



**Magnetic Technologies L.L.C**

# Water



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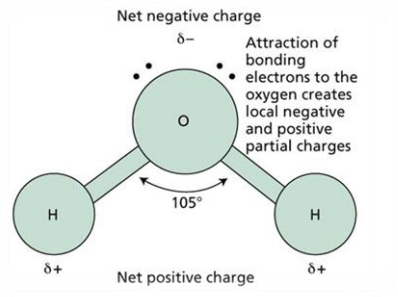
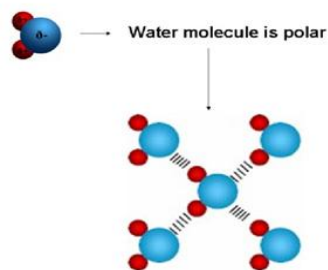
**[ MAGNETIC TECHNOLOGIES L.L.C ]**

## 1. Why Magnetic Technologies (Devices) are neither energy dependent nor chemical dependent?

ANS: Since magnetic technologies are designed and manufactured on the principle of having magnetic field. Permanent magnets are used in the devices. Magnetic field of these magnets affects substances and chemicals in one or the other way. Under the influence of magnetic field, force (Lorentz force) is produced which acts on the molecules of the substance or chemical which is going to be passed or flow through the device. The force increases the thermal energy of the bonds between the molecules which resulted in the breaking of larger clusters or molecules into small clusters or molecules. As a result of this phenomenon, the substance or chemical is structured and can act in a better way. So, to create magnetic field, no energy is required.

## 2. How the properties of water are changed?

ANS: Water is a dipolar molecule. It can form bonds with itself and other molecules. These bonds are known as Hydrogen Bonds. Magnetic treatment changes the physical properties of water. Since water is diamagnetic, it should not be affected by a magnetic field. The thermal motion of the partially charged atoms in the water gives rise to a Lorentz force when a magnetic field is applied.



In physics, the **Lorentz force** is the force on a point charge due to electromagnetic fields. It is given by the following equation in terms of the electric and magnetic fields:

$$\mathbf{F} = q(\mathbf{E} + \mathbf{v} \times \mathbf{B}),$$

Where

**F** is the force (in Newton)

**E** is the electric field (in volts per meter)

**B** is the magnetic field (in teslas)

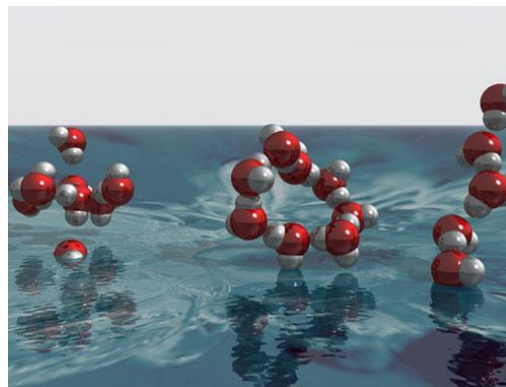
**q** is the electric charge of the particle (in coulombs)

**v** is the instantaneous velocity of the particle (in meters per second)

**×** is the vector cross product

By suppressing the thermal motion, the Lorentz force makes the hydrogen bonds stronger, which could account for the increase in the melting point, lowers surface tension and viscosity and increases solubility of water.

Three models for the structure of water molecules. Each individual H<sub>2</sub>O molecule is linked to four of its neighbors in many current models of the liquid (depicted on left). New results suggest most water molecules are linked strongly to only two others, however. This implies that liquid water molecules may be arranged in rings (middle) or chains (right) that are clustered together by additional, weaker hydrogen bonds. The oxygen atoms are shown in red and the hydrogen atoms in gray in these H<sub>2</sub>O molecules.



