balance will greatly reduce the effects of corrosion and scale build-up. It will also add to the enjoyment of your pool by enhancing the look, feel, smell and taste of the water.

Water balance is the correct combination of pH, Total Alkalinity, Calcium Hardness and Stabilizer (cyanuric acid) all working together. The thing to remember is proper water balance is relatively easy to achieve and should be a priority from the smallest back yard pool to the largest water park.

Proper Ranges

pH Level: 7.2 to 7.6
Total Alkalinity Level: 80 to 120 ppm
Calcium Hardness: 200 to 400 ppm

Cyanuric Acid: 20 to 40 ppm (60 to 80 ppm in salt water pools)

SANITIZING WITH CHLORINE

Sanitization is the process of destroying organisms that are harmful to swimmers. Organisms, referred to as pathogens, include: bacteria, fungi, viruses, etc. Pool water, when left untreated, may develop these pathogens along with algae. Algae is unsightly and can cause the pool area to become slippery and unsafe. Routine sanitizing with chlorine will help eliminate growth of pathogens and algae.

All chlorine, regardless of whether it is introduced as a gas, a dry compound or a liquid compound, does exactly the same thing when added to water. It forms Hypochlorous Acid and Hypochlorite Ions. Hypochlorous acid is the stronger form of chlorine, also referred to as *good chlorine*. The hypochlorite ion is about 25 times less effective as a sanitizer but combines with the hypochlorous acid to give us Free Available Chlorine.

Free available chlorine is the measure of chlorine's active disinfecting power. Assuming the pool water is properly balanced, there is no need to have large amounts of chlorine dissolved in your pool for normal sanitation. A residual of 1 to 3 ppm of free available chlorine is sufficient to destroy algae and bacteria.

Choosing a Pooltown Chlorine Product to use is a matter of personal preference.

Pooltown Concentrated Chlorinating Granules - This type of chlorine is great for above ground or smaller pools that need a little more control over the amount of chlorine being dissolved into the pool. With *Pooltown Concentrated Chlorinating Granules*, you can put in as much or as little as you need to keep your pool safely sanitized at all times.

Pooltown 1" Small Tablets - The small tablets are terrific for automatic chemical feeders. They are slow dissolving and easy to handle.

Pooltown 3” Giant Tablets - The 8 ounce giant tablets are individually wrapped and are the perfect skimmer puck. These slow dissolving tablets are great for larger pools that need a more consistent flow of chlorine.

All *Pooltown* chlorine tablet products are stabilized for maximum sunlight protection and cost efficiency.

OXIDATION / SHOCK / SUPERCHLORINATION

Oxidation is the process of chemically removing organic debris, such as body waste, particulate matter and perspiration, from the water. There are two things needed to maintain a clean, clear pool: Filtration and Sanitation. The use of chlorine is supplemental to filtration. When working properly, it will remove dirt and debris from the water. The filter is limited, however, to suspended particles. Even the best filter cannot remove dissolved impurities because they are not physically separate from the water.

As mentioned earlier, hypochlorous acid is the form of chlorine that provides sanitation. Hypochlorous acid is very active and will react with ammonia and other nitrogen-containing organic compounds (ie, perspiration, urine, etc.) and form chloramines. This “combined chlorine” is 40 to 60 times less effective than free available chlorine.

Combined chlorine, in addition to reduced effectiveness against bacteria can cause eye irritation and so-called “chlorine odor.” This may also result in a dull or flat look to your pool. A properly balanced and chlorinated pool will have no discernible odor.

When chloramines and organic debris have built up in your pool, you must chemically shock the pool to oxidize or burn the impurities out of the water. To achieve this you will need to raise the chlorine level 7-10 ppm above the normal chlorine residual to oxidize these organic compounds. This will kill and remove algae and other contaminants from the water.

Using *Pooltown Shock* or an equivalent product is the perfect way to regain that pool water shine.

ALGAECIDES

The chemistry of algaecides is complex because more than 46 species of clear water algae exist. Some algaecides work better on certain algae than others. Algaecides, or algae inhibitors, are commercial products that work hand in hand with chlorine to help prevent and control algae growth.

