

The Ultimate Water Care Guide



The move into hot tub ownership is an exciting time. You've picked the best hot tub for you, decided on the perfect location, and are now ready to jump in and relax. However, there is one thing that may still be on your mind as you embark on your spa ownership experience: hot tub chemistry.

In fact, "How hard is it to take care of a hot tub?" is one of the first questions many people ask. Learning how to manage the chemistry in your hot tub is not overwhelming and anyone can do it. The basic factors that go into maintaining and balancing your spa water are alkalinity, pH levels, sanitizers, and shock treatments. While you may or may not have any interest in chemistry, in order to maintain clean water that is ready to use at any time you do need to know a couple of simple basics about these things. Don't worry, you don't need a lab coat, it's really easy, and this handy hot tub chemical guide is here to help.

Alkalinity

When it comes to hot tub chemistry, the first thing you want to check is the water's alkalinity. You want to check this before your pH levels because a proper alkalinity level will help to prevent fluctuations in the pH level. If the alkalinity (and pH levels) become too high, the chlorine-based disinfectants won't be as effective and can lead to mineral buildup and other issues like cloudy water, skin or eye irritation, algae formation, and the formation of scales along the sides and bottom of your hot tub.

As you test your alkalinity, you want to fall between 80ppm and 120ppm

Tips on balancing your alkalinity:

Start with a testing strip. When removing the strip from the bottle, tip the opening of the bottle down and let the strips fall into your hand. Be careful to only grab one of the strips, not touching the other strips with your fingers, as you don't want the oils on your fingers to get on the strips and ruin the test.

Dip the strip into your hot tub water. Dip the test strip in the water, just long enough to get it wet, and remove. Shake any excess water off the strip and compare it with the color on the back of the kit. Where your color falls will determine what your next course of action is.

Alkalinity too low. To correct low alkalinity levels, use a Total Alkalinity Increaser. When adding the increaser to your water, follow the directions on the bottle.

Alkalinity too high. If your alkalinity levels are too high it may be an indication of significantly hard water in your area or other issues, contact your dealer to determine your best course of action.

Remember, as you add chemicals to the hot tub, allow your water to circulate for a few hours (or overnight) before re-testing for more accurate readings. Add chemicals slowly in your hot tub and never add more than one at a time. That way you can see how each chemical is influencing your hot tub chemistry, without the guesswork.

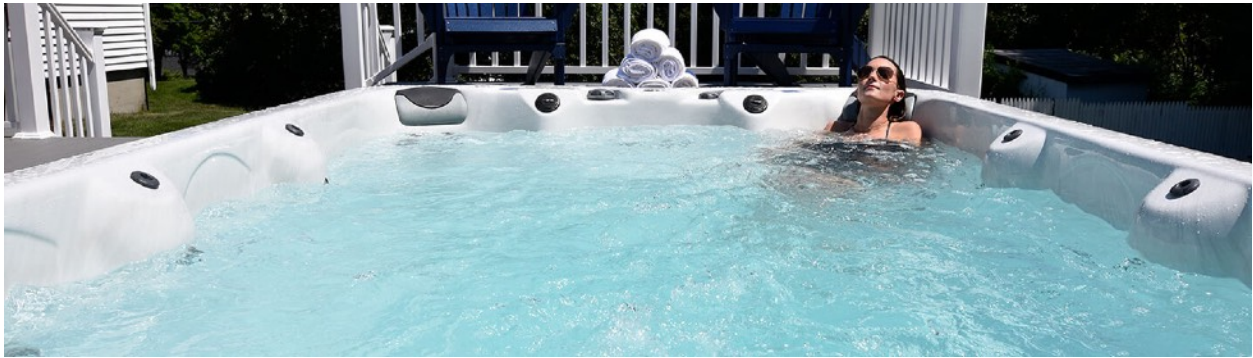
Know Your pH Levels

Before you add any sanitizing chemicals to your hot tub, you will want to check your pH levels to measure how acidic or basic your water is. When checking the pH levels, the ideal range you want to be in is 7.2 to 7.8.

If your pH levels are below 7.2, your water is too acidic which can affect the chemistry in your hot tub and impact the overall efficiency, corrode equipment, and cause ear and eye irritation. On the other hand, if your pH levels are above 7.8, your water is too basic (or alkaline). This can cause cloudy water, poor sanitizer efficiency, and skin and eye irritation.