### 3. Which properties of water are changed after magnetic treatment?

Following are the properties of water which are changed after magnetic treatment:

Parameter (Process)	Measuring Method	Range of Changing, %
Ion hydration	Proton-magnetic resonance	30-36↑
Magnetic susceptibility	Measuring of traveling of liquid column in magnetic field (Kwinke's method)	200-450
Electric conductivity	Phase-metric and dielectric	7-26↑
Viscosity	Viscosity-meter	3-4↓
Kinetics of chemical reactions	Photometric, H <sub>2</sub> O <sub>2</sub> decomposition	30-200↑
Surface tension	Measuring of maximal pressure in bubbles	10-13↓
Solution	Phasometric	20-70↑
Crystallization	Crystal-optical	30-250
Polymerization	Gas chromatography, nuclear- magnetic resonance, infra red spectroscopy	15-20↑
Coagulation	Vaksmudsky's method, ultrasonic method	20-90
Moistening	Measuring of hysteresis edge angles	10-15
Evaporation velocity	Measuring of water volume and mass	10-40↑
Specific heat	Calorimetry	3-8↓
Corrosion (velocity)	Method of electric-kinetic potential	20-210↓
Ion exchange	Method of limited volume with potential-metric control	26-35↑

#### 4. What is a magnetized substance?

A substance is magnetized when its constituent molecules or structural elements can be permanently aligned in a define direction by the influence of an external magnetic field.

#### 5. What are the characteristics of magnetized water?

- It has higher solubility for minerals.
- It is structured water.
- It structures both the acidic ions ( $\text{Na}^{+1}$ ,  $\text{Ca}^{+2}$ ,  $\text{Mg}^{+2}$ ,  $\text{Al}^{+3}$ ,  $\text{H}_3\text{O}^{+1}$ ,  $\text{OH}^{-1}$ ,  $\text{F}^{-1}$ ) and alkaline ions ( $\text{K}^{+1}$ ,  $\text{NH}_4^{+1}$ ,  $\text{Rb}^{+1}$ ,  $\text{Co}^{+1}$ ,  $\text{Br}^{-1}$ ,  $\text{I}^{-1}$ ,  $\text{NO}_3^{-1}$ ,  $\text{BrO}_3^{-1}$ ,  $\text{IO}_3^{-1}$ ,  $\text{ClO}_4^{-1}$ ).
- It has a decreased solubility for dissolved gases ( $\text{Cl}_2$ ,  $\text{N}_2$ , etc.). It helps in degasation on commercial scale.
- Only effective hardness is claimed to be altered: no solutes (such as calcium and magnesium) are removed from water by the treatment.

#### 6. What is Hard Water?

Hard water is the water containing salts of Calcium, Magnesium. It is of two types i.e. Temporary and permanent hard water. Temporary hard water is that water containing calcium and magnesium carbonates and bicarbonates while permanent hard water is that water containing calcium and magnesium chlorides.

#### 7. What is Soft Water?

Water that has a very low calcium and magnesium content (water hardness) - usually means less than 100 ppm or 6 grains. Soft water is treated water in which the only cation (positively charged ion) is sodium.

#### 8. What is Distilled Water?

Water that has been treated to remove all impurities such as solid materials, inorganic, and organic materials, is known as Distilled water. The process of distillation produces alkaline and oxidized water with no minerals. Having no mineral content results in very high ohmic resistance and when we calculate the microwatts, the energy factor of the water, we find that it is extremely low. This results in loss of energy from the body. Distilled water also loses the ability to turn polarized light and therefore is biologically dead water.

#### 9. What is biologically Active/Compatible Water (Good water)?

The water having following characteristics is known as biologically active water:

- pH: 6.5-6.8 (slightly acidic)
- High Oxygen contents

## **10. What is chlorinated/Ozone-Treated Water?**

Water having following characteristics is known as chlorinated/Ozone-treated water:

- Alkaline
- More oxidized
- Containing to many minerals
- Creates mutant strains of a commonly non-pathogenic bacterium called E-coli resulting in an antibiotic resistant pathogen.

According to National Sanitation Foundation International (NSF), non-profit body, chlorine in our treated water transforms to Tri Halo Methane (THMs) when it is exposed to sun during its journey to our tap. THMs have been documented to be carcinogenic. Water memory store this energy even after filtration and if not removed has implications to our health.

THMs are just one of many disinfection byproducts. Due to the carcinogenic potential of these compounds, federal regulations in the United States of America require regular monitoring of the concentration of these compounds in the distribution systems of municipal water systems.

## **11. Water is Diamagnetic molecule. How it can be affected by Magnetic Field?**

Although water is diamagnetic molecule yet it is affected by magnetic field because of the dipole moment created by the difference of electronegativity between oxygen and hydrogen atoms.

## **12. What is Pure Water?**

Purified water is water from any source that is physically processed to remove impurities. Distilled water and deionized water have been the most common forms of purified water, but water can also be purified by other processes including reverse osmosis, carbon filtration, micro-porous filtration, ultra-filtration, ultraviolet oxidation, or electro-dialysis.

