

## Chlorine Generators or Salt Systems

We get many questions about salt-water pools, chlorine free pools or any other number of questions regarding chlorine generators, which is the correct definition of what many people are asking about. Chlorine Generators have been around for more than 25 years and are not a **NEW** idea in swimming sanitation. In fact they have come and gone several times in various designs. The process of making the chlorine with these systems is the same it is just the electronics and construction materials that has gotten significantly better over the years. Advanced microprocessors and electronics, better more resistant plastics and precious metals used in the cells have contributed to the advancement of this technology.

Ocean water has a salt content of around 35,000 parts per million. Most humans have a taste threshold of around 3500 parts per million. This is about the solution of saline or thereabout. Most chlorine generators use a salt content of 3000 ppm - 4500 ppm. You want a unit that needs less than 3500 ppm to operate effectively.

A chlorine generator's main function is to produce chlorine at the pool so you do not have to go buy it, store it or handle it. These are big advantages for many pool owners. Chlorine generators, when functioning correctly produce chlorine constantly (when the pump is running). This keeps a residual of chlorine in the pool that prevents algae from growing. The secret is keeping the cell free of calcium and mineral deposits so it can continue to make chlorine. The cell itself is made up of precious metals with each manufacturer using what they believe is the best technology and manufacturing methods. In the 21st century most of these units will be similar in quality and performance. The chlorine generators are like an "IV" to the pool.

Through the process of electrolysis, water passing over the chlorine generator cell produces chlorine that is instantaneously transformed into Hypochlorous Acid. When any type of chlorine is added to water it ALL makes the SAME thing, Hypochlorous acid! That's right it's ALL the same, it does not matter if it is Sodium Hypochlorite (liquid chlorine), Tri-chlor and Di-chlor or Lithium based, Cal-hypo or even gas chlorine it all makes the same thing, Hypochlorous Acid. Sure they affect the water chemistry differently and some add to TDS or increase calcium levels, the point is this; Hypochlorous Acid is the active sanitizer, this is what kills algae and other harmful stuff in the water. Its effectiveness is totally predicated on balanced water conditions and more importantly proper pH. So, with a salt water system or chlorine generator or whatever you want to call it you still must maintain your water balance (pool chemistry) properly. As long as you understand this and do this the chlorine generator will perform as is was designed.

Some manufactures make non-reverse polarity units and reverse polarity units. A reverse polarity unit reverses the electron flow through the cell causing mineral deposits to flake off. Minerals are attracted to these cells because of the molecular flow of electricity at the level of atoms (it's low voltage at the cell). The premise here is that these cells do not require cleaning AS MUCH! I have yet to see one that does not have to be cleaned at all. The mineral deposits are now big enough to actually get caught in the filtration system. This is the reasoning behind the claim that chlorine generators can reduce the scum line build up at the waterline. I think it is worth the premium you pay for the reverse polarity type. It is usually nominal. Some sales people, if they sell a non-reverse polarity system only will make the argument that by cleaning the cell manually you are getting rid of the scale and minerals immediately (when you manually clean the cell). This is a reasonable argument. Both units require this anyway the reverse polarity unit requires it less.

The bottom line for chlorine generators, They can be more convenient because you do not need to handle or buy chlorine and if the unit is functioning correctly a chlorine residual will always be present in the pool eliminating algae. You still must maintain your pool. You still must maintain correct water balance. None of this changes! I feel that the BEST pool will have 24/7 circulation, correct hydraulic design with an automatic Electric cleaner , a quality Ozone system and a an automatic chlorinator for sanitizer residual. This is the recipe for a low maintenance pool.

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