

Chemistry of drinking water

CARBON DIOXIDE

- made by **FILTERSORB SP3**

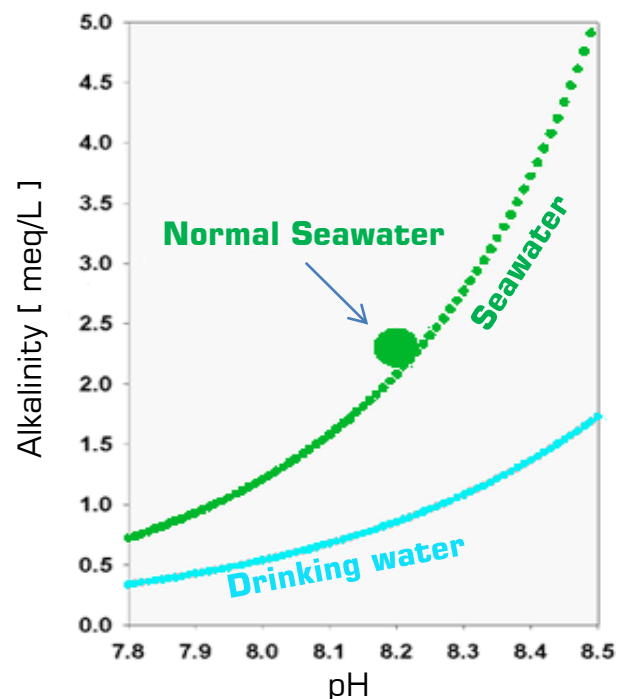
Carbon dioxide is a molecule with the chemical formula CO_2 . The linear molecule consists of a Carbon atom that is doubly bonded with two Oxygen atoms.



CO_2 exists in water in the form of dissolved temporary hardness $\text{Ca}(\text{HCO}_3)_2$. Carbon dioxide is only water soluble when pressure is maintained. As the pressure drops CO_2 will escape to air as gas. This event is characterized by the CO_2 bubbles forming in water. Human use carbon dioxide in many different ways. The most familiar example is Coca-Cola, Soft Drinks and Beer to make them fizzy.

Carbon dioxide has a specific solubility in water as $\text{CO}_2 + \text{H}_2\text{O} \rightleftharpoons \text{H}_2\text{CO}_3$. At any given pH there is an exact mathematical relationship between H_2CO_3 and both bicarbonate (HCO_3) and Carbonate (CO_3).

For example at a pH of about 9.3 in Drinking water the carbonate concentration is 100 times that of carbonic acid (H_2CO_3). At higher pH this multiplier rises and consequently there are more HCO_3 and CO_3 present



The theoretical relationship between carbonate alkalinity and pH for seawater (green) and freshwater (blue) equilibrated with the atmosphere (350 ppm carbon dioxide)

How SP3 Water functions in human body ?

Answer: Carbon dioxide is a waste product of the respiratory system, and of several other chemical reactions in the body such as the creation of ATP. Pure Carbon cannot be transported in the body, so CO₂ is one for it takes that is water soluble. Levels of CO₂ also tell the body when it need more oxygen. Carbon dioxide has 3 very important functions:

It is a dilator of smooth muscle. Smooth muscle surrounds any hollow space in the body, i.e. bronchial airways, bladder, bowel, arteries etc. If your alveolar CO₂ level is low the smooth muscle

around these hollow spaces will spasm and constrict.

Transportation of oxygen to the tissues: Oxygen is transported to the tissues through the bloodstream via the hemoglobin molecules. Each hemoglobin molecule carries 4 oxygen molecule s bound to it. The Bohr effect proves that if the alveolar CO₂ levels are low then the oxygen molecules will not dissociate from the hemoglobin molecules to the optimal level. It is the regulator of pH level in blood.

All skin Benefits with SP3 Water

All cells in the body, regardless of their functions Heart Cells, Brain Cells, Skin Cells release carbon dioxide as their waste product. Carbon dioxide is removed from the body by Red Blood cells or erythrocytes which are responsible for carrying oxygen O₂ in human body. There are 30 trillion cells in human body which are carrying carbon dioxide (CO₂). In normal blood, Red Blood Cells account for 45% of the total volume. On average, we have about 5 Million red cells per cubic millimeter of blood. Carbon dioxide is the "cost of doing business" of any cell in our bodies. So we breath in oxygen to our lungs, the red blood cells pick up the oxygen from our lungs and carry it to our tissues until they encounter an area that has been working hard and has excess of carbon

dioxide. When the blood cells are exposed to high concentration of carbon dioxide, they flip their conformation, release the oxygen molecules, and pick up the carbon dioxide so that we can exhale it from our lungs. In a sense, by adsorbing small amounts of carbon dioxide made from the cartridge just like below the surface of the skin, we are forcing to increase the blood circulation in the body. Skin is smooth, eye circles are clear and darkness is removed, cellulite vanishes and all stretch marks are improved because of the ideal blood circulation.

Note: the temperature of the treated water should not exceed 28°C.

Water with high H₂CO₃ (bicarbonate) is the healthiest water to drink. It is critical to see that alkalinity does not depend strictly on pH. pH measures the degree of alkalinity but not the quantity. It is like the relationship between Temperature and Heat.

The ultimate water treatment system is water treated with FILTERSORB SP3.

"Cancerous Tissues are Acidic, whereas healthy tissues are Alkaline"

Water splits into **H⁺** and **OH⁻** ions

- If there is an excess of **H⁺** it is acidic
- If there is an excess of **OH⁻** it is alkaline

– Dr. Otto Heinrich Warburg
(The Real Cause of Cancer)

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