## **13. Is pure water suitable for health or not?**

The drinking of purified water has been both advocated and discouraged for health reasons. Purified water lacks minerals and ions, such as calcium, which are normally found in potable (drinking) water, and which have important biological functions such as in nervous system, homeostasis. Some percentage of our daily consumption of these minerals and ions come from our drinking water, but most of them come from the food we eat. The lack of naturally-occurring minerals in distilled water has raised some concerns.

The World Health Organization investigated the health effects of demineralized water (purified water) in 1980, and its experiments in humans found that demineralized water increased diuresis and the elimination of electrolytes, with decreased serum potassium concentration.

Magnesium, calcium, fluoride, and other nutrients in water can help to protect against nutritional deficiency. Demineralized water may also increase the risk from toxic metals because it more readily absorbs them, and because the presence of calcium and magnesium in water can prevent absorption of lead and cadmium.

#### **14. Which properties of water make it unique from other solvents?**

- Water is called the "universal solvent" because it dissolves more substances than any other liquid. This means that wherever water goes, either through the ground or through our bodies, it takes along valuable chemicals, minerals, and nutrients.
- Pure water has a neutral pH of 7, which is neither acidic nor basic.
- Water is unique in that it is the only natural substance that is found in all three states -- liquid, solid (ice), and gas (steam) -- at the temperatures normally found on Earth. Earth's water is constantly interacting, changing, and in movement.
- Water freezes at 32° Fahrenheit (F) and boils at 212° F (at sea level, but 186.4° at 14,000 feet). In fact, water's freezing and boiling points are the baseline with which temperature is measured: 0° on the Celsius scale is water's freezing point, and 100° is water's boiling point.
- Water is unusual in that the solid form, ice, is less dense than the liquid form, which is why ice floats.
- Water has a high specific heat index. This means that water can absorb a lot of heat before it begins to get hot. This is why water is valuable to industries and in your car's radiator as a coolant. The high specific heat index of water also helps regulate the rate at which air changes temperature, which is why the temperature change between seasons is gradual rather than sudden, especially near the oceans.
- Water has a very high surface tension. In other words, water is sticky and elastic, and tends to clump together in drops rather than spread out in a thin film. Surface tension is responsible for capillary action, which allows water (and its dissolved substances) to move through the roots of plants and through the tiny blood vessels in our bodies.

#### **15. What is Memory Effect of Water?**

Water memory is an assumption that water is capable of retaining a "memory" of substances once dissolved in it to arbitrary dilution. Shaking the water at each stage of a serial dilution is claimed to be necessary for an effect to occur. The concept was proposed by Jacques Benveniste to explain the purported curative powers of homeopathic remedies, which are prepared by diluting solutions to such a high degree that not even a single molecule of the original substance remains in each final preparation. Benveniste sought to prove this basic tenet of homeopathy by conducting an experiment to be published "independently of homeopathic interests" in a major journal.

Water combines with almost everything it comes in contact with. Consequently, there is not such a thing as "pure" water in nature as it gets 'imprinted' even on its brief contact moments with air or any other substances. These 'imprints' are residual vibrations from these substances that it has contacted with. Water is especially beneficial to us when it absorbs vibrations from sunlight. The vibration caused by sunlight causes a hyperstate of the water molecules allowing them to absorb energized oxygen, CO2 and warmth. Hence, ...

**...water is important in providing us this hidden natural source of energy creating the energy balance we need for good health.**

Nevertheless, through the vibrational 'water memory effect', information of a contaminant, including information of polarity is retained in the water molecule. These harmful frequencies from water's exposure to chemicals or heavy metals are left to linger in water memory long after its contact with those harmful substances, even if such substances have been removed from the water through distillation, reverse osmosis, filtering etc. If this harmful vibrational energy is constantly exposed to us, water loses its potential as one of our most powerful natural cures!

#### **16. What are the effects of drinking and using magnetic water on beauty, skin and hair?**

- MAG Device protects from wrinkles and skin Diseases
- MAG Device makes skin glow
- MAG Device protects against Falling Hair

#### **17. What is effect of drinking magnetic water on Health?**

Drinking magnetic water Address the Most Common Health Problems:

- Heart problems
- Blood Pressure
- Anemia
- Uric Acid
- Cholesterol level
- Acidity
- Kidney problems
- Constipation
- Piles

#### **18. Does Magnetic System for Home help to save something?**

##### **Municipal Water:**

- MAG Device improves water taste
- MAG Device converts municipal water into biologically active water for Drinking and Cooking.
- MAG Device removes all diluted gases and chlorine from water.

