



SALTY SOLUTION

SALT NEVER TASTED SO SWEET

Australians have taken the sting out of the pool swimming experience by using a high-tech solution.

Australians love the sun and surf. Being on and in the water is second nature, from toddlers on surfboards to a plethora of world champion swimmers. When they aren't in the ocean, they are in their pools. Just as central to family and community life as the barbie (barbecue), the pool is where Australians gather. It's no surprise then, that they are also the world leaders in making the pool swimming experience even better through clever innovation.

Their biggest water quality innovation often surprises visitors to Australia when they see the great swimming nation has 'saltwater pools'. Especially if located close to the ocean, tourists could be forgiven for thinking that saltwater-chlorinated pools would taste like salty seawater. But in fact, Australia is a world leader in a water purification method that uses a far more human-friendly and environmentally friendly form of cleaning water - using salt to create chlorination.

THERE IS A BETTER WAY

Chlorine is the bane and boon of swimmers everywhere in the world. The smell of chlorine assures one that, assuming proper management, their environment is going to be clean, no matter how many people have been in the water. But the stinging of the eyes and the deadening of hair and skin caused by chlorine is detested. Frequent and competitive swimmers who use public pools endlessly discuss what products to use to avoid straw-like hair and how to get the persistent stink out, even after showering.

The answer, surprisingly, is salt. While it is true that salt (NaCl) is the simple combination of sodium and chloride ions, its composition and how it is deployed can make a huge difference in, for example, how it impacts taste and cooking. But for those wise in the ways of salt, this simple chemical has a wide array of uses.

Cheetham Salt, headquartered in Melbourne, knows its salt - it's been

producing it, with the help of sun, sea and wind-driven evaporation, since 1888. Cheetham Salt joined the CK Life Sciences Int'l., (Holdings) Inc. family of companies in 2013 and provides salt for a range of uses, from consumer products for the kitchen to industrial and pharmaceutical production.

But it is salt used to chlorinate backyard swimming pools where the distinctly Australian flavour comes in. Or rather, it doesn't. The secret of salt-chlorinated pools is that you can't taste the salt.

NOTHING FISHY ABOUT SALTWATER POOLS

Again, tourists invited to a private swimming pool billed as saltwater chlorinated may be disappointed not to see toothy fish or even toothier saltwater crocs. But those immersed in a salt-chlorinated pool first notice what they don't taste or smell - chlorine and salt. The level of salt is only 3,000 parts per million, well below the normal ocean salinity of 35,000 parts per million and even below the human tasting threshold of 3,500 parts per million.

Almost 75 per cent of Australian households with private backyard pools have installed salt-chlorination systems.

The lack of taste is a distinguishing feature of saltwater-chlorinated pools.

It's there - you just can't taste it. Swimmers also say they avoid the irritation associated with traditional liquid chlorination. The word most commonly used is the 'softer' feel of the water - an absence of harsh chemical contents affecting their hair and skin.

This technology is popular with Australians, with almost 75 per cent of Australian households with private backyard pools having installed salt-chlorination systems, with market share growing at a rate of about 10 per cent a year.

Regarding cost, the normal payback period for the cost of installing and maintaining a saltwater-chlorination system is about 10 years. The initial salt-chlorination hardware can cost up to AUD1,000, and chlorinator cells need to be replaced around every five years, costing AUD400 each. However, over a 10-year period, the total cost of a saltwater system compared to using liquid or granular chlorine is approximately the same, due to the higher cost of liquid chlorine and the higher volume of chlorine required to maintain pool cleanliness.

This doesn't include the value inherent in a more pleasant bathing experience for pool-mad Aussies who spend countless hours in their backyard pools. Regular

swimmers change their conversation from hair remediation to more weighty subjects, such as how to best cook their snags (sausages) and prawns on the barbie.

SALTY SECRETS

All this begs the question: How does it work? Doesn't the 'Cl' in NaCl mean chlorine? And why call it 'salt chlorination' if no liquid chlorine is used?

The secret lies in the fact that chlorine, used to kill bacteria and viruses, is still the means of disinfection. It's how it is delivered into the water, and in what concentrations, that makes all the difference.

Salt-chlorination systems use a salt-chlorine generator to free the chlorine ions from NaCl at an effective, moderated and even concentration over a longer period of time. This contrasts sharply with manually adding high doses of liquid or granular chlorine to pool water. Rather than dumping a high concentration of chlorine into the pool, the salt-chlorination system continually adds a moderate amount of chlorine over time.

A 25kg bag or two of Cheetham Pool Salt, which is simply NaCl, is poured into the pool water and quickly dissolves. As discussed, as the concentration in parts per million is very low, swimmers do not even taste or notice the salt. The pool water is then slowly pumped through to the heart of the salt-chlorination system - the chlorine generator. This is a simple set of electrolysis metal plates that carry a low-voltage current. When salt-infused water passes over the plates, electrolysis occurs and this splits the salt (NaCl) and combines it with water (H₂O) to produce small amounts of hypochlorous acid (HClO). Whenever chlorine is added



to water in liquid or granular form, or through salt chlorination, it's this same hypochlorous acid that kills the things we don't want in the water.

Salt-chlorination systems smooth out the introduction of this hypochlorous acid into the pool water - and this makes all the difference to swimmers.

Cheetham Salt provides staff training for pool equipment shops and hosts *How to use Pool Salt* videos on its customer websites to ensure owners get proper instruction on how to use their salt-chlorination system. But with such widespread adoption, Australians can simply knock on their friendly neighbour's door for a little help when they get started.

People around the world with year-round pools and seasonal pools alike, may start looking Down Under for a new way to enjoy their private pools, with open eyes underwater and happy hair, and find a better way to enjoy their aquatic life. They may find that Australian saltwater-chlorinated pools don't have sharks and crocodiles, but rather a high-technology solution that will sweeten the taste of their summertime swimming experience. □

