

Chemist on the Loose!- What you need to know about Water

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There is a reason that the first thing astronomers and NASA look for is water. Without water there really would be little chemistry and no biology. It is also the most important ingredient in car cleaning as well. Quality water creates superior products, cleaning results and an overall better car washing experience.

At Park N Shine, we purify our water using a Reverse Osmosis system for all of our wash processes. Purified water allows us to consistently wash your vehicle without leaving water spotting.

Unpurified water from your tap contains many minerals (called hard water) that can make water less efficient for cleaning. Water quality varies depending upon the time of year and region you reside. Hard water, calcium and magnesium ions will deactivate many detergents and surfactants used in detailing and more specifically vehicle washing. Hard water creates serious water spotting issues on paint. Creating a nightmare and a big challenge in paint correction. Hard water directly effects the performance of car wash soap. If you have ever wondered why your soap does not foam or perform it is most likely directly related to your water quality.

How the calcium and magnesium are removed can make a difference for you as a detailer or business owner. There are four main ways to remove ions from water:

1 - Distillation - essentially boiling the water into a gas and then condensing it back to liquid. All the solid ions stay behind in the original container and only water and volatiles get recovered as liquid.

2 - Reverse Osmosis - water is pushed through a very, very fine membrane. The ions remain on the outside of the membrane and only ions that are small enough can get through. Most ions get filtered out and result in purified water.

3 - Deionization - water is sent through a bottle with resin that attracts and holds all the ions. The pure water passes through and is collected on the other side of the bottle.

4 - Water Softening - In water softening the calcium and magnesium ions get replaced with sodium ions in the water softening equipment. Sodium ions do not affect the efficiency of surfactants and

detergents. However since there are ions left in the water, they can still cause spotting and need to be removed from the surface prior to drying to avoid spotting.

There are performance, cost and maintenance advantages to each method. 1) Distillation is impractical and costly. 2) Reverse osmosis has a relatively high up front costs, wastes some water and is not as high a purity as DI. But, it costs less to maintain and the water is fine for detailing. 3) Deionization is a fairly easy set up and results in the highest purity but is much more expensive to run. In areas with very hard water, DI alone is completely cost prohibitive but can be combined with an initial RO process to get both cost efficiency and very high quality water. 4) Water Softening is commonly used in households and car washes to make products effective but because ions are left in the water we still experience water spotting issues. The ideal methods used for auto detailing are RO (Reverse Osmosis) or DI (Deionization).

The benefit of using completely pure water is that it allows detergents to perform at their optimum level and can dry on the surface of a car repeatedly and never leave a water spot. So what does all this mean to you? Bottom line, untreated hard water is less effective and can cost more time or money to clean the car, regardless of the chemicals you use. At Park n Shine, we have invested in water treatment processes, so you don't have to worry about hard water spots