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**Water**

**Gas Savings:**

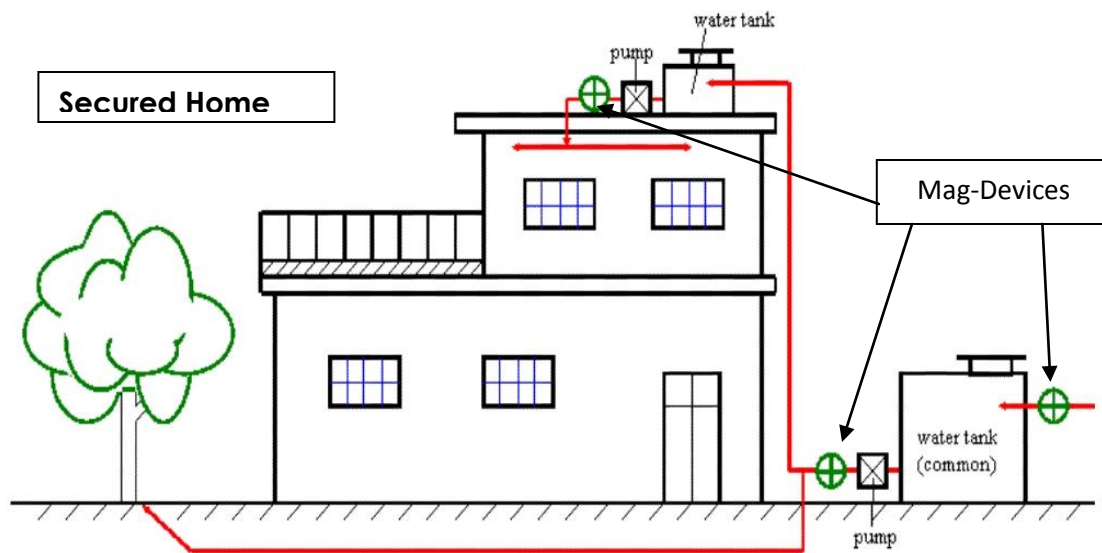
- MAG Device reduces boiling time of water resulting in saving of gas in Geysers.
- MAG Device reduces cooking time resulting in saving of gas in kitchens.

**Electricity Savings:**

- MAG Device converts the water into lighter water, so less time is required to fill the over-head tank, resulting in saving of electricity.
- Mag Device saves electricity while washing clothes by increasing the ability of water to removes stains.

**Bathrooms:**

- MAG Device removes bad smell/odor from bathrooms.
- MAG Device prevents scaling in pipes and keeps them clean.
- MAG Device saves over 50% washing powder/soap.



**19. In a nutshell, what is so special about drinking and using magnetic water?**

The magnetic treatment of water allows large amounts of oxygen to be dissolved and stabilized in water. In addition, the process purifies water from chemicals and gases and final result is exceptionally smooth tasting water.

**20. How pure is the magnetic water?**

Magnetic treatment of water not only removes chlorine from the municipal/tap water but also removes all the harmful dissolved gases and chemicals from the water. It adds oxygen to the water by producing hydroxyl ions which are very important for living cells. Magnetic water is structured water addressing all the requirements of body.



## **21. Does Magnetic water contain chemicals?**

No, magnetic water does not contain any chemicals. It removes all the chemicals and gases from the water.

## **22. Why is oxygen so important for us?**

Oxygen is important for living things because it is taken in by them during respiration process to continue the metabolic process in them. Metabolic processes consist of both constructive and destructive process. Oxygen is used in oxidation process to produce energy from the food. Generally, some of the direct benefits of increased oxygen intake by our body are increased energy level, alertness, strengthened immune system and removal of toxins and poisons from the body.