Planktonic clean water algae float on the surface, while other types of algae will attach themselves to the pool bottom or sides. Sunlight, temperature, pH, chlorine residual and mineral content of the water will all effect the presence and growth rate of algae. Algae can be introduced into the pool by wind-borne debris, rain and falling leaves, or they may be present in the fill water itself. It is even possible to transfer algae via bathing suits, floats, etc.

There are many different types of algaecides on the market today. The key to choosing the right one is to follow the manufacturer's directions and maintain a working level of algaecide in the water as you would chlorine. Although you are not be able to test for algaecide levels in the water, proper use will be an effective deterrent to algae growth.

The most common type of algaecides are what we call quaternary ammonium compounds, or "quats." These come in various mixtures and concentrations and are very effective algae inhibitors. Quat compounds may also cause foam on the surface of the water due to their ability to decrease surface tension. The foam is normal and short lived. Other types will include a polymer additive to prevent the water from foaming. These we refer to as "polyquats." Still others have a copper, silver or even magnesium additive in them to get those hard to kill algae such as mustard, pink slime or black algae.

The ***Pooltown*** pool maintenance product line offers a selection of everyday algaecides. These include: ***Pooltown 10% Algaecide, Pooltown 50% Algaecide, Pooltown 60% Algaecide – Non Foaming Algaecide and Pooltown Copper 90.***

CLARIFIERS AND FLOCCULANTS

Pooltown Clarifier and Pooltown Super Blue Clarifier are maintenance products that will help filter out suspended particles that cannot be oxidized. Made of

Polyelectrolyte, clarifiers use the art of attraction to bind small particles together. This may seem quite simplistic but there is really nothing else to it.

Clarifiers come in a variety of concentrations. Generally speaking, all clarifiers will perform well, but it is important to use them as the manufacturer suggests. A weak concentration in the pool will not yield satisfactory results, while using too much may cause shortened filter runs. Most clarifiers work best when diluted in 3 to 5 gallons of water and distributed evenly around the pool. This will insure a faster, even disbursement of the product throughout the pool.

Flocculant is made of aluminum sulfate, commonly known as “alum.” It is used as a filter aid, a coagulant and a settling agent for turbid water.

Alum floc is a white, gelatinous substance that attaches to free floating matter in the water to form larger, heavier-than-water particles. These particles will settle to the bottom of the pool. Alum floc is especially effective on sand filter beds. The floc partially fills the voids in the sand beds and holds organic debris in its suspended gelatinous coating.

Alum used as a filter aid, is introduced to the pool at the most convenient point ahead of the filter system. The skimmer is generally used for this entry.

To use the floc as a settling agent, first adjust to pH level to a minimum of 7.8, then simply broadcast the dry white powder over the surface of the water at a rate of 2 ounces per square foot of surface area (see pool calculations) and allow the pool to stand undisturbed overnight or for a minimum of two hours. After the debris has settled to the bottom, vacuum the pool on the waste or drain cycle to rid the pool of the unwanted matter.

WATER TESTING

Regular and precise testing of swimming pool water is essential for maintaining a healthy, clean pool.

There have been many changes and improvements in water testing over the years from easier-to-read test kits to dip-and-read test strips. Whatever you choose, you should follow some basic rules when testing water. Careless testing procedures,

inaccurate measurements, or bad reagents will cause problems. The following rules apply to all chemical testing.

1. Test the water frequently, sometimes daily when the pool is heavily used.
2. Make certain that the sample tested is representative of the pool water. *Do not collect the sample from an area adjacent to an inlet.* Try to select a location that contains well-mixed pool water, and attempt to get a sample from at least 12" below the water surface.
3. Follow instructions. Water testing is a precise process that demands accuracy in measuring amounts of reagents involved.
4. Add the water to the sample cell until the bottom of the bowl-like surface (called a meniscus) is even with the indicated fill line. The outer edges will be higher than the center.
5. Rinse all sample cells, stirring rods and equipment thoroughly after each use, both inside and out with clean fresh water.
6. Do not handle the equipment with dirty hands, and especially do not cover the sample cell with your fingers. Store all equipment in a cool, dry place. Do not interchange parts such as cells, caps or droppers.

