

## What Hydrogation does to the minerals in the water.

Uniquely, Hydrogation only changes the minerals so that they are not problematic: on Hydrogation works on all minerals. The following is one example with calcium carbonate.

Calcite



Chemical Formula:  $\text{CaCO}_3$   
Molecular Weight: 100.09g  
Calcium: 40.04%Ca  
Carbon: 12.00%C  
Oxygen: 47.96%O

Aragonite



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Molecular Weight: 100.09g  
Calcium: 40.04%Ca  
Carbon: 12.00%C  
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### Hydrogation converts Calcite to Aragonite:

Calcium Carbonate ( $\text{CaCO}_3$ ) is the main cause of scale problems and costs homeowners and industry billions of dollars each year.

**Calcium and magnesium** as well as other minerals, tend to precipitate out and stick (adhere) in all piping supplies, faucets, fixtures, water heaters, ice machines, irrigation systems and wherever hard water touches a surface.

In this example, we are identifying calcium carbonates. Oftentimes calcium is more notable in its ability to form unwanted scale. Calcium carbonate appears in two forms (two physical states of being).

Classified as Calcite ( $\text{CaCO}_3$ ) and Aragonite ( $\text{CaCO}_3$ ). Although they share identical chemical compositions, they have completely different crystalline structures.

Calcite precipitates to form hard-to-remove whitish scale. Aragonite precipitates at a higher temperature, is much softer and more easily removed. Often times using Hydrogation, zero scale is ever even noted.

Calcite and Aragonite. Each one of them reacts differently to the surfaces that they come into contact with.

Which one would you prefer?

- Calcite that sticks and adheres, forming scale and mineral deposits?
- Aragonite that does not stick or adhere to surfaces? ...just staying in solution and continues in liquid form to wherever the water goes.

Calcite is problematic for any use of water when Aragonite is not problematic.

Using Hydrogation, the Calcium Carbonate will still be in the water, however it will pass through your piping without building up and causing unwanted problems while traveling to its destination, down the drain or away from your property.

When Calcium Carbonate in the Aragonite form lands on a surface the majority tends to bead off (like a waxed car). Most will just run off. However, if any remains, it can be easily wiped off with just a finger or perhaps a moist cloth without having to use chemical cleaners.

## **Calcite to Aragonite for Agriculture and Irrigation**

We've already spoken about the excess calcium that builds up on faucets, fixtures and piping.

Now we will talk about what the excess calcium, or any other mineral, does for the irrigation of plant material.

In this case, excess calcium cannot be digested (assimilated) by the plants, therefore being Calcium deficient or other mineral deficiencies.

The same as if a person drinks too much Calcium Carbonate in their water. Not being assimilable (digestible), that excess generates low Calcium nutrition in their body. Soluble Calcium is what is needed.

Calcium provides nutrition for plants HOWEVER an excess of Calcite is not soluble. Therefore, the plant cannot digest it, resulting in a plant with Calcium deficiency.

Even with excessive amounts of Calcium that has been changed to Aragonite, it is soluble and provides nutrition for the plant.

Hydrogation changes all minerals to be soluble, or nutritional. In many cases, Hydrogation reduces, if not eliminates the need to buy soluble fertilizers. Soluble Calcium is fertilizer.

Hydrogation works on all minerals, not just Calcium.

Hydrogation has been proven with soil & leaf sampling to provide optimum nutritional value (mineral content) in all crops.

Even with crops that are NOT salt tolerant, using water treated with Hydrogation with an excess of minerals or salty water, the evidence is both with our clients and the laboratory.

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*Foliar and leaf reports (available on request).*

*For more knowledge about what Aragonite (Soluble Calcium) does for you, Google "Aragonite, food for plants."*