

One of the interesting things that happens when salt is added to the pool water is that the water



becomes better able to conduct electricity. It's kind of like putting a fine "chemical wire mesh" in the water. Stray electrical currents "flow" through the water attacking metal surfaces and finishes, including stainless steel.

Stainless steel ladders and rails lose their "shine" and get this patchy black or gray look. Aluminum ladder or slide anchor sockets corrode completely. Pitting of aluminum coping on inground vinyl pools.

Concrete deck finishes pit & become grainy. Excess salt clinging to pool bio-films on the pool's surfaces will cause staining & scaling of the waterline that will be difficult to remove.

ANY and EVERY salt/chlorine system that is installed needs a good quality sacrificial anode (or multiple) of some kind within the pool operating system. Additional anodes can be used on lights, inside skimmer baskets, and on railings. These zinc anodes will take the brunt of the electrolysis rather than the pool and equipment. Replace anodes yearly or as soon as they are depleted.

Common Sense Prevention Care & Maintenance Tips:

1. Maintain good water balance. pH 7.4 - 7.6; Total Alkalinity 100 - 140 ppm; Calcium Hardness 175 - 250 ppm. Test the water at least once per week.
2. Keep a close watch on the mineral or salt content. Better to maintain a "lower" level than over dosing. Check your individual owner's manual for exact levels.
3. Add regular doses of Stain & Scale prevention products such as Jack's Magic Purple Stuff or Mineral Springs Stain & Scale Control or Pristiva Primer. These will prevent scale & staining of pool surfaces and equipment.
4. Augment and buffer the water with BioGuard Optimizer Plus. Optimizer Plus will work as an algistat further preventing algae growth.
5. Use AquaFinesse Pool Water Care Pucks to remove and control bio-film growth on pool plumbing lines, the cell generator, and all pool surfaces. Bio-film growth is the "primer" stage that leads to scaling.
6. Regularly test and recalibrate your equipment (monthly).
7. Chemically clean the ECG to remove excessive scale build-ups.
8. Use anti-electrolysis zinc anodes & devices. These will counteract the harmful effects of stray electrical current in the pool body.

Salt-Chlorine & Your Swimming Pool.

What you should know.



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Now you can practically manufacture your own chlorine in your own pool. Sounds great doesn't it? Phenomenal money saver, right? Well,...



Let's look at this in a holistic or complete way, especially in light of the tremendous press that salt or saline-chlorine generation has been getting.

The idea is, take common salt in the form of Sodium Chloride (NaCl) & break it into its elemental components. In layman's terms we have water (H₂O) + salt (NaCl) passing through an electrolytic cell (sometimes called a turbo cell or ECG - electronic or electrolytic chlorine generator) which has specially coated plates and an electrical current running in them.

The positively or negatively charged current breaks the molecular bonds into Hypo-chlorous acid (HCl) and sodium and oxygen (specifically NaOH). Hypochlorous acid is what we're looking for as our sanitizer. Sounds pretty simple and chemically speaking, it is (by the way, that's a picture of a chlorine molecule above).

There's a bit more to this chemistry. That ECG is also "creating" other compounds as the water, with various dissolved minerals such as calcium, phosphorous, sulfur, passes by. Salt-chlorine generation causes 3 main issues that the pool owner needs to be aware of:

Difficult to manage pH levels(high pH).

High pH is always a problem with saline pools. The method of generation continually pushes or forces the pH up. If you live in an area where the pH of the source or tap water is low or lower, such as in various parts of the Northeast US, that "problem" can actually help your overall water balance. As long as you are regularly monitoring the pH and making adjustments as necessary, you should be in good shape.

Other parts of the country aren't so lucky. Areas of "hard water" such as in Arizona or Florida will

constantly battle high pH. There are cities & towns where the pH out of the tap is in excess of 8.0. Acid will need to be added on an ongoing basis to maintain a "stable" pH level of 7.4 - 7.6. These areas also have higher concentrations of dissolved heavy metals such as iron, copper and manganese which can lead to staining.

The other high pH pool issue is associated with virtually any concrete, tile or aggregate finished pool. When new, these finishes will continually force the pH level high. And when the plaster finish is brand new, it's not unusual to see pH levels in excess of 10.0 or higher.

IMPORTANT: newly plastered pools should NEVER add salt to the pool until 30 days after being filled to allow the curing process to begin. Neglecting this delay will cause abnormal staining or mottling of the pool's finish and surface (which MAY not be able to be treated).

Scaling of pool surfaces & equipment.

Scaling of pool surfaces, especially at the waterline, heater interior, filter media and most importantly, the ECG itself. Scaling of pool surfaces provides additional nooks and crannies for algae and bacteria to grow. Plus it's not easy to clean or remove.

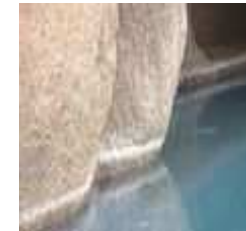
Heater scaling dramatically reduces heater efficiency thereby driving up your pool heating costs. When a filter is scaled, it also loses efficiency and is a royal pain to clean.

More importantly, we are concerned about scaling of the chlorine generator itself. That cell is one of the most toxic places on planet earth. On one side of the cell plates, the pH is close to ZERO! On the other side, the pH is at the opposite end of the scale, about 14. Scaling is bound to happen. "But I have a self-cleaning generator," you say. Not really; although the polarity reverses, the scale will still build up.

There are 3 kinds of scale that will form reducing chlorine generating efficiency: phosphate scale (almost invisible, leaves a dull patina on the cell plates, usually

not noticeable), calcium scale (a heavy to heavier white scale), and sulfate scale (gray scale that's VERY difficult to remove).

Where do these scales come from? Phosphate scale is from phosphates. Phosphates come from certain pool chemicals (ironically anti-scaling & anti metal-staining chemicals) and environmental sources such as dead skin cells or "fly over" bird waste (even more concentrated with highly touted "Solar Salt"). Calcium is dissolved in water everywhere! Heck, our bones are largely calcium. If you have a plaster or gunite pool, calcium is in the plaster and grout. Sulfur? From sulfates. Certain pool pH reducing chemicals (granular pH decriaser) contain sodium bi-sulfate.



Scaling builds up faster due to existing bio-films found throughout the entire pool system.

Better quality pool salt contains less contaminants, including heavy metals as mentioned

above and more "pure" salt. Even some of the pool salt "additives" contain "high" concentrations of phosphates and sulfates to control staining, scaling and pH (such as BioGuard Mineral Springs, Capo Salt Saver, and other products).

Bottom line, don't simply trust "how good" the water looks or feels; keep a close eye on pool water & mineral balance. And take extra care with acid washing the cell; you will strip the protective coating from the cells in a very short time. With many ECG costing several hundreds of dollars, shortened life due to premature scaling needs to be avoided.

Electrolytic corrosion & staining is difficult to describe as well as prevent, but the effects are soon noticed by every pool owner over time. Think of what happens when you put salt on an icy surface in winter: the ice melts because of the lowering of the water's freezing point, but over time you notice that the surface pits & crumbles.