

POOL CARE BASICS

To keep your pool's water sparkling clean, a few basic maintenance steps are required. on the usage of products, care and how to test your water for easy pool maintenance in this section.

KNOW YOUR FILTRATION SYSTEM:

The filter is one of your most important pieces of pool equipment. It removes both visible debris and microscopic matter. It is very important to backwash the filter weekly and treat with a chemical cleaner once a season. Of course, the pump must be running for the Filter to work.

FILTER TYPES:

There are basically two types of filters that are used in swimming pools to remove dirt and debris that enter the water through swimmers and the environment.

I. Sand filter

II. Cartridge filter

SAND FILTERS:

- A sand filter tank is made of metal or fiberglass and contains a thick bed of special-grade sand. While filtering, dirty water from the pool comes in through the filter's inlet pipe, which leads to the water distribution head inside the tank. While gravity pulls the water down through the sand, tiny sand particles catch dirt and debris. At the bottom of the tank, the filtered water flows through the pick-up unit and out the outlet pipe.
- If the water flow is slowed by dirt and debris, pressure gauges at the filter inlet and outlet give the pool owner an idea of the blockage level inside. If the inlet pipe has more pressure than the outlet pipe, there is collected debris in the sand. You will then need to back wash the filter.
- The coarseness of sand traps debris particles and over time, the sand will become smooth and round. This sand should be changed every two years. Contact a pool professional to change the sand.

CARTRIDGE FILTERS:

- Swimming pool filter cartridges work by allowing water to pass through a very fine filter surface. This filter surface captures any impurities that attempt to pass through and holds them until you clean the filter cartridge or replace it.
- Cartridge filters have more surface area than sand filters. This allowing for fewer clogs and much easier maintenance. Cartridge filters also operate at a much lower pressure than sand. This causes less back pressure on the pump so you have a greater flow of water through the system.

- This system is very easy to maintain and relatively inexpensive. Basic cartridge maintenance can be performed by simply rinsing off your cartridge with a garden hose or soaking them in detergent. However, the best way to ensure a clean and sparkling pool is to simply replace them, which should be done every 3-5 years.

UNDERSTANDING PRESSURE GAUGES

Knowing how to read your pool filter pressure gauge and what to do if it's not reading right can save you time and money. Most pools come with a pool filter pressure gauge; it's the gadget that reads the amount of pressure building up inside the filter.

Understanding this device is pivotal in keeping your pool healthy and safe. You should get into the habit of checking your pressure gauge once a week. The typical swimming pool gauge is located on the top of the filter. It's a round device with numbers ranging from 0-60 divided into 10's or 5's by tick marks. The numbers represent the force of water flowing through your system in pounds per square inch or psi for short.

Make sure you know what the normal operating pressure is (it should be recorded when a new pressure gauge is installed). Generally, your filter needs cleaning if the pressure rises more than 10 psi over the original marking.

Double check in your owner's manual if this guideline is right for your pool.

If the pressure reads too low, it's likely that something is blocking the water intake into the filter. The pump uses water to build pressure in the filter, so if something is keeping the water from coming in, the gauge will show the pressure as too low.

If the pressure reads higher than normal, then your filter is working too hard. Your water may be dirty, or the filter might need to be cleaned. If cleaning the filter doesn't help, there may be something wrong with one of the valves in the machine.

If the pressure fluctuates, your water level is probably too low. If your water level is right on the edge, it will fill the skimmer weir—the mechanism that adjusts to changes in water level to take in the right amount—and pressure will gradually build. Then when the skimmer or balancing tank are sucked dry, the pressure drops again. If your water level isn't too low, there may be something blocking the skimmer or any suction line.

SWIMMING POOL WATER CIRCULATION

Every pool has a pump that circulates water through the filter system and back to the pool. The center of the circulation system is the pump. It moves water from the pool and sends it through the filter for removal of any dust, dirt and debris prior to sending it back to the pool. The more your pool water circulates, the less chance for bacteria and algae to take hold and grow. For best results, let your main pool pump run 24 hours a day/7 day a week. The pump should never run less than 8 hours per day. If your

pump is not running, the water from your pool is not being properly circulated or filtered. Running the pump and circulating the water is the best way to help prevent problems.