## **23. What are the effects of lack of oxygen intake?**

Lack of oxygen plays a major role in causing cells to become cancerous-as quoted by Dr. Harry Goldblatt in the Journal of Experimental Medicine. Oxygen deficiency makes the environment anaerobic which is not good for living things. The decrease in the oxygen content from 40%-19% results in inefficient metabolic activities in the humans, plants and animals. To compensate for this deficit, we must maximize the body's ability to use the available oxygen and provide as much air as possible to the body. Using antioxidants such as vitamin C and E and taking regular deep breathing exercise are beginning steps. Magnetic technologies make the gradually becoming anaerobic environment into aerobic environment.

## **24. How is oxygen assimilated in the body?**

Oxygen is assimilated in body by complexion with Hemoglobin in the blood. When blood circulates in the body it carries oxygen to all the parts of the body. The binding ability of oxygen with Hemoglobin and circulation of blood depends on availability of oxygen and quantity of water. Magnetic treatment of water reduces the surface tension of the water which helps to transfer or detach oxygen more easily form water to blood stream to nourish the organs and cells and to oxidize toxic wastes.

## **25. Does magnetic water look any different?**

Yes, magnetic water unlike tap water and other bottled waters in which you may see floating dissolved solids appear strikingly crystal clear.

## **26. How long would the oxygen remain in Magnetic water?**

The magnetic water has the ability to retain its properties changed after magnetic treatment for 48 hours. This is the enough time to utilize the magnetic water.

**27. What is the marketing advantage of magnetic device for water?**

The marketing advantages are obvious. Magnetic device converts municipal water into biologically active water which addresses number of diseases, takes care of your beauty, skin and hair and also saves electricity and gas.

**28. Is it true that magnetic water is a lifeline?**

Yes, magnetic water is a lifeline for living things. Its structured alignment, its less surface tension, enrich oxygen content make it biologically active for living things.

**30. Is it true that pure water when passing through our body system, removes inorganic minerals?**

According to Dr. Allen E. Banik in his book, “The Choice is Clear”, pure water when entering the body, picks up inorganic mineral deposits accumulated in our joints, artery walls, or wherever such deposits occur and carries them out of our system. Conversely, he says that unpurified water containing dissolved inorganic minerals when entering our body accumulates such inorganic minerals in our joints, artery walls and other vital parts of our body. He went to say that water attracts chiefly inorganic minerals and such minerals cannot be assimilated in our tissues.

**31. What is the relation between the dissolved oxygen of water and health of humans, animals and plants?**

Oxygen is a gaseous element. It is tasteless and colourless gas. It makes approximately 90% of water, two-thirds of human body and about 20% of air by volume. The most common reaction of oxygen which occurs when it unites with other substances is called oxidation. We know no life can exist without oxidation. Oxidation is a chemical reaction. It is the process in the body which converts sugar into energy and helps rid the body of wastes. The body uses oxidation as its first line of defense against pathogens.

In recent years, ecologists, environmentalists, health advocates and the media constantly has brought our attention to some phase of deteriorated status of oxygen in our world. Oxygen is the source of life and energy to all cells. Oxygen starvation or deficiency is probably the greatest cause of degenerative diseases. Medical scientists have been voicing this fact for decades.

The use of oxygen therapy in the late 1920's and early 1930's was largely ignored. Drugs became the way to treat the sick. Although drugs give relieve to the body to heal itself, yet all drugs have side effects. Oxygen treatment in the right concentration and amount has no negative side effects. It actually enhances the healing process. It improves and restores the

immune system and may be the most significant single factor in the prevention of illness. Oxygen is necessary for every cell, every tissue, and every function, both chemical and physical of the body. The bloodstream transport oxygen throughout the body to all cells.

Oxygen helps to promote the growth of aerobic bacteria and diminishes the growth of anaerobic bacteria. Aerobic bacteria are the friendly, helpful ones in the body, water, soil and air. Aerobic bacteria are normal flora of the body. They thrive on oxygen and promote good health and well-being. They cannot live without oxygen. However, anaerobic bacteria promote infection and diseases. They live and thrive when there is a lack of oxygen.

Another helpful benefit of oxygen is that it is a powerful antioxidant. In our bodies, there is unstable oxygen carrying free radicals. They help the body to get rid of toxins in our bodies, but too much free radical can cause cancer and diseases. Free radicals essentially have one less electron than normal oxygen atoms and as such, they neutralize toxins by stealing electrons from the toxins. Thus, with one less electron, the toxins are neutralized. However, the problem with free radicals is that it steals electron from any type of cell, whether they are good or bad. The end result is that free radicals sometime damage and ravage healthy parts of our bodies.

