PristineHydro’s Magnesium Bicarbonate Alkaline Water

pH stands for potential hydrogen, not actual. To truly understand what the pH of water means, a bit of knowledge of chemical biology is needed; for instance, an understanding of the difference between positively charged hydrogen cations and negatively charged hydrogen anions.

Water containing no ions has a pH of 7.0, thus it’s an insulator, i.e. a non-conductive medium. However, this water must be kept isolated (e.g. in a sealed container) because this water is hungry for ions, whether positive (cations) or negative (anions) ions. Water devoid of ions will rapidly ionize itself with carbon dioxide (CO₂), which forms carbonic acid; a positive ion (H₂CO₃). The equation is H₂O + CO₂ ⇌ H₂CO₃; the water becomes a conductive medium.

Nature’s best drinking water began its life as frozen carbonic acid rainwater formed on mountaintops. Carbonic acid is a natural solvent and is stable in river water at 4 degrees Celsius. This mild carbonic acid water releases minerals optimally and relatively according to the abundance of the mineral in the earth’s crust and its specific density. For example 98.5% of the earth’s crust is made up of eight elements with seven being minerals: silica, alumina, iron, calcium, sodium (chloride), potassium and magnesium, along with oxygen.

Here’s how it works: the carbonic acid water releases traces of silica and alumina because they are very hard. It released some iron (iron is the third most prevalent mineral in the earth’s crust and the number one element on the planet). Then the carbonic acid water releases calcium, sodium, chloride, potassium, and magnesium, the initial elements released are in the form of oxides, carbonate, and hydroxides.

As the carbonic acid water flows down river it encounters vortexes causing the water and oxides to implode knocking the oxygen off the calcium, sodium, chloride, potassium, and magnesium oxides, creating a carbonate (a carbonate is an oxide minus the oxygen). As these carbonates rush down the river (carbonic acid water) they are reduced in molecular size to hydroxides; this is as small as they are going to get (the calcium hydroxide reacted a little differently with the H₂CO₃; we’ll spare you the complex redox reactions, but when it is all said and done, they are all hydroxides!). Prior to the Industrial Revolution spring water typically had a TDS of 50 to 120 ppm.

As we mentioned earlier, carbonic acid (H₂CO₃) is stable in river water at four degrees Celsius. When it warms up the carbonic acid will as well, drops (dissociates) a hydrogen ion and becomes a bicarbonate ion HCO₃⁻ (a negative ion). The equation is H₂O + CO₂ ⇌ H₂CO₃ ⇌ H⁺ and HCO₃⁻.

Bicarbonate ions are very unstable. They are also like magnets and they have a strong affinity for the positively charged calcium, sodium, potassium, magnesium, and chloride hydroxides (which stabilize them). This is a process that naturally occurred and it resulted in acid-free water with a high alkaline pH due to the presence of bicarbonate electrolyte salts; what nature calls drinking water!
Again, pure ion-less water is a non-conductive medium; however, bicarbonate electrolyte salts in water act like little circuits and they conduct specific magneto-electric voltage-gated ion channels in the body. These electrolyte salts don't have anything to do with building muscles, organs, or bones, they facilitate voltage-gated ion channels in the body. Calcium bicarbonate contracts the muscle; magnesium bicarbonate relaxes the muscle; sodium and potassium bicarbonates facilitate the sodium/potassium pump. Cells continually pump sodium ions out and potassium ions in; this is how human cells get hydrated (part of the ATP-ADP cycle).

The ATP-ADP cycle is a process by which energy is stored and used in living things. ATP/ADP ratios range from 2.5 at very low magnesium levels to about 6 at normal magnesium levels. Therefore, low magnesium conditions impair normal function of the ATP-ADP cycle. Our bodies use a lot of energy and ATP (adenosine triphosphate) is one of the major currencies of energy in our cells; it is continually used and rebuilt throughout the day.

These electrolyte salts pass from the intestinal walls and into the lymphatic system, which delivers all of its products to the blood, which in turn, distributes to all parts of the body. The pure non-conductive 7.0 pH acid free water enters the stomach, which in turn distributes it to the cells!