POOL WATER LEVEL

The level at which the swimming pool skimmers operate best is between one third and one half the way up the opening of the pool skimmer.

If the level is higher, the water moving into the skimmer is going so slow that debris may pass by the opening without being pulled in. If the pool water is so high that it covers the skimmer opening, floating debris can't get in.

If the water is too low the skimmer can bottom out, thereby sucking air into the system which can result in losing the prime and possibly result in burning up your swim pool filter pump motor.

Add water before back washing and vacuuming the pool because this will also lower the water level.

SWIMMING POOL: CLEANING

Most swimming pools have areas with little or no circulation (corners, steps, etc). This is where algae and bacteria can start to grow. It is important to brush the walls and floor down at least once a week to keep the entire pool clean. If you do not have an automatic cleaner, vacuum with your manual vacuum cleaner at least once a week to remove debris.

VACUUMING A POOL

These instructions can be used to hook up a manual vacuum cleaner on a basic pool system. You will need a vacuum head, a vacuum hose, and a telescoping pole.

- Keep sand filter valve handle on "filter" position.
- Close main drain ball valve (located in front of pump strainer basket).
- Attach vacuum head to pole.
- Attach vacuum hose to vacuum head.
- Place head and hose in the water.
- Feed vacuum hose straight down into the water, allowing hose to fill with water.
- Close valves to all skimmers but one or plug off other skimmers with winter plugs. Set vac plate over the skimmer you will vacuum out of. Attach vacuum hose to vac plate. If you do not have a vac plate, take skimmer basket out and plug vacuum hose into hole at bottom of skimmer.
- **Caution:**- suction will be strong! Shut off pump if necessary, to hook up vacuum and turn pump back on when everything is in place.
- Vacuum the pool:- move the vac head slowly around the floor to prevent stirring up debris. If the pool has a lot of debris, you may have to stop vacuuming periodically to clean out the skimmer and pump baskets.
- After vacuuming is finished, remove vacuum hose from skimmer.

VACUUM A POOL TO WASTE

If the pool has algae, dirt or other very fine sediment on the pool floor, it may be necessary to vacuum this sediment to waste.

WATER TESTING AND ANALYSIS

Every pool has characteristics that must be measured and adjusted. This includes the active sanitizer in the water, or free chlorine, PH, and total alkalinity.

One of the most important steps of swimming pool maintenance is water balance. Below are a few of the reasons why having a balanced swimming pool is so important:

If you are using either a salt based pool producing chlorine or a chlorine based pool, then your PH needs to be correct. If pool water is not balanced correctly then the chlorine sanitizer won't be working at full strength killing germs and bacteria. Your water balance needs to be correct or it will affect your skin and eyes. The PH should be neither too acidic nor basic in order to feel comfortable. Test the water in your pool two to three times a week to ensure an optimum swim environment and a long life for your pool. For the best sample of water, collect from the deep end of the pool - collecting at least 200 ml of water.

TEST IDEAL RANGE

PH	→	7.2-7.6
Total Alkalinity	→	120-150 ppm
Calcium/Hardness	→	200-250 ppm (Concrete Pools)
Calcium/Hardness	→	175-225 ppm (Vinyl Pools)
Free Chlorine	→	1-3 ppm
Free Bromine	→	3-5 ppm
Metals: Copper	→	0 ppm
Metals: Iron	→	0 ppm

BALANCING PH

PH is the measure of acid and base in the pool water's. PH of the pool should be tested and adjusted, if necessary, on a weekly basis. If the PH of the pool water drifts to the acid side of the scale, corrosion of pool surfaces and equipment can occur. If the PH of the pool water drifts to the base side - scaling, deposits, and cloudy water can occur. Use a PH increaser to increase the PH of the pool. At 8.5, Chlorine is only about 10% active. At 7.0, Chlorine is about 73% active. If you maintain PH around 7.5, The chlorine will be 50-60% active. Keeping the PH in check will allow you to use the full potential of the chlorine that is already in the pool. To lower the PH of the pool, use a PH decrease.

