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FOUNTAIN WATER TREATMENT

Proper maintenance of the pool water is one of the most important means of insuring a long-lasting and attractive fountain. Water, which has been correctly treated and maintained, extends the life of the fountain equipment and provides protection for the pool's finished surfaces by eliminating dirt, algae, bacteria, material deposits and other foreign matter from the pool. A valuable asset in correctly maintaining the pool water is the filtration system (if supplied). Other factors, however, are equally important in the pool water treatment and should definitely be considered.

Total alkalinity: This refers to the total amount of certain alkaline chemicals in the water. Total alkalinity should be maintained between 80 PPM and 100 PPM (parts of alkaline chemicals per million parts of water as measured by available swimming pool test kits). Minimum should be 60 with a maximum of 180. Control within this range provides better pH stabilization and insures the most effective usefulness of pool water chemicals. Total alkalinity can be increased by adding bicarbonate of soda (baking soda) and decreased by adding muriatic acid. The fountain filtration system, (if supplied) should always be operating when chemicals are added to the pool water.

pH-control: This refers to the control of the acid-alkaline balance of the pool water. The pH of the pool water should be constantly maintained between 7.4 and 7.6. The minimum value should be 7.2, the maximum 7.8. These are figures on an arbitrary scale ranging from 0-14. The number 7 indicates a neutral condition. Higher numbers indicate increasing alkaline conditions; and low numbers indicate increasing acid conditions. pH is easily measured using available test kits.

An excessive acid condition can cause piping and equipment corrosion, damage to the pool's interior finish and rapid dissipation of deionization agents. An excessive alkaline condition prevents sterilizing agents from working and can cause scale formation (deposit of calcium salts) on equipment and pool finishes. The pH can be increased by adding sodium carbonate (soda ash) and decreased by adding muriatic acid.

Note: The total alkalinity refers to the total amount of alkaline chemicals in the water and once the correct level is established, it can be maintained for long periods of time. On the other hand, pH control refers to the temporary changes in the acid-alkaline condition which can be quickly corrected using small amounts of chemicals. The condition of both factors will substantially reduce total cost in chemical maintenance.

Note: Chlorine is not recommended for a fountain water treatment chemical. Georgia Fountain Company, Inc. recommends the use of Bromine chemicals instead. However, we have provided the information if it is chosen

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Normally, the addition of chlorine to the water is a manual operation; however, automatic chlorinators are available.

Chlorine is most effective when added to the water at night or early in the morning. The amount of chlorine required increases as water temperatures increase, with more chlorine being required during warm weather.

IMPORTANT: do not add chlorine and acid to the pool at the same time, since they will combine and form a very toxic chlorine gas. Keep treatments a few hours apart for safety reasons.

Chlorine Residue: This refers to the amount of free chlorine that remains in the water to prevent the growth of algae and bacteria. Once chlorine is added to the pool, a certain amount of chlorine is destroyed in the process of killing bacteria and algae, additional chlorine is dissipated by low pH, sunlight and the water effects themselves. Some chlorine reacts with debris to form ineffective chlorine compounds.

The residual is the amount of chlorine that remains in the water after the above reaction and dissipation occurs. It should never be allowed to drop below 0.3 PPM and can range up to 1.0 PPM or even higher as determined by available swimming pool test kits. Regular use of chlorine should easily maintain the desired level. If the stable isocyanurates are used, an even better control is provided.

Super Chlorination: This refers to an extra dose of chlorine, usually three to five times the normal dose. Super chlorination is used occasionally as a "shock treatment", destroying any algae or bacteria that survived regular chlorine treatments. Super chlorination may be required as often as once a week for very warm weather conditions, and may not be required at all for cold water temperatures.

Bromine Residue: This refers to the amount of free bromine that remains in the water to prevent the growth of algae and bacteria. Once bromine is added to the pool, a certain amount of bromine is destroyed in the process of killing bacteria and algae, additional chlorine is dissipated by low pH, sunlight and the water effects themselves. Some chlorine reacts with debris to form ineffective chlorine compounds.

The residual is the amount of bromine that remains in the water after the above reaction and dissipation occurs. It should never be allowed to drop below 3 PPM and can range up to 10 PPM or even higher as determined by available swimming pool test kits. Regular use of bromine should easily maintain the desired level. If the stable isocyanurates are used, an even better control is provided.

Algaecides: Algaecides are generally used to kill algae (microscopic plants) once they develop in the fountain. Proper water treatment, as described above, should prevent the need for algaecides; however, they may be used as a supplement to the regular maintenance program, or kept available for an emergency action should the need arise.

Alum: Alum is used to remove iron from the water in areas where the available water supply has a high iron content and is not filtered using commercial filters. (see "soft water"). Reaction between the iron and chlorine can stain the pool surfaces unless the iron is removed immediately after filling the pool, by adding alum to the pool with the filter off followed by a super chlorination treatment. The precipitate is then vacuumed directly to the filter system

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Calcium: Determines if water is hard or soft. Calcium levels shall be maintained at 225 - 250ppm in plaster pools and 175-225ppm in other pools such a fiberglass or vinyl lined.

Fresh Water: The pool should be drained and refilled with fresh water whenever evaporation has caused a concentration of calcium salts to become excessive. The fountain water effects tend to increase the evaporation rate, and although regular chemical treatment will reduce the frequency of this requirement, the calcium salt concentration should be checked periodically by a pool maintenance company. The draining and refilling operation maybe required once every two months in some cases. This will result in saving on pool chemicals. Unfiltered and untreated pools should be drained and refilled bi-weekly.

For more information, consult a water treatment company who is familiar with the local water conditions and requirements. Follow manufacturer's instructions for the use of all chemicals.

Soft Water: In areas where the available water supply is very "hard", (contains a large amount of calcium salts and other metallic impurities), commercial water softeners and filters are a valuable asset. They reduce the otherwise high and requirements for chemical treatment of the water, saving on maintenance costs and aid in preventing stains and scale formation on the fountain equipment and pool walls.

Ionization treatment: If your system is equipped with an ionization system you will likely need less chemicals to keep you system free of algae and other micro organisms. The proper level of free ions in the water shall be maintained at 0.3ppm. A higher level of free ions is only a waste of the ionization anodes. Adjust your ionization system to meet that level.

De-Sudsing:

Ornamental fountains located in areas where heavy pedestrian traffic occurs maybe subject to an occasional "soaping". This refers to the adding of a soap or liquid detergent to the pool in varying concentrations, usually an act of vandalism. The following information may prove helpful in dealing with this nuisance:

The main problem caused as a result of "soaping" are overflowing of the suds from the pool and partial shrouding of the water effects, especially those having low operating heights. Permanent media (sand) filters can continue to operate effectively when soaps, detergents, or de-foamers are present in the water.

The first remedy is to use an antifoaming product. Many types of anti-foam products or de-foamers are available. Silicone base de-foamers, which are non-toxic and non-injurious to health, are recommended. De-foamers of a petroleum base should not be used. After the de-foaming agent has been added to the water and has taken effect, the pool, at the discretion of the operator, should be drained and refilled with fresh water.

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