

pH Demystified

pH is a measure of the acidity or alkalinity of a solution. If you eat pickles or drink lemon juice - both of which are acidic - you lower the pH in your stomach. You would then need to eat or drink something alkaline (like bicarbonate of soda or Milk of Magnesia) to neutralise the acid, and thus raise the pH within your stomach. It is much the same with the water in your pool. High pH is lowered by the addition of an acid, low pH is raised by the addition of an alkali.

It is called the pH scale because it measures the *power* of a solution to yield *Hydrogen* ions.

The pH scale runs from 0 to 14, with a neutral solution having a mid-point value of 7.

Acidic 0-1-2-3-4-5-6- 7 -8-9-10-11-12-13-14 Alkaline

pH 0 is highly acidic and pH14 is highly alkaline. The scale is logarithmic, so pH9 is 10 times as alkaline as pH8, and pH4 is 100 times as acidic as pH6.

The importance of a correct pH reading.

The ideal range is between pH7.2 – 7.6, matching the natural pH of the body (pH 7.4).

The pH value affects the ratio of sanitising chlorine (hypochlorous acid) and chlorine stabiliser (cyanuric acid), formed when chlorine dissolves in the water, and so determines the effectiveness of the added chlorine. At pH6.5, 90% of the chlorine becomes hypochlorous acid, at pH7.4 the figure is 65%, and at pH8 only 20%; the rest will be cyanuric acid.

If you allow the pH to vary from pH7.4 you must add more chlorine to ensure adequate sanitising of the water, or alternatively you will have unacceptably high levels of under-stabilised free chlorine in your pool. This under-stabilised chlorine will break down swiftly in the sun and so you will have to add more chlorine!

High pH results in scale formation - on pool surfaces, pipes, fittings and every grain of sand in the sand-filter. Quite quickly the sand-filter becomes a solid block of stone. At pH8.6 the minerals dissolved in the water combine with the carbonates, resulting in calcium carbonate deposits - lime scale. Calcium carbonate also appears as microscopic particles suspended in the water, giving a milky appearance. The sand-filter removes the particles but will need back-washing more frequently and for longer.

Low pH corrodes metals and leaves behind metal oxides, which stain pool surfaces. It is uncomfortable to swim in a pool with low pH. Don't be tempted keep a low pH to get more out of your Tricloro tablets – the result will be corroded metal fittings and grout, stinging eyes, sore throat and a much higher bill for chlorine.

Automatic pH Regulators

The single most cost-effective improvement you can make to your pool is to install one of these little beauties. They sample the pH of the water as it leaves your filter on its way back to your pool. If the pH is too high - and it usually is - the system's systolic pump injects tiny quantities of Hydrochloric acid (a very inexpensive chemical when compared to the granulated pH Minus that most pool-owners use) to bring it back to the optimum of pH7.4.

Once your pH level has been stabilised by the Auto pH Regulator your consumption of Chlorine will plummet; returning significant savings for years to come. Calcification will be a thing of the past and your pump and filter will last much longer. The water will have a better 'feel' and colour, also. All in all, an Auto pH Regulator is a sound investment.

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