To determine your pH levels use a standard spa test strip or pH test kit.

Tips for balancing pH levels:



Grab a testing strip. Check your chemistry to determine your next steps to balance the water. When removing the strips from the bottle, take care not to touch any of the other strips.

Dip the strip into your hot tub water. Dip the test strip in the water, just long enough to get it wet, and remove. Shake any excess water off the strip and compare it to the color on the back of the kit.

When pH levels are too low or too high. If the levels are too low (below 7.2), use a pH increaser to help raise the pH levels and balance the water. If the levels are too high (above 7.8), use a pH decreaser to help bring those levels back down into the recommended range.

Add the appropriate chemical. Once you've determined whether or not you need a pH increaser or pH decreaser, follow the instructions on the back of the bottle. In most cases, you'll be instructed to add a few capfuls of the chemical.

When adding chemicals to your hot tub, it's important to remember that the amount of chemical you need will vary with each situation. This is because you have to take into consideration the body chemistry, bather load, and any outside materials being brought into the hot tub, such as mud, grass, and leaves.

Sanitizers

Unfortunately some bacteria and viruses are able to survive in warm water. For this reason, sanitizing your water is important to keep it disinfected, clear, and smelling fresh. The two most popular sanitizers are bromine and chlorine.

Bromine vs. Chlorine

Bromine treatments are more complex than chlorine and can take longer to dissolve in water. Chlorine treatments are easier to apply and go into effect quicker. Chlorine dissolves faster in water below 75° F than bromine.

Initial costs of bromine are higher compared to chlorine, but will be recouped over time (lower number of annual treatments). The cheaper option out of the two, but chlorine requires more maintenance compared to bromine.

Tips to balance your sanitizer levels

Test your water. With the same testing strip you used to determine your pH levels and alkalinity, you can also see where your sanitizer levels fall.

Add chemical sanitizer to balance your water. Opinions vary about which chemical sanitizer works best for them. Because of this, you may want to separately try out both chlorine and bromine to see how your water looks, if your body reacts in a negative way, and which is easier for you to maintain.

In addition to testing different sanitizers, Todd Cossey, Bullfrog Spas Lead Service Tech, recommends using a water conditioning kit, which has a pH balancer in the chemicals to help maintain these levels correctly.

When it comes to using sanitizers, Cossey likes both chlorine and bromine, but recommends always using them in the granular form. He explains that, in his experience, he's seen the most damage caused by bromine floaters.

Shock Treatment

Modern Hot Tub Water Care Taking time to shock your hot tub is another important part of hot tub maintenance. Shock treatments sound a little violent, but really what they do is simply break down the organic contaminants that could lead to cloudy water and unpleasant odors. By oxidizing contaminants and releasing them as a gas, shocking your hot tub reduces the need for high chemical doses; aids in eliminating bacteria, viruses, and algae; and prolongs the life of your equipment.

Experts recommend shocking your hot tub at least once a week to keep your water clean and clear. This can fluctuate depending on how often your hot tub is used, where you live, and humidity.

When it comes to shocking your hot tub, there are two types of treatments to be aware of: non-chlorine and dichlor (chlorine) shock.

Non-chlorine shock. A monopersulfate compound (aka MPS), is an oxygen-based shock and is used more regularly for maintenance.

Dichlor shock. A form of chlorine often called sodium dichlor, this is both a sanitizer and shock. This type of shock is used occasionally to clear up problems. In most cases, dichlor shock is recommended only when you refill your hot tub. After that the non-chlorine shock is the best option to go with.

The shock treatment dosage depends on the size of your hot tub, water type, water temperature, hot tub placement, and other factors.

When it comes to shocking your hot tub, read the label to ensure you are conducting the spa shock correctly. Oxidizers (shock) can be dangerous when mishandled or are used incorrectly. Before beginning, read the label on the shock treatment package to verify you are adding the correct dosage to your hot tub.

Tips for shocking your hot tub:

Test your water. Similar to the first step above, before you shock your hot tub, take a moment to test the water.

Keep the water calm. Because you don't want to agitate the oxidation gases (shock), make sure you turn off the blower, but leave the circulation pump on. This way you're still allowing the shock to circulate within the spa, killing the bacteria, but not stir the gases up too much.