The CO₂ in the blood reacts with water (H₂O) in red cells resulting in the production of carbonic acid (H₂CO₃). This is known as the carbonic acid/bicarbonate buffer system of the blood. Bicarbonate accounts for the transport of 60% to 70% of CO₂ in blood. Again, carbonic acid is stable at 4°Celsius; therefore it immediately dissociates a hydrogen ion (H⁺) and becomes H⁺ and a bicarbonate ion (HCO₃⁻). The H⁺ subsequently binds to hemoglobin, and this binding triggers the Bohr effect.

What this means is that as the amount of CO₂ increases, more H⁺ are formed and the pH will decrease. Thus, a lower pH in the blood is suggestive of an increased CO₂ concentration, which in turn is suggestive of a more active tissue that requires more oxygen. According to Bohr, the lower pH will cause hemoglobin to deliver more oxygen!

The bicarbonate ions defuse out of the red blood cells to be carried by the plasma. Like bicarbonate ions in river water, bicarbonate ions in plasma are unstable, and they stabilize themselves with calcium, magnesium, sodium, potassium, and chloride hydroxides. The pancreas is a reservoir for these bicarbonate salts and it excretes them when needed to maintain the pH balance of our body fluids.

Water that is stabilized with bases i.e. calcium, magnesium, sodium, potassium, or chloride; will not rapidly ionize itself with CO₂, which forms carbonic acid! It will ionize itself slowly over time, until all minerals are consumed and the water will then again become a conductive acidic medium.

Here's where pH readings get complicated. Acids (cations) and bases (anions), if in sufficient quantities in water, can offset each other. If a lower pH of water is desired acids can be
added; if a higher pH is the goal, bases can be added. Just because water has a high alkaline pH, does not mean it is acid free; and a low pH does not mean there are no bases! Furthermore the pH of a solution does not necessarily reflect its buffering capacity; buffering capacity is in the parts per million of total dissolved solids (TDS). And to make matter more complicated magnesium hydroxide does not read on a TDS Meter!

The pH of acid free water with 10 ppm of bases and up ranges from 10.5 to 9.5 depending on atmospheric conditions, i.e. temperature, altitude, and the amount of time it is exposure to air. The buffering capacity of acid free water with a TDS of 10 ppm or 100 ppm is almost the same: very close to zero. That’s where our product ElectrolyteBalance comes in!

THE POLLUTION CYCLE & HARD ACIDIC WATER

Let’s now add acid rain, a global environmental disaster, to the equation. Acid rain is a broad term referring to a mixture of wet and dry deposition (deposited material) from the atmosphere containing higher than normal amounts of nitric and sulfuric acids — resulting from the burning of fossil fuel. Acid rain occurs when sulfur dioxide and nitric oxide react in the atmosphere with water and other chemicals to form sulfuric acid and nitric acid.

Acid rain causes a cascade of effects that harm or kill individual fish, reducing fish populations, can completely eliminate fish species from a body of water, and decrease biodiversity. The damage extends to land animals, affecting their behavior and feeding patterns. Acid rain kills trees, crops, and other vegetation. It accelerates the decay of building materials and paints, thus buildings, statues, and sculptures; corrodes copper, galvanized steel, and lead piping; damages such manufactured things as automobiles; and reduces soil fertility. Acid rain raises the level of heavy metals, many of which are carcinogenic, teratogenic, mutagenic, reproductive toxins, or neurological toxins in drinking water supplies. Commonly called, “hard water,” the farther the acidic water travels to get to its destination the harder it gets! The drinking water is now loaded with acids and inorganic minerals!

The nitric and sulfuric acids act as electrolytes; the drinking water now has an extra electrolyte (acids) and the water itself is a conductive medium. The conductivity of the acids overrides the bicarbonate electrolyte salts across the board, creating an open channel of conductivity! This acidic water enters the stomach, which in turn distributes acidic water to the cells! The sulfuric acid [H₂SO₄] and nitric acid [HNO₃] mitigate the carbonic acid/bicarbonate buffering system of the blood.

