

Salt Chlorinators

Salt chlorinating systems use the basic principles of electrolysis to produce an active Chlorine disinfectant and therefore purchase of Chlorine may no longer be required. They comprise a cell which is fitted in the pipe work in the plant room, usually after the pool heater on the flow back to the pool. It is controlled by an electronic box on an adjacent wall and powered by an electrical supply from the pool controls.

The pool water is dosed with salt, usually to a level of about 3,000 mg/l or PPM. This is considered to be about 1/10 that of sea water and produces a faint saline taste in the mouth, compatible with that of the tear drop.

The saline solution passes through the cell and at the same time a very small current is passed between the electrode plates in the cell. This is the basic principle of electrolysis.

The result is that the saline solution containing salt (Sodium Chloride) and water (H₂O) is changed (electrolysed) into Sodium Hypochlorite which is the active Chlorine disinfectant used extensively in swimming pools. The salt in the water masks the Chlorine and produces a very nice swimming medium.

The amount of Chlorine produced will depend on:

- The setting on the controls which basically, manages the current being passed
- The length of time the water is flowing through the cell
- The length of time the cell is turned on and as the production of chlorine does not stop some systems incorporate a time switch the system on and off during the filtration period.

Some systems also incorporate a means of increasing the output of Chlorine by increasing the current in order to deal with increased bathing or pollution.



There is with all electrolysis, a tendency for a deposit to form on one of the electrodes. In swimming pools this is calcium scale. Most manufacturers incorporate a reversing device in the control box so the current flows one way for a short time and then is reversed to flow the other way after a set period. This encourages the scale to fall off.

As the surface area of the electrode plates also affect the amount of current passing it is necessary that they should be as free as possible from scale. This is also assisted by keeping the water balance, especially the pH, Calcium Hardness and Total Alkalinity within the accepted bounds and therefore the correct testing kit and adjustment chemicals must always be available.

Occasionally, it may be necessary to clean the cell manually, which should only be done by an experienced pool engineer.

It has been found that, in some pools, the salinity of the water, required to facilitate this electrolysis process, has been incompatible with some metallic materials contained in items of equipment, within the whole pool system generally. In order to obviate any possible incompatibility, installers of salt chlorinators must check with the manufacturers of all the equipment within the pool system, that their products will not be affected by the level of salt required for that chlorinator.

It should also be noted that the addition of salt to the pool water increases its conductivity and consequently when being installed on older pools a thorough check of the electrical installation, particularly earth bonding, is advised.

