

BACKGROUND

The use of copper and silver ions for purifying water has been practised for centuries. The ancient Greeks found that water kept in silver containers was mysteriously purified and that algae didn't grow in copper water pots.

Extensive research into the action of metals in the purification of water was not undertaken until the late 19th Century. This research resulted in the development of the 'Katadyne' water treatment process. This required that water be passed through various porous materials impregnated with silver. Some of the metal would become ionised and pass into the water as positive ions. As a result the water was purified.

It was discovered that over time 'Katadyne' porous filters became less effective and were difficult to clean. This resulted in the introduction of the 'Electro-Katadyne' process which involved an electric current being passed between silver coated sand beds and resulted in a better level of control over the ionising process.

The modern ioniser uses the same basic principle as the 'Electro-Katadyne' process except that the sand beds have been replaced with copper / silver electrodes and the ionisation control is accomplished with modern electronics.

IONISATION

The modern ioniser consists of two parts; the electrode assembly consisting of two (or multiples of two) bars of metal usually made

of an alloy of copper and silver and the electronic control unit. The electrodes are usually installed in the pool's recirculation system. The control unit supplies the necessary extra low voltage across the electrodes. The resultant current produces positively charged ions of the constituent metals which are carried into the pool and become part of the chemistry of the pool water.

Silver ions act as a disinfectant and copper ions act as an algicide. Although these ions kill algae and bacteria and provide a measurable residual, they do require an oxidiser to be present for the oxidation of organic wastes. Most manufacturers recommend the use of chlorine. But non-chlorine systems are also available.

RESIDUAL MAINTENANCE AND WATER BALANCE

Follow the manufacturer's instructions to prevent the possibility of discolouration of the pool surface. Maintain the pH and the copper residual within the manufacturer's recommended levels. Consult with the manufacturer to check if the equipment is suitable for the desired application.

The ionisation of copper / silver alloy is a means of purifying pool / spa water, not chemically balancing it. Therefore normal procedures should be adopted to correctly balance the water.

See SPASA Fact Sheet No 1.

WATER BALANCE