The solution to this problem of abundant free radicals is antioxidants and one of the best antioxidant is oxygen in magnetic water. When we drink magnetic water, the oxygen becomes an antioxidant and helps to neutralize free radicals. Cancer is the result of anaerobic environment. The conclusion is that the neutralization of free radicals ultimately promotes a healthy, disease and cancer free lifestyle.

### **32. What is the use of magnetic water in construction?**

- Durability, smooth, convert into good looking colour and shape
- Cement saving can be from 9 up to 12% without any strength loss
- Average increase of concrete strength is 10-25%
- Life of concrete produced with magnetic technology is 4-5 times longer as compared to life of usual concrete production technology
- Resistance power in every storm
- Increase cement products strength and increase life of constructions
- Sharp temperature deviations
- Frost and high temperatures
- High humidity
- Salt and acid media (sea shore construction)

### **33. Why does the water heater have to be cleared of deposits?**

All water heaters create scale deposits. This scale forms in the bottom of the heater directly under the flame. This requires that the flame heats the scale and the scale then heats the

water. As scale is an insulator this wastes a large amount of energy. Eventually this scale will cause the steel at the bottom of the tank to fail and require the replacement of the water heater.

The magnetic water will dissolve this scale and it will sit at the bottom of the heater. Draining a few gallons from the bottom of the heater once a month for 90 days will remove the deposits. This will extend the life of the water heater and require less energy for operation. A 40% savings is not unusual for a 3-year-old heater.

### **34: How will Mag-Device help my low water pressure?**

Many homes, apartment buildings, and businesses experience low water pressure due to an accumulation of hard mineral deposits that have built up inside the plumbing over many years. This can eventually require the expensive replacement of the plumbing system.

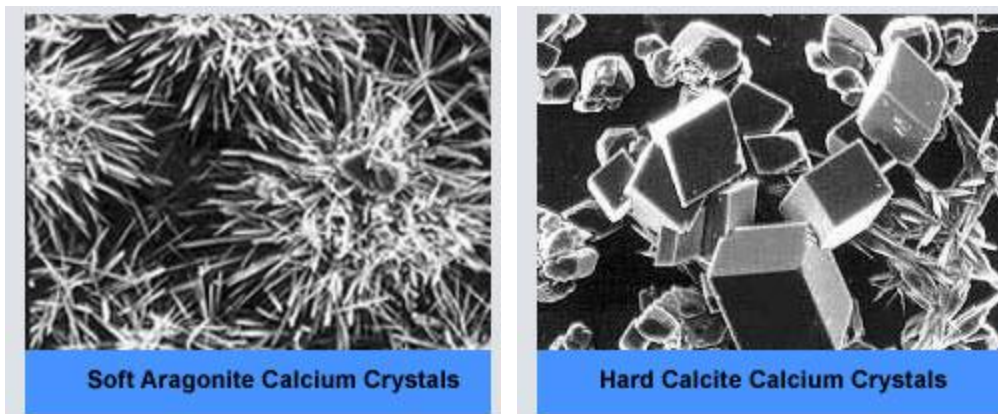
The treated water from the Mag-Device will dissolve these hard deposits over the first 90 days that it is in service and greatly improve the flow of water through the pipes.

### **35. How does Hard water affects Gas Heaters?**

Calcium forms scale in every water heater. It forms at the bottom of a water heater or boiler near the flame. The flame no longer can directly heat the water in the tank. It heats the calcium deposit at the bottom of the tank first. The heated calcium then heats the water. Studies of water heaters indicate that ¼ inch of scale can increase fuel consumption by as much as 40%. In cases where the scale builds up to 1 inch, a 95% reduction in heat transfer results.

### **36. What is Physical Water Chemistry?**

Water transformed by magnetic treatment is a better solvent, due to the increased space created between molecular structures. The treated water has a reduced surface tension, is "wetter" and an improved solvent. The increased solubility gives the treated water the ability to dissolve existing hard calcite deposits in the system and prevent them from reforming.



The physical changes created by the **Mag-Device** affect a permanent change to all process applications that use water at high pressures and temperatures up to 700 degrees Fahrenheit. The changes in crystallization of calcium from the **magnetic** treatment form a stable suspension of smaller (2-4-Micron) particles and prevent their return to calcite at temperatures lower than 700 degrees. The hard calcite form is no longer precipitated from the water. A softer aragonite form will precipitate in its place. The aragonite form is not "sticky" and will flush from the system without the use of chemicals.