FILTRATION AND RECIRCULATION

Water clarity, also known as turbidity, is the degree in which suspended particles in water obscure visibility. Filtration is the mechanical process of removing this insoluble matter from swimming pool and spa water.

Swimming pools and spas are subject to constant contamination from foreign matter brought in by wind, swimmers and articles used in and about the pool water. Such contamination includes particles of dirt, organic matter, bacteria, algae, hair, makeup, suntan and body oils, leaves, chemical residue and other debris.

Pool water carrying these types of debris are diverted into the filter chamber and pass through a filter media where the particulate matter is trapped. The clean, filtered water is then returned to the pool.

There are three main factors that determine water clarity.

1. Flow Rate - the amount of water that flows through the filter during a specified amount of time. This is measured in gallons per minute (gpm).
2. Amount of Filtering Area - Filter medium has limited capacity to trap and hold particulate matter, debris, oil, etc. The amount of filter area required for any given size pool is directly related to the gallons per minute that will be flowing through the filter.
3. Effectiveness of Filter Media - As previously stated, filter media has the ability to trap and hold particulate matter as water flows through it. The effectiveness of the filter media varies according to type. Generally speaking, the finer the medium, the more successful the filtering process. For example, Diatomaceous Earth is finer, therefore, more effective than sand.

Filter systems consist of several basic parts: a pump and motor to move the water, a hair and lint trap to remove large debris, a filter to remove particulate matter, and a piping system to conduct the water to and from the pool through the pump and filter. Filter system sizing is directly related to the amount of water in the pool. Health codes require that the entire volume of water be re-circulated through the filter in an established period of time. An accepted standard is 6 to 8 hours. For example, a 20' x 40' pool containing 30,000 gallons of water should have a filter system large enough to handle a flow rate of 63 gallons per minute.

$$\frac{30,000 \text{ gallons}}{8 \text{ hrs} \times 60 \text{ min/hr}} = \frac{30,000 \text{ gallons}}{480 \text{ minutes}} = 63 \text{ gal/minute (Flow Rate)}$$

This means that the pump has to be able to move 63 gallons per minute through the piping, into the filter, and return it to the pool.

The filter has to be large enough to accept 63 gallons per minute flowing through the medium without over-extending its capabilities. Filters are sized according to square feet of surface area. Each square foot can handle a certain amount of water flowing through it. For example, a high rate sand filter has a design capability of 12 gallons per minute for each square foot.

Therefore, you would need 5.25 sq ft of surface area for a 30,000 gallon pool.

$$63 \text{ gpm} / 12 \text{ gpm/sq ft} = 5.25 \text{ sq ft of filter area required}$$

The effectiveness of the filter medium, in this case sand, will make a difference in water clarity. Other filter media, such as a cartridge type (made of synthetic fiber paper similar to a coffee filter), or Diatomaceous Earth powder (used by coating a filter screen), still must adhere to the flow rate of the pool. Generally accepted flow rates for these are as follows:

Cartridge - 0.375 gallons per minute per sq ft

Diatomaceous Earth - 2 gallons per minute per sq ft

SAFETY WITH STORAGE AND HANDLING

Handling swimming pool chemicals is safe and easy when they are used and stored properly. Problems occur when careless mistakes are made. When mixed with incompatible materials, these important, everyday chemicals have the potential for disaster. By following some easy safety rules, accidents can be prevented.

FOR OUR CUSTOMERS

- 1. FOLLOW INSTRUCTIONS. USE CHEMICALS ONLY AS INSTRUCTED.**
Always keep chemicals out of the reach of children.
- 2. NEVER** add water to chemicals - add chemicals to water slowly.
- 3. PROTECT** eyes with safety glasses or safety goggles when handling chemicals.
- 4. NEVER** mix different chemicals together. This can cause fire, possible explosion and toxic fumes.
- 5. ALWAYS** use a clean instruments and tools, free of oil, grease or insecticides. Even small amounts of residue can combine with the chemicals and produce a danger.
- 6. ALWAYS** keep chemicals in their original tightly closed containers.
- 7. STORE** your chemicals in a clean, dry, well-ventilated area away from

household items such as fertilizer, gasoline, oil or other cleaning solutions.

