



ALKALINITY???

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wanted to share some information I found at this website pertaining to Alkalinity: https://www.freedrinkingwater.com/water_quality/quality1/28-08-alkalinity.htm

WHAT IS ALKALINITY?

The alkalinity of water is a measure of how much acid it can neutralize. If any changes are made to the water that could raise or lower the pH value, alkalinity acts as a buffer, protecting the water and its life forms from sudden shifts in pH. This ability to neutralize acid, or H⁺ ions, is particularly important in regions affected by acid rain.

The alkalinity is equal to the stoichiometric sum of the bases in solution. In the natural environment carbonate alkalinity tends to make up most of the total alkalinity due to the common occurrence and dissolution of carbonate rocks and presence of carbon dioxide in the atmosphere. Other common natural components that can contribute to alkalinity include borate, hydroxide, phosphate, silicate, nitrate, dissolved ammonia, the conjugate bases of some organic acids and sulfide. Solutions produced in a laboratory may contain a virtually limitless number of bases that contribute to alkalinity. Alkalinity is usually given in the unit mEq/L (milliequivalent per liter). Commercially, as in the pool industry, alkalinity might also be given in the unit ppm or parts per million.

As the concentration of calcium carbonate increases, the alkalinity increases and the risk of acidification decreases.

WHAT AFFECTS ALKALINITY?

Total alkalinity is affected by environmental factors; rain, acidic sanitizers, addition of fill water and other product applications can all change the alkalinity over time. Most alkalinity in surface water comes from calcium carbonate, CaCO₃, being leached from rocks and soil. This process is enhanced if the rocks and soil have been broken up for any reason, such as mining or urban development. Limestone contains especially high levels of calcium carbonate and when used to decrease acidity in homes can runoff into surface waters and increase alkalinity. Alkalinity is significant in the treatment of wastewater and drinking water because it will influence treatment processes such as anaerobic digestion. Water may also be unsuitable for use in irrigation if the alkalinity level in the water is higher than the natural level of alkalinity in the soil.

Alkalinity of water may be due to the presence of one or more of a number of ions. These include hydroxides, carbonates and bicarbonates. As discussed in previous articles, hydroxide ions are

always present in water, even if the concentration is extremely low. However, significant concentrations of hydroxides are unusual in natural water supplies, but may be present after certain types of treatment. Small amounts of carbonates are found in natural water supplies in certain sections of the country, rarely exceeding 3 or 4 gpg. They may also be found in the water after lime soda has been used to soften the water. Bicarbonates are the most common sources of alkalinity. Almost all natural supplies have a measurable amount of this ion, ranging from 0 to about 50 gpg.

Keeping a close watch on the alkalinity of your source water is very important because it will enable you to keep your Ph where you want it much easier. Since pH can cause corrosion, it should be addressed to maintain plumbing and preventing premature equipment failure. Alkalinity is often raised when soda ash is fed to also raise the pH. Alkalinity will also be affected by using limestone feed tanks or other neutralizing filters. Much more information can be found on this subject, but I thought this was a good way to get you thinking about it. 💧💧💧