Note: always follow label directions when adding any pool maintenance products to the pool.

CALCIUM HARDNESS

Calcium hardness is the amount of dissolved calcium in the pool water. Low calcium hardness levels can cause plaster finish etching and shorten the life of vinyl liners. High calcium levels can

result in calcium deposits on the pool surfaces as well as equipment. The proper range for calcium hardness in pool water is 200- 250 ppm (parts per million) for concrete pools and 175-225 ppm for vinyl pools.

TOTAL ALKALINITY

Total alkalinity refers to the alkaline materials dissolved in the pool water. Your water's ability to resist PH changes depends on the alkaline material.

Low Total alkalinity can cause the PH to vary in and out of range. High Total alkalinity makes it difficult to adjust the PH as needed.

To prevent the PH varying up and down, the proper amount of acid buffers, or total alkalinity, must be maintained in the pool. The pool should be tested weekly with a total alkalinity of 120-150 ppm (parts per million) maintained. Low total alkalinity can not only result in PH bounce and fluctuations, but corrosiveness and the possibility of staining increase. High total alkalinity also can cause the PH to fluctuate as well as cause cloudy pools along with possible scaling. To lower total alkalinity, follow the directions from your pool professional. To raise total alkalinity, an alkalinity booster is recommended.

METALS

There should not be any metals present in your swimming pool water. Metals can cause staining in the pool and cause the pool water to turn colors. The most common types of metals that appear in pool water are copper, iron, and manganese. If metals are present in the pool, a stain and scale remover should be used on a regular basis to prevent staining.

You should determine the source of the metals and remove if possible.

SANITIZE WITH CHLORINE

Chlorine is the most important in treating your pool. Their job is to quickly kill any bacteria or viruses that get into the water so that they cannot multiply and cause infections in swimmers.

STABILISED CHLORINE

Stabilized chlorine products sanitize your pool water and kill bacteria. Stabilized chlorine products are protected from sun light degradation and are an ideal means to keep your pool clear and clean.

Most stabilized chlorine products are available in a variety of forms:

There are two forms of stabilized chlorine Stabilized chlorine (trichloro isocyanuric acid)

- this is normally supplied as a 200-gram tablet and Chlorine granules which adds chlorine to the water just like any other sanitizer but it also adds stabilizer at the same time. They are usually put in the skimmer to dissolve over several days.

A free chlorine level of 1-3 ppm should be maintained in the pool always.

Note: you will get more out of chemicals if you add them after the sun has set. Add chlorine in the evening instead of the morning, as this can half your chemical costs. At night, chlorine is used up doing useful work in your pool, like oxidizing all the sweat and sun-tan lotion from your pool party.

During the day, it is mostly wasted -- lost to the UV in the sunlight. Depending on stabilizer levels, and sunshine, you can lose half the chlorine in the pool in as little as 30 minutes! Even when your swimming pool is stabilized, you can lose half the sanitizer in 4 hours. But, at night, all of the chlorine is used doing something useful to your pool.

SHOCK

Shocking the pool on a regular basis is an important element in keeping the pool clear and clean. Swimmers and the environment add waste to the pool that must be eliminated on a regular basis in order to prevent problems such as algae and cloudy water.

Stabilized chlorine tablets: - This is a white tablet or granules which adds chlorine to the water just like any other sanitizer but it also adds stabilizer at the same time. It has a PH close to neutral (7) so that it will have negligible effect on the PH of the pool water.

It is added by dissolving the required quantity in warm water. 60 Grams will add 1 part per million chlorine to each 45 cubic meters (10,000 gallons) of pool water.

CHLORAMINE PROBLEMS

Chloramines are the result of insufficient free chlorine and usually result in a strong chlorine odor in and around the swimming pool. Chloramines are formed as a product of nitrogen and active chlorine (hypochlorous acid — HOCL). The nitrogen is most commonly introduced into the pool water as ammonia in the form of sweat and (unfortunately)urine.