#### **Process Valves & Sensors:**

Temperature sensors with calcium deposits are prone to malfunction. The sensor is thermally insulated from the water, masking the actual water temperature. This causes the control system to demand more heat from the element. Many sensors have a heating element included with a sensor. Calcium deposits will cause these elements and the heating elements they control to fail quickly. The **magnetic** treatment breaks down the calcium deposits on these sensors increasing their reliability and life span.

#### **1.4: Why Should You Measure the TDS Level in Your Water?**

The EPA Secondary Regulations advise a Maximum Contamination Level (MCL) of 500mg/liter (500 parts per million (ppm)) for TDS. Numerous water supplies exceed this level. When TDS levels exceed 1000mg/L it is generally considered unfit for human consumption. A high level of TDS is an indicator of potential concerns, and warrants further investigation. Most often, high levels of TDS are caused by the presence of potassium, chlorides and sodium. These ions have little or no short-term effects, but toxic ions (lead arsenic, cadmium, nitrate and others) may also be dissolved in the water.

Even the best water purification systems on the market require monitoring for TDS to ensure the filters and/or membranes are effectively removing unwanted particles and bacteria from your water. The following are reasons why it is helpful to constantly test for TDS:

#### **Taste/Health:**

High TDS results in undesirable taste which could be salty, bitter, or metallic. It could also indicate the presence of toxic minerals. The EPA's recommended maximum level of TDS in water is 500mg/L (500ppm).

#### **Filter performance:**

Test your water to make sure the reverse osmosis or other type of water filter or water purification system has a high rejection rate and knows when to change your filter (or membrane) cartridges.

**Hardness**

High TDS indicates Hard water, which causes scale buildup in pipes and valves, inhibiting performance.

**Aquariums/Aquaculture:**

A constant level of minerals is necessary for aquatic life. The water in an aquarium or tank should have the same levels of TDS and pH as the fish and reef's original habitat.

**Hydroponics:**

TDS is the best measurement of the nutrient concentration in a hydroponic solution.

**Pools and spas:**

TDS levels must be monitored to prevent maintenance problems.

**Commercial/Industrial:**

High TDS levels could impede the functions of certain applications, such as boilers and cooling towers, food and water production and more.

**Colloidal silver water:**

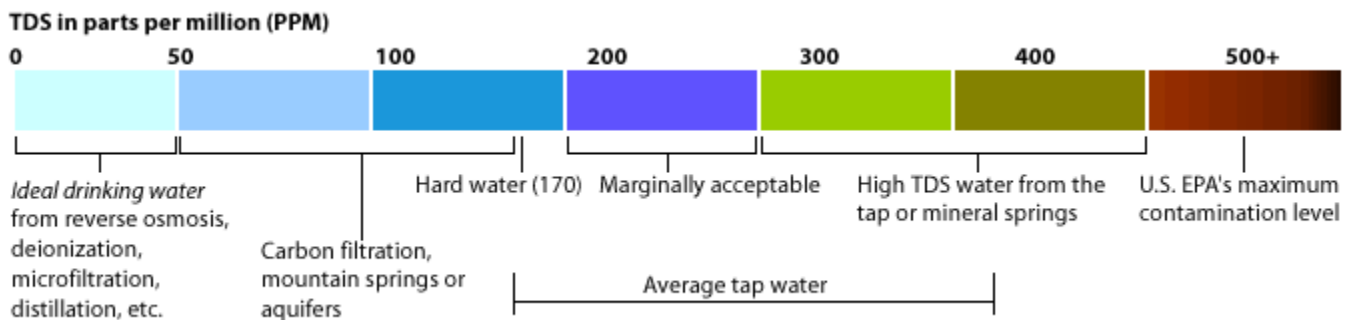
TDS levels must be controlled prior to making colloidal silver.

**Coffee and Food Service:**

For a truly great cup of coffee, proper TDS levels must be maintained.

**Car and window washing:**

Have a washer with a spotless rinse? An inline dual TDS monitor will tell you when to change the filter cartridge or RO membrane.



*\*Chart values represent national U.S. averages. Actual TDS levels for geographic regions within the U.S. and other countries may vary.*



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