

## WHAT IS OZONE?

Ozone is a sky-blue gas and is formed naturally by the action of the sun's UV (ultraviolet) rays splitting an oxygen molecule ( $O_2$ ) and one individual oxygen atom attaching itself to another oxygen molecule. This is ozone and is expressed as  $O_3$ . It can also be formed when a large electrical discharge passes through oxygen. (eg. lightning). It is a relatively unstable, highly toxic gas which decomposes to re-form oxygen and is a very effective bactericide.

## OZONE GENERATORS

Ozone generators produce the gas by one of two methods; Ultra Violet Light or Corona Discharge.

- **Ultraviolet light (UV)**

Generation of ozone using UV is achieved by passing air over a UV light source and then mixing the gas with water.

- **Corona discharge**

In this method, air is passed through an electrically charged chamber. What could be called a miniature lightning storm is created in the chamber which electrically converts the oxygen into ozone.

**Note:** The concentration of gas produced in both types of systems can vary and care should be taken when selecting a unit to be sure that ozone output is appropriate for your pool or spa.

## IS OZONE TREATMENT NEW?

No. Ozone treatment has been used for many years, particularly in Europe, for the treatment of municipal water supplies and also large commercial and Olympic pools. Developments in ozone technology over recent years has enabled manufacturers to produce smaller more economical generators, much more suitable for domestic pools and spas.

## EFFECTIVENESS

Ozone is one of the most effective disinfectants and oxidisers available and once introduced into the water it starts to work immediately, killing bacteria and oxidising organic waste. As ozone is not highly soluble in water, the ozone must be injected into the water by either a compressor or venturi system.

However, as ozone is also toxic, all traces must be used or removed prior to reaching the pool. As there can be no residual of ozone, some other form of residual sanitiser like chlorine or bromine must also be used in

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order to provide continuous protection when the ozone generator is turned off.

Naturally, using ozone as the primary oxidiser, means a much smaller amount of chemicals will be needed to sanitise the pool and provide the necessary residual.

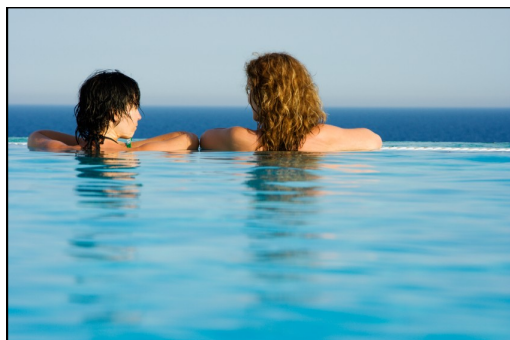
## HOW DOES IT EFFECT OTHER CHEMICAL LEVELS?

When using an ozonator in pools and spas treated with chlorine, always follow the manufacturers recommendations on maintaining pH.

In pools treated with ozone and bromine, the oxidising power of ozone will regenerate the inactive bromine, reducing the consumption of bromine product.

Ozone remains in the water for only a short time and therefore has no effect on pH or water balance, nor does it contribute to Total Dissolved Solids.

The use of a correctly sized and operated ozone generator with a pool disinfecting chemical (eg. chlorine), will keep a pool clean and reduce the need for shock dosing.



For more information on sanitising and maintenance of your pool or spa see the following;

- Fact Sheet No 1. Water Balance
- Fact Sheet No 4. Sanitising The Pool
- Fact Sheet No 9. Ionisers
- Fact Sheet No 10. Spa Pool Maintenance