Chloramines (combined chlorine) are poor sanitizers and have a gaseous tendency. The presence of chloramines (and dichloramines / tetrachloride's in particular) cause the following Physical symptoms:

- Red, burning eyes
- Burning sensation in nose, throat and lungs
- Dry, itchy skin and dry hair
- Breathing difficulty leading to "swimmer's' asthma", particularly in young children in addition to these, the pool has a tendency to discolor, becoming milky or green with algae due to the low sanitizing ability of the combined chlorine.

ALGAECIDE

Preventing algae is the key to an enjoyable pool. Algaecides act as a backup to your normal sanitization program and prevent algae from starting and growing in the pool. Algaecide should be added after every shock treatment. Algae is the most common pool water problem only because it is the most visibly obvious one. Algae converts sunlight into food, releasing wastes that become the feeding grounds for unwanted and harmful bacteria and other micro-organisms.

Algae is almost constantly entering the pool, and as soon as the sanitizer level drops too low, the algae begin to take hold and multiply. It takes as little as a few hours on a warm sunny day for your sparkling pool to develop an algae problem.

Proper water balance and minimum sanitizer levels will ensure that any algae spores entering

the pool water cannot take hold. Most pools use chlorine, which should be kept at a minimum level of 1.0 ppm. Once algae has been allowed to bloom, it is quite tiresome to destroy. The common steps to get rid of an algae problem are:

- Shock treat the pool. If you are using chlorine, aim for at least 10ppm free chlorine (10 times the recommended minimum level).
 - Circulate the water round the clock, if possible.
 - Brush the pool and vacuum.
 - Add a commercial algaecide prepared for the algae you have (green, mustard or black) according to the instructions.
 - Repeat brushing and vacuuming daily if possible.
- Add more chlorine if the level falls below 5ppm.
- Clean or backwash your filter regularly.

CHEMICAL CARE

The last step in a pool maintenance program is to apply the right products to your water to keep it crystal clear. Adding chemicals also helps you to provide a safe and sanitary swimming environment, and protect the pool surface and equipment from damage

TROUBLE SHOOTING

CLOUDY WATER OR WATER APPEARS TURBID: -

CAUSES:

- Algae
- Too high hardness level
- Too frequent back-washing
- Inefficient filter
- Plugged or channeled filter
- Precipitating calcium compounds
- Improper PH
- Improper total alkalinity
- Too high a total dissolved solids content

REMEDIES:

- Inspect filtration system
- Adjust your PH and total alkalinity to proper levels, as well as the free available chlorine
- Maintain a consistent 1.0 - 1.5 Ppm free chlorine level.

Green, cloudy water or dark green or black spots on pool walls: -

CAUSES:

- Insufficient free-chlorine residual
- Not following routine pool maintenance, including testing and sanitizing.

REMEDIES:

- Super-chlorinate
- Check PH and adjust, if necessary, to comfort zone:
PH 7.2 - 7.8
- Brush spots with pool brush to remove clinging algae
- Maintain a minimum chlorine residual of 1.0 To1.5 Ppm

**EYE BURNS AND CHLORINE-LIKE:
ODOURS**

CAUSES:

- Improper PH
- Combined chlorine

REMEDIES:

- Super-chlorinate
- Adjust PH to proper 7.2 - 7.8 Range
- Maintain proper levels of PH, total alkalinity, and free chlorine residual

STAINS:

(USUALLY BROWNISH STAINS ON POOL SURFACE.)

CAUSES:

- Corrosion of pool's metal hardware due to low PH
- High PH
- High alkalinity
- Dissolved metals

REMEDIES:

- Adjust PH to 7.2 - 7.8
- Adjust total alkalinity
- Check with us about acid washing your pool

Clogged filter. Water flow through your filter is impeded, resulting in increase in circulatory system pressure.

CAUSES:

- Algae
- Calcification
- Hair
- Suntan lotion

- Improper PH
- Improper total alkalinity

REMEDIES:

- Check the guidelines for your pool, including proper PH and total alkalinity, adjust them to proper levels
- Maintain proper levels for PH and total alkalinity

FOAMING. WHEN YOUR POOL WATER LOOKS LIKE SOAP BUBBLES.