Natures equation: H₂O + CO₂ <=> H₂CO₃ <=> H⁺ and bicarbonate (HCO₃⁻)
New deadly equation: H₂O + H₂SO₄ + HNO₃ + CO₂ => acids

Insufficient amounts of bicarbonates in our blood reduces our body’s ability to manage (neutralize and dump) the acids we consume and the acids produced by our body. This is known to be the root cause of many diseases. Since the body cannot manage the acid, acidic waste accumulates; these acid wastes show up as symptoms of metabolic acidosis: disease!
To add insult to injury, tap water is chemically treated with a variety of products that can include chlorine, bromine, chloramine (ammonia with chlorine), hydrofluorosilicic acid (industrial grade fluoride), acrylamide, soluble silicates, aluminum sulfate, phosphate, polymers, hydrated lime, potassium permanganate, and many other chemicals.

The addition of any kind of chlorine to water creates hydrochloric and hypochlorous acids. The fluoride add to our water is not sodium fluoride; it is hydrofluorosilicic acid (industrial waste fluoride). Chlorine and bromine react to create haloacetic acid. The addition of chloramine to our water reacts to create five ido-acids. When chloramine combines with hydrofluorosilicic acid it creates ammonia-fluorosilicic acid, which is so corrosive, that it will leech lead from plumbing systems. This is on top of the sulfuric and nitric acids, the two main components of acid rain.

Let’s examine one of the many consequences of acid rain and hard water! Iron, again, is the third most prevalent mineral in the earth’s crust and number one element on the planet because it is relatively soft. Acid rain releases mass quantities of inorganic iron, thus most every human faces systemic inorganic iron overload. This overload has also increased dramatically since the introduction of “inorganic iron fortified” white flour products (breads, cereals, crackers, chips and other processed foods).

Once inorganic iron has entered the body there is normally no physiological mechanism for disposing of excess inorganic iron (menstrual bleeding in women excepted). Inorganic iron antagonizes copper and chromium, which knocks out insulin and glucose causing Type 3 diabetes. Inorganic iron gradually accumulates in various tissues which can induce morbidity.

Some people with systemic inorganic iron overload never have symptoms. Early signs and symptoms often overlap with those of other common conditions.

**Common symptoms include:**

- Joint pain
- Abdominal pain
- Fatigue
- Weakness

**Later signs and symptoms of the disease may include:**

- Diabetes
- Loss of sex drive
- Impotence
- Heart failure
- Liver failure

“Water hardness (excess inorganic minerals in solution) is the underlying cause of many, if not all, of the diseases resulting from poisons in the intestinal tract. These (hard minerals) pass from the intestinal walls and get into the lymphatic system, which delivers all of its
products to the blood, which in turn, distributes to all parts of the body. This is the cause of much human disease.” Dr. Charles Mayo of the Mayo Clinic

The average person drinks about a gallon of water per day. Adding up the cups of coffee, tea, soft drinks, food, and water, this gallon isn’t too much. At a gallon a day, the average person drinks up to 450 12-ounce glasses of solids during their life. Think of it: 450 glasses of mineral solids in your system during a lifetime.

Hard acidic water thus is your body’s greatest enemy. It can strike down a human body, crippling joints, causing repeated surgeries, enlarged hearts, hardened arteries, gall stones, kidney stones, hearing problems, and forgetful minds, destroying what should be a person’s golden years of life.

YOUR CURRENT DRINKING WATER OPTIONS EXPLAINED

**SPRING WATER**: comes from rain. It rains chemicals and acid rain (the pollution cycle). When rainwater falls from the clouds as rain, it falls through air filled with bacteria, dust, smoke, smog, chemicals, minerals, gases, radioactive fallout, etc.

**WATER IONIZER** *(ionization)*: removes acids from tap water; producing acid-free tap water. The water is loaded with the same contaminants found in the source water i.e. fluoride, heavy metals, chemicals, pharmaceuticals, disinfection by-products, etc. Checking the TDS of the source water with a TDS meter, then checking the ionized water, you will find that both have the same TDS. Now, the water ionizer was a great step in our understanding of water as it addressed the acids in water which as discussed causes major health problems. However, under close examination (laboratory analysis) it is revealed as merely acid free tap water!

PristineHydro removes acids from water with its patent-pending technology, and so does NOT electrocute your drinking water the way ionizers do; the concept of electrocuting dead polluted water with a water ionizer to revive it is pseudo-science. Water ionizers rupture already lifeless water releasing hydrogen and hydroxide ions. Chemically speaking it is not even natural water anymore, it is more or less a man-made liquid concoction. That is the reason the created pH of ionized water only lasts for 24 to 48 hours; any other water on earth with that much TDS, would keep its pH reading for months if not years. PristineHydro produces pristine water the way nature designed it; PristineHydro water maintains its pH for up to one year.