Read the label. As mentioned above, make sure you read the label before adding the shock to your hot tub. If you measure incorrectly, this can lead to a stronger oxidation strength than you'd planned and lead to problems.

Measure your shock with care. When it comes to shocking your spa, dosage is extremely important. Carefully measure your shock to confirm you're adding just enough (not too much or too little) to disinfect your hot tub and not cause you issues.

Shock your spa with care. High winds can blow the shock treatment into your face or other human errors (spillage) can happen. To prevent these things, carefully pour the shock over the surface of your water. If a spill happens, clean it up immediately and keep the shock out of reach of children.

Wash your hands. Once you're done shocking your hot tub, wash your hands to ensure none of the shock treatment is lingering on your fingers.

Alternative Water Care Programs



If you want to try a different water care regimen than standard chlorine or bromine, there are a few products available. These are sometimes sold as “natural” or “premium” water care systems. There are several brand names available. These alternative solutions may or may not be more “natural” depending on how you look at them. However, they do take a somewhat different approach to inhibiting water-borne contaminants. Some of these solutions are marketed as a technology that hinders bacterial growth by eradicating the food source. Others are sold as metal-based bacterial inhibitors. Most contain additional water conditioning agents that claim to help your water feel softer to your skin.

Tips for using alternative water care systems:

Investigate thoroughly. The information available for several of these regimens is a bit hazy. That’s not to say that they don’t work. Many hot tub owners swear by them. However, it’s wise to inform yourself thoroughly and be aware of the potential issues. Ask your local spa dealer and those you may know who have used the specific system.

Clean with a bio-film eliminating agent. It’s important to prepare for switching to these alternative regimens by thoroughly cleaning and removing all organic matter and any debris you don’t want in your hot tub. Apply the prescribed agent, usually included with these systems, turn your jets on high for 30 minutes to flush plumbing.

Drain your hot tub. This will ensure no unwanted residue is left, and gives you a fresh start. You may want to let your spa dry for several hours to a few days to ensure as much water as possible is removed before refilling.

Test your water. Before adding any conditioning agents into your hot tub, test the water to see where your alkalinity and pH levels fall. Once you’ve tested your water, refer to instructions included with your system for any further steps to take in preparation.

Salt Water Systems

Saltwater treatment systems are another alternative which have picked up traction over the past few years. Salt systems for hot tubs generally use electricity to generate chlorine or bromine from a salt base (sodium hypochloride or sodium bromide). For many, the appeal of going with saltwater systems is to reduce the time and effort of water care. While this can be the case with some systems, there is significant care and maintenance associated with many of the components used in these systems and some other factors to consider.

If you're considering going the saltwater treatment route, it's important to look at both pros and cons:

Pros & Cons

Saltwater hot tub systems generate the same sanitizers that you would add to the water in conventional water care regimens, however, some of the additional properties of salts can soften water and feel good to the skin. With the upfront costs, saltwater hot tubs are usually more expensive.

Saltwater hot tubs constantly generate their own chlorine or bromine, keeping the sanitizer flow fairly consistent. Salt can corrode the metal and rubber seals within your hot tub's equipment and plumbing. Because of this, you may need to replace metal parts, seals, heaters, and other components damaged by the salt.

For those considering this option, here are a few things to keep in mind. Due to the salt, you'll have to do an additional test each month to check the salinity of your hot tub. Because of the corrosive nature of saltwater and other factors, Bullfrog Spas expert Cyndi Blessing (who used an aftermarket saltwater system with her hot tub) wouldn't recommend using a salt generation system. In her experience, she found that "it was actually harder to balance the water compared to a more traditional chlorine or bromine system."

Todd Cossey, a seasoned spa technician at Bullfrog Spas, adds, "Quite a few dealers have installed aftermarket saltwater systems, and although they're suppose to be great, they can get out of control fast and can damage the spa."

The discussion of salt systems for hot tubs brings up another important factor. **Most spa manufacturers don't cover chemical damage to spa surfaces and equipment.** So, whatever system you choose, make sure it's not going to damage the hot tub in any way.

The more you work with hot tub chemistry and water care, the better understanding you'll have on what to do to maintain the correct water balance in your spa. It will get really easy after a while. Additionally, Backyards & Billiards is always available and ready to answer your questions and help you decide which care option works best for your hot tub & the Colorado Springs environment.