CAUSES:

- Too high a concentration of algaecide
- Organic debris in water

REMEDIES:

- Read product labels carefully, and obey dosage instructions
- Discard water, as necessary
- Super-chlorinate
- Adjust PH, total alkalinity, and free chlorine residual to proper ranges
- Maintain those proper levels

SCALE. WHITE, GREY, OR BROWNISH DEPOSITS ON POOL SURFACE OR HEATER COILS.

CAUSES:

- Calcium carbonate deposits caused by excessively hard water
- Accumulation of dissolved solids.

REMEDIES:

- Adjust PH to 7.2 - 7.8
- Adjust total alkalinity

COLOURED WATER (1). WATER IN A NEWLY FILLED POOL TURNS BLUE, BROWN, OR BLACK WHEN FIRST TREATED CHEMICALLY.

CAUSES:

- Chlorine turns unseen copper, iron, or manganese in the water into unwanted and highly-visible compounds
- Water velocity in circulatory system too high

REMEDIES:

- Adjust PH to 7.8

- Run filter continuously and backwash as required
- Vacuum settled material to waste
- Check velocity of water to make sure copper is not leached out of lines.

COLOURED WATER (2). WATER IN ALREADY FILLED POOL TURNS VARIOUS COLOURS.

CAUSES:

- Leaves, other organic debris in water
- Algae
- Insufficient fresh water added to pool

REMEDIES:

- Clean pool of leaves or other debris
- Super-chlorinate
- Adjust the free chlorine residual, the PH and total alkalinity to proper levels
- Maintain those levels Total dissolved solids. (Measures of all dissolved materials). Erratic pool behavior, scaling, staining, reduced chlorine efficiency.

HIGH TDS VALUE.

CAUSE:

- Insufficient fresh water added to pool.

REMEDIES:

- Discard "old" pool water
- Adjust your pool guidelines to proper range
- Maintain those proper levels

PROBLEM: NO SUCTION WHEN VACUUMING.

POOL FILTER PRESSURE RUNNING TOO HIGH, WATER PRESSURE WEAK AT RETURN JET.

- Filter needs to be backwashed. If you have recently backwashed
- Already, try backwashing for longer, 2-3 minutes.

Remember, sand

- Also needs to be replaced every 3 – 5 years.

POOL FILTER PRESSURE LOW OR ZERO, AND/OR BUBBLES COMING OUT OF RETURN JET.

- Make sure water level in pool is at mid-skimmer. Make sure the skimmer is full of water. Make sure pump basket is full of water, and water is circulating through system. If you can see water churning in

pump basket, there is air getting into system. Check pump lid and o-ring for cracks, lid or o-ring may need to be replaced or lubricated. Make sure pump lid is tightened securely.

POOL PUMP MAKING LOUD SURGING OR GURGLING NOISE.

- Water level in pool is probably low, add water to pool until it hits mid-skimmer level
- Filter valve is leaking out the backwash line.
- Check the handle on the valve to make sure it is seated firmly in the position. If it is,
- A gasket may be bad in the valve itself

HELP FULL TIPS

The best time to test the water is in the evening, before adding chemicals and again first thing in the morning to ensure it is suitable for the days bathing.

If the swimming pool is used heavily then water tests should be carried out at least three times a day.

The ideal PH level for pool water is PH 7.5

Strong sunlight can reduce the amount of chlorine in a swimming pool, therefore, monitor levels closely during hot summer days.

Pool water should generally appear clear blue in color, any variations, such as cloudiness, may be caused by bacterial or algae growth, suspended matter or other contamination which must not be ignored.

Check water at the return flow of water to the pool and add any chemicals at this point as well to ensure effective mixing with filtered water.

Regularly clean the pool surfaces including the waterline to ensure that buildup of sun-oils, body fats, algae, airborne pollution and other dirt is not left to build up.

Pool surround paving slabs should be cleaned with a strong chlorine solution, brushed away from the pool.

Never turn pool lights on when pool is drained. Lights should be turned on only when they are submerged.

Never add chemicals to pool while swimmers are in the water.

Absolutely do not mix chemicals. Always add chemicals to water.

Never add water to dry chemicals, even when pre-mixing product.

Pool chemicals can be dangerous. Read all labels and use products according to directions.

Store chemicals in a cool, dry place.