**BOTTLED WATER**: quality is unregulated. As many as 24,500+ chemicals have been found in plastic bottled water. Plastic bottle waste is also a recognized environmental disaster.

**REVERSE OSMOSIS**: removes most contaminates, except arsenic and acids (which are liquids and gasses) i.e. sulfuric and nitric acids (acid rain), hydrofluorosilicic acid (industrial waste fluoride), hypochlorous and hydrochloric acids (chlorine reactions), haloacetic acid (chlorine and bromine reactions), producing relatively clean acid water. In fact RO water is aggressive acidic water that is devoid of bicarbonate salts.

**DISTILLED WATER**: rising steam is supposed to leave all impurities behind in the distilling process, but in fact gases, some chemicals, and some organic compounds are taken along
with the steam. Distilling does not remove acids or chlorine/chloramine, which are liquids and gasses i.e. sulfuric and nitric acids (acid rain), hydrofluorosilicic acid (industrial waste fluoride), hypochlorous and hydrochloric acids (chlorine reactions), haloacetic acid (chlorine and bromine reactions); the chlorine/chloramine, acids, and other chemicals evaporate and end up in the product water. In the end, distilling produces highly aggressive acidic water devoid of bicarbonate salts; in fact, in the 1950s distilled water was sold in drug stores with the label “Not for Drinking!” and was predominantly used to fill car batteries and steam irons.

**CARBON BLOCK FILTERS:** insufficient as stand-alone filters; produces acidic water that is loaded with contaminants.

**TAP WATER:** not recommended for drinking; acidic and chemically treated lifeless water that contains many contaminants including sulfuric, nitric, hydrofluorosilicic, haloacetic, hypochlorous, and hydrochloric acids; fluoride, heavy metals, chlorine/chloramine, disinfectant by-products, pharmaceuticals, etc.

Natural water by design must have mineral content. By removing minerals, water becomes acidic and aggressive, meaning it will seek to replace the ions (minerals) removed. Water treated by either distillation or RO will become even more acidic upon contact with airborne CO₂ that reacts with the water and creates carbonic acid, which displaces the ions (minerals) that were removed. The use of distilled and/or RO water will cause electrolyte imbalances in your body because it is stripped of all minerals. In turn, your body will leach electrolytes and minerals from tissue and bone in order to neutralize the acids in the water you are drinking.

Clean, healthy water should not be “pure” H₂O, it should be “pristine” H₂O; in fact, waters with the most epicurean interest are acid-free and contain bicarbonate salts and trace elements.

**PristineHydro™ The Only Water Revival System**

PristineHydro™ has taken water filtration to a new level called “water revival.” Our patent pending water filtration/revival process removes 100% of all contaminates, including acids, fluoride, chloramine, arsenic, perchlorate, pharmaceuticals, and the like. It then utilizes an innovative, advanced re-mineralization, restructuring, recharging, and reprogramming processes that sets a new standard for acid-free, high-alkaline magnesium bicarbonate water – PristineHydro™ Water. The TDS of PristineHydro water is 60 ppm, which is predominantly magnesium bicarbonate with traces of calcium, sodium, and chloride bicarbonate.

PristineHydro™ clients can be assured that they will always receive water that is:

100% Chemical & Contaminate Free  
High Alkaline pH  
Super-Oxygenated  
Antioxidant  
Properly Mineralized

Magnesium bicarbonate: A complex hydrated salt only found in liquid form; it is naturally present in pristine drinking water and it is not found in any foods. Prior to the industrial revolution, when food was also more pristine, there were 84 organic plant-based minerals in
the foods we ate and bicarbonate salts in the water we drank. It is impossible to get magnesium bicarbonate through eating food.

There are over ten types of magnesium being pawned off to an uninformed public as beneficial nutritional supplements. In nature we never came in contact with magnesium chloride, sulfate, citrate, aspartate, oxide, carbonate, glutamate, threonate, amino acid chelate, orotate, lactate, glycinate, malate, taurate, etc. So why would you want to ingest a compound that does not occur in nature?

