

## FACT SHEET 16

### OZONATORS & IONISERS

Sky-blue gas? Heavy metal? There's more than one way to sanitise a pool or spa.

Ozone is a sky-blue gas formed naturally by the action of the sun's ultraviolet rays or when a large electrical discharge, like lightening, passes through oxygen. It is a relatively unstable, highly toxic gas which decomposes to re-form oxygen, and is very effective against bacteria.

#### TASTELESS AND ODOURLESS OZONE

Used for many years in the USA and Europe, ozone is the standard purifier in both water-bottling plants and pools, and is approved by the Olympic Federation.

One of the most effective disinfectants and oxidisers, ozone starts killing bacteria and oxidising organic waste as soon as it is injected into the circulation stream.

#### TOXIC TO MORE THAN BACTERIA

All traces of ozone must be consumed or removed before it reaches the pool, so small amounts of residual sanitiser, such as chlorine or bromine, must be used to provide continuous protection in the pool.

If using ozone with chlorine, follow the manufacturer's recommendations on maintaining pH. If using it with bromine, the oxidising power of ozone will regenerate the inactive bromine, reducing the consumption of bromine product.

Due to its instability, ozone remains in the water for only a short time and has no effect on pH or water balance. Nor does it contribute to total dissolved solids. It can even reduce the need for shock dosing.

#### OZONE GENERATORS

Recent developments in technology have enabled manufacturers to produce smaller, more economical ozone generators that are suited to domestic pools and spas. These units generate ozone gas in two ways: by passing air over an ultraviolet light source or through a Corona discharge chamber.

The gas concentration produced in both systems can vary, so follow the manufacturer's recommendations and select the unit most suited to your pool and/or spa.

#### IONISING SILVER AND COPPER

The Ancient Greeks found that water kept in silver containers mysteriously purified, and algae didn't grow in copper water pots. In the late 19th century, water was passed through various porous materials impregnated with silver, creating positive ions and purifying it.

#### ELECTRIC HEAVY METAL

Today, an ion-generating device can be installed in a pool and/or spa's circulation system. It's made up of an electrode assembly (copper and silver), and the electronic control unit that supplies an electric current to the electrodes. Electrolysis then passes either silver or copper ions into the water, with the silver disinfecting and the copper preventing algae growth.

#### PURIFICATION AND BALANCE

Electrolysis of metals does purify, but it does not chemically balance the water. (See Fact Sheet 12: Water Balance to correctly balance the water). Silver and copper residual levels can be measured, but most manufacturers recommend maintaining a chlorine disinfectant residual as well.

The metal ions kill algae and bacteria, but they do not oxidise organic waste. It is therefore necessary to 'shock treat' or 'super chlorinate' the pool to oxidise any build up of organic waste and maintain disinfecting action.

Note: Dissolved metals may stain a pool or spa or discolour the water. Always keep the copper and silver residual levels within the manufacturers' recommendations.