



## Water Chemistry (in order of adjustment)

1. Adjust Alkalinity to between 80 – 120 ppm
2. Adjust Ph to between 7.2 – 7.8
3. Adjust Sanitiser to between 3 - 5 ppm for Chlorine and 60 – 100 ppm for Peroxide

### **Alkalinity**

Total alkalinity is the measure of the amount of alkaline buffers (primarily carbonates and bicarbonates) in your water. These alkaline substances buffer the water against sudden changes in pH. Total alkalinity is considered the key to water balance. **It is the first parameter you should balance when making routine adjustments to your water.**

If you neglect to check the total alkalinity in your spa, you may have trouble balancing the pH. You may also notice that pH fluctuates suddenly despite your best efforts to keep it in the ideal range. If the alkalinity is too low, anything introduced to the water will have an immediate impact on pH. Abrupt shifts in pH can cause scaling or corrosion of metal equipment and fixtures as well as other problems. When the total alkalinity is high, the pH has a tendency to drift upward, causing scale to form.

Maintaining an ideal level of alkalinity will protect your spa and its equipment from the harmful effects of sudden pH fluctuations. Think of the alkalinity as training wheels: it keeps the pH in balance without allowing it to tip too far to either side. Of course the pH can still drift upward or downward, but that change will happen gradually as long as the alkalinity falls within the ideal range. The ideal range of total alkalinity for spas is between 80 and 120 ppm (mg/L).

When the total alkalinity is too low, add sodium bicarbonate. If the total alkalinity is too high, you can lower it by using muriatic acid or sodium bisulphate

### **pH**

We use pH as an index to express how acidic or basic a solution is. (The scientific definition of pH is “the negative logarithm of the hydrogen ion concentration”.) A pH greater than 7.0 is basic, and a pH lower than 7.0 is acidic. In spas it is important to maintain the water in the slightly basic range of **7.2 to 7.8**. The National Spa and Pool Institute (NSPI), the industry association in the United States, has set a standard of 7.2 to 7.6 as the ideal pH.

#### **If pH is Low:**

- The water can corrode surfaces, metal equipment or fixtures.
- Bathers can experience discomfort from burning eyes and itchy skin.
- The chlorine may dissipate more quickly.

#### **If pH is High:**

- Calcium and metals tend to come out of solution (the opposite of dissolving) at high pH levels, creating the potential for staining and scale formation. The calcium and metals will actually create deposits and discoloration on spa walls and equipment.
- Bathers can experience discomfort from burning eyes and itchy skin.
- High pH can contribute to cloudy water.

## Sanitiser

Every sanitiser has two key functions, to sanitize (kill bacteria and all living organisms) and also oxidize (destroy contaminants and waste). The most popular spa sanitiser is chlorine. Chlorine is also classified as a disinfectant, meaning that it is capable of killing bacteria, algae and other organic material instantly. All chlorine does the same thing when it is added to the water, regardless of the type of chlorine added. It forms **free available chlorine**. Free chlorine is the form of chlorine that kills bacteria, algae and disease-causing organisms. It is your spas defence against microbiotic intruders. Another popular sanitiser is Peroxide which is the chlorine free alternative. Peroxide is safer to store and safer to use and is fast becoming the preferred choice of Softub owners.

When using chlorine you must maintain the free chlorine at a sufficient level to disinfect potential contaminants on contact. The more chlorine in the water, the more it can sanitise and oxidize the water. (Remember that sanitising and oxidizing are the processes that chlorine uses to keep the water clear and clean.) However, if the free chlorine level gets too high, it can make the water uncomfortable for bathers. The trick is to keep the free chlorine level in the ideal range. In spas the level needs to be maintained at a slightly higher level due to the smaller volume and higher temperature. The minimum level should be 2 ppm in a spa and no higher than 10 ppm, and ideally 3 to 5 ppm. With peroxide the levels should be kept between 60 – 100 ppm.

## Hints for Carefree Operation of your Softub:

- Turn air dial off after use.
- Check chemicals at least weekly.
- Close lid when tub is not in use.

**Any questions or queries call Softub on 1800 763 882**