Salt Systems and Electrolysis

An inline zinc anode—anodes are a must for salt pools!

The chemistry involved in chlorine generating systems (salt water pools)

In a salt-water pool salt is dissolved in the water as it passes through the plates of the chlorine generator. The sat is broken down in order to be used to sanitize the pool. When the solution passes through the cell, the chlorine is negatively charged and the Na is positively charged. Then the Cl attracts itself to another Cl forming Cl2 (this is basically chlorine).

The Cl2 cleans the pool – and it is very erratic. It breaks apart into two separate chlorine parts; that is what eliminates contaminants. The chlorine then tries to find the stable Na ion and reconnects to reform NaCl.

Benefits of salt water pools

The biggest benefit of having a salt water pool versus a traditional chlorine pool is pool owners will no longer need to buy, store, or handle chlorine. The salt system generates its own chlorine (that’s why it’s called a chlorine generator). This can save time, hassle, and money.

What is electrolysis and why is it important?

Although there are many benefits to salt water pools there are also some potential problems pool owners should be aware of. Salt water conducts electricity due to the electrolysis process. Anytime you have different metals in a salt water pool, you essentially create a battery. Some amount of current flows between the metals. Don’t worry: the levels of electricity present are perfectly safe to swim in and will be

undetected by swimmers. However, for the metals in your pool, it’s a different story. The electrons that make up the current are supplied by the metals in your swimming pool, starting with the weakest metal, which is forced to give up bits of itself in the form of metal ions into the pool water. This process is called galvanic corrosion, and it causes plaster discoloration and metal erosion. This type of corrosion can damage ladders, lights, and pool equipment—we’ve seen some pretty sad heater cores as a result. An electrical charge through the water pulls whatever is in the water out of solution, so electrolysis can also cause calcium to come out of solution and cause scaling on pool walls.

With a salt water pool you absolutely need a zinc anode! A zinc anode is a crucial part of any salt pool. The best option is one that gets plumbed into your equipment—this type of anode will best protect your pool and equipment from the negative effects of electrolysis. Another option, less expensive but less effective, is a disc-shaped zinc anode that sits in your skimmer basket. Zinc anodes are also called sacrificial anodes, because they corrode instead of the other metals in your pool. Zinc is a weak metal, so the anode sacrifices itself to galvanic corrosion so the other metals in your pool and equipment don’t have to. It also helps to prevent calcium scaling. **This is an absolute must for a salt water pool!**