Magnesium hydroxide is not easily absorbed in the body unless first attached to a bicarbonate ion and in its natural transporting medium, water. A Taiwanese study showed high levels of Mg H₂CO₃ in their city’s drinking water were linked to reduced risk of several cancers, including ovarian cancer (43% risk reduction of ovarian cancer mortality).

Magnesium researchers have long maintained that magnesium’s efficacy can only be fully realized when the body is adequately hydrated. Water is at its densest at 4°C Celsius. Water has an asymmetric bond, and between 4° to 12° Celsius the hydrogen bonds tighten up to conserve energy...this lowers the surface tension of the water to the optimal level for hydration.

Warm water has a high surface tension because the hydrogen bonds are wide open! The molecules of warm water bind together and are very difficult to separate. The only way to lower surface tension to the optimal level is to chill it down to 4° to 12° Celsius. Water with a high surface tension irrigates the body; water with a low surface tension hydrates the body.

The importance of low surface tension properly mineralized water in the body cannot be understated with respect to pH balance adjustment, removal of toxic elements from the body, and full utilization of minerals in ATP energy production.

With insufficient cellular hydration, there is only a limited amount of magnesium bicarbonate uptake and utilization achievable, which is insufficient to quench the body’s needs unless more and more amounts of water are taken in.

Like water, the human body does not store magnesium, thus magnesium bicarbonate must be taken daily. The body has an undying need for magnesium as well as water; when magnesium is present in water, life and health are enhanced.

Drinking acid-free high-alkaline magnesium bicarbonate water:

- Increases digestion and absorption of nutrients, increasing energy levels
- Increases elimination of toxins and wastes (detoxification)
- Reduces the oxidative stress that is a major cause of free radicals
- Reduces inflammation
- Raises alkalinity
- Can improve skin conditions

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- Increases CO₂ and bicarbonate concentrations in the blood.
- Increases Oxygen Carrying Capacity and Delivery

Magnesium deficiency has been known to trigger, cause or worsen the following (not a complete list): Anxiety and Panic Attacks, Asthma, Blood Clots, Bowel Disease, Cystitis, Depression, Detoxification, Diabetes, Syndrome X, and Metabolic Syndrome Fatigue, Heart Disease, Hypertension, Hypoglycemia, Insomnia, Cancer, Kidney Disease, Liver Disease, Migraine, Musculoskeletal Conditions, Nerve Problems, Premenstrual Syndrome, Dysmenorrhea (cramping pain during menses), Infertility, Premature Contractions, Preeclampsia, Eclampsia in Pregnancy, while adequate levels of magnesium have been said to reduce the risk of Cerebral Palsy, Sudden Infant Death Syndrome (SIDS), Osteoporosis, Raynaud’s Syndrome, and Tooth decay.

PristineHydro™ acid-free high-alkaline magnesium bicarbonate water can boost your body’s energy, boost your immune system, and get you the hydration you need on a cellular level.

**ElectrolyteBalance™ Facts**

- ElectrolyteBalance™ is predominately magnesium bicarbonate, with traces of calcium, sodium, and potassium bicarbonate. This unique formula is achieved through a proprietary technology that re-creates the optimum circumstances that nature uses to properly prepare bio-available bicarbonate salts.
- ElectrolyteBalance™ is a natural way to help neutralize acids and help balance the pH of the body.
- ElectrolyteBalance™ effectively replenishes magnesium bicarbonate reserves; it also facilitates the voltage-gated calcium, sodium, and potassium bicarbonate ion channels.
- Magnesium bicarbonate helps protect cells from heavy metal poisoning, such as aluminum, mercury, lead, cadmium, fluoride, etc., and may help with insomnia, headaches, and inflammation. Up to 90% of Americans have a severe magnesium deficiency, which is akin to diabetes, and has been found to be at the root of many cardiovascular problems. Sufficient magnesium reserves may help increase memory, focus, and deep relaxation.

**USAGE:** One to two ounces before bedtime. Throughout the day, add one or two teaspoons of ElectrolyteBalance™ per 12 ounces of PristineHydro Water. This will effectively replenish magnesium bicarbonate reserves and increase the buffering capacity of the water you drink.