



FACT SHEET 14

SALT CHLORINATORS

People assume swimming in a salt chlorinated pool must be like swimming in the sea, but it's quite different.

Salt chlorination uses an electrolysis process to produce chlorine from common salt (sodium chloride), which is added to the pool water in a measured amount. The chlorine gas produced by this process is soluble in water, dissolving instantly to form hypochlorous acid—the sanitiser used to sterilise the pool water. A salt chlorinator consists of two major components: the cell and the power supply.

THE CELL

The cell is the component that pool water passes through. A very low voltage electric current is applied to electrodes inside the cell, causing the electrolysis process to take place. The electrodes are usually made from titanium with exotic metal coatings applied to the surface. Various sizes are available to suit pool size and chlorine demand.

THE POWER SUPPLY

Most power supplies come with a number of options, such as chlorine output control, time clock and salt level indicators. The power supply must be matched to the correct size cell.

SELECTING A SUITABLE UNIT

A number of factors come into play in determining the right salt chlorinator for your needs, and the size of your pool and/or spa is not the only factor. Larger pools do need larger chlorinators, but the bathing load also has an impact—high use consumes more chlorine.

The size of the filtration system is also a factor. Poor water flow will require longer running time. In summer, high water temperatures and strong sunlight create an increase in chlorine demand.

HOW MUCH SALT?

The amount of salt needed varies depending on the type of chlorinator. Most models require only weak salt solutions of 0.3–0.7% (3000–7000 ppm) to effectively chlorinate a pool.

These levels are between one-fifth to one-tenth that of salt in seawater. Strictly follow the manufacturer's recommendations to avoid damage to the chlorinator and to ensure adequate chlorine production. Salt is not consumed in the electrolytic process, but will need to be topped up after any water loss from filter backwashing, splash out or overflow due to rainfall.

MAINTENANCE

There are maintenance free cells available. Other cells will require periodic cleaning to remove the calcium deposits that build up on the electrodes during electrolysis. Again, strictly follow the manufacturer's instructions to avoid damage to the assembly.

OTHER CHEMICALS

Salt chlorinated pools need to achieve the same chemical balance as traditionally chlorinated pools. Total alkalinity, pH, calcium hardness and chlorine levels should be checked regularly. Chlorine stabiliser (isocyanuric acid) should be added to the pool and maintained at approximately 30–50 ppm to reduce chlorine loss due to ultraviolet rays.

During periods of high pool use, it may be necessary to manually supplement with sodium hypochlorite (liquid chlorine) to maintain correct chlorine levels, and regular superchlorination or shock dosing should be carried out. As with all chemical issues, check with your local SPASA SA member for expert advice.