8. ALWAYS clean up spills immediately with a clean broom or dust pan. Dispose of spilled materials in an over-pack container. DO NOT PUT SPILLED CHEMICALS BACK IN THEIR ORIGINAL CONTAINER. The chemical may have been contaminated.

9. KEEP chemicals away from electrical equipment and open flames.

10. NEVER FLUSH any amount of chemicals down storm sewers. In case of large spills, contact your local fire department for assistance.

CHEMICAL SAFETY SUMMARY

ACIDS -Acids may be highly corrosive and must be handled with extreme care.

Names of Acids: Muriatic acid (Hydrochloric acid), Sodium bisulfate (dry acid, pH down)

Protective Equipment

- Eyes - goggles or full face shield when splashing may occur
- Hands - gloves (rubber, neoprene, or PVC)
- Body - coveralls and impervious boots
- Lungs - proper ventilation

Handling Precautions

- DO NOT take internally.
- Avoid contact with eyes, skin or clothing.
- Upon contact with skin or eyes, rinse with water.
- Avoid breathing vapors (muriatic acid) and dust (sodium bisulfate).
- Store all containers in a cool, dry place.
- *Always add acids to plenty of water. Never add water to acids.*

Conditions and Materials to Avoid

- Avoid contact with strong alkalies such as caustic soda, sodium carbonate, etc.
- Avoid contact with all oxidizers.
- Do not store in wet or moist conditions.

Balance Chemicals - Although acids are balance chemicals, they have been treated separately. The chemicals in this section are all basic (high pH) and increase pH, TA and Calcium Hardness.

Names of Balance Chemicals: Sodium bicarbonate, Sodium carbonate, Calcium chloride

Protective Equipment

- Eyes – Safety glasses or goggles
- Hands - gloves (rubber, neoprene, or PVC)

Handling Precautions

- DO NOT take internally.
- Avoid contact with eyes, skin or clothing.
- Avoid breathing dust, spray or mist.
- Store containers in a cool, dry place.
- Always keep containers tightly sealed.
- *Caution: DO NOT MIX balancing chemicals with anything other than Water*

Conditions and Materials to Avoid

- Avoid contact with acids.
- Avoid contact with organics and oxidizers.
- Do not store near acids.

Oxidizers -The precautions for handling oxidizers are all similar. However, it is up to you to familiarize yourself with the requirements for each.

Names of Oxidizers: Calcium hypochlorite (Cal hypo), Lithium hypochlorite, Sodium hypochlorite (Liquid shock, Bleach), Trichlor (1” and 3” Tablets), Sodium dichlor, Bromine, Potassium peroxymonosulfate (Oxy Plus, Non-chlorine shock oxidizer)

Protective Equipment

- Eyes – Safety goggles
- Hands - gloves (rubber, neoprene, or PVC)
- Lungs – provide ventilation where dust is likely.

Handling Precautions

- DO NOT take internally.
- Avoid contact with eyes, skin or clothing.
- Upon contact with skin or eyes, rinse with water.
- Avoid breathing dust.
- Store all containers in a cool, dry place.
- Do not store containers in direct sun light.
- Do not store near combustible materials.
- Do not mix oxidizers.
- Use clean, dry utensils when handling oxidizers.
- Keep all oxidizer containers off wet floors.

Conditions and Materials to Avoid

- Excessive heat – oxidizers will decompose, releasing toxic gasses and heat.
- Solvents
- Acids
- Other pool chemicals such as acids, algaecides, clarifiers, sequestering agents, surface cleaners, etc.
- Organic materials
- *Do not mix chemicals with anything other than pool water. Always add chemicals to plenty of water. Never add water to chemicals.*

FIRST AID

The following information is generic in nature. Please see product label for more specific first aid information.

If In Eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

If On Skin Or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In the event of a medical or chemical emergency contact Chem Tel, Inc. North America 1-800-255-3924.