

Stop the endless cycle of traditional chemical dosing

Today it is possible to disinfect water without the costs and hassle associated with traditional chlorine dosing, even at low TDS levels

An invaluable guide for:

- *Municipal pools and leisure centres*
- *Aquatic theme parks*
- *Competitive swimming /diving facilities*
- *Hotels, resorts and spas*
- *Properties with lagoons and water features*
- *Developers and bodies corporate*
- *Industry membership groups and associations*

www.aiswater.com.au

AIS Australian
Innovative
Systems™

A FINITE RESOURCE

A full-page background image showing a view of Earth from space. The Earth's horizon is visible, with blue oceans and white clouds. A bright light source, likely the sun, is positioned behind the horizon, creating a strong lens flare that streaks across the dark sky. The overall color palette is dominated by deep blues and bright whites.

AIS' mission is to create safe, economical and versatile products that help protect humans and habitats against waterborne pathogens and the transmission of infectious disease.

AIS' vision is to ensure that Earth's fixed supply of water remains clear and healthy - despite increases in population and economic activity.

- The amount of water on Earth has remained unchanged for millennia. There is as much of it now as when dinosaurs roamed the planet.

In the past 15 years alone however the World's population has grown by over one billion people and global economic output has more than doubled.

Earth's finite water reserves are facing increased human contact and industrial activity impacts. More germs and bacteria are entering the water which is bad for civilisation and the planet.

So what is the best way to disinfect water after we've 'borrowed' it?

Australian Innovative Systems (AIS) believes that innovation is the key and that the answer does not lie with the endless cycle of manufacturing, transporting and storing ever larger quantities of toxic chemicals such as sodium hypochlorite, calcium hypochlorite and hydrogen peroxide.

These chemicals amount to considerable expense over time and bring many Health and Safety considerations. Whilst infrequent, accidents do happen and when they do, spills and mishandling can cause serious injuries to staff and members of the public.

AIS has found a better way to disinfect water.

www.aiswater.com.au ○

A BETTER WAY

With an AIS water disinfection system you can stop the endless cycle of traditional chemical dosing by producing chlorine onsite and inline (as water flows through the system) or offline conveniently and automatically.

Water of almost any TDS (Total Dissolved Solids) level - ideally from 1,200 ppm to 35,000 ppm including groundwater, town water, salt water and even waste water - can be disinfected using AIS technology.

Each AIS high performance system - AutoChlor™, EcoLine™, MineralChlor™ and ChloroGen™ - is equipped with electrochemical cells featuring Genuine AIS Anodes™ which disinfect water using the tried and trusted method of electrolysis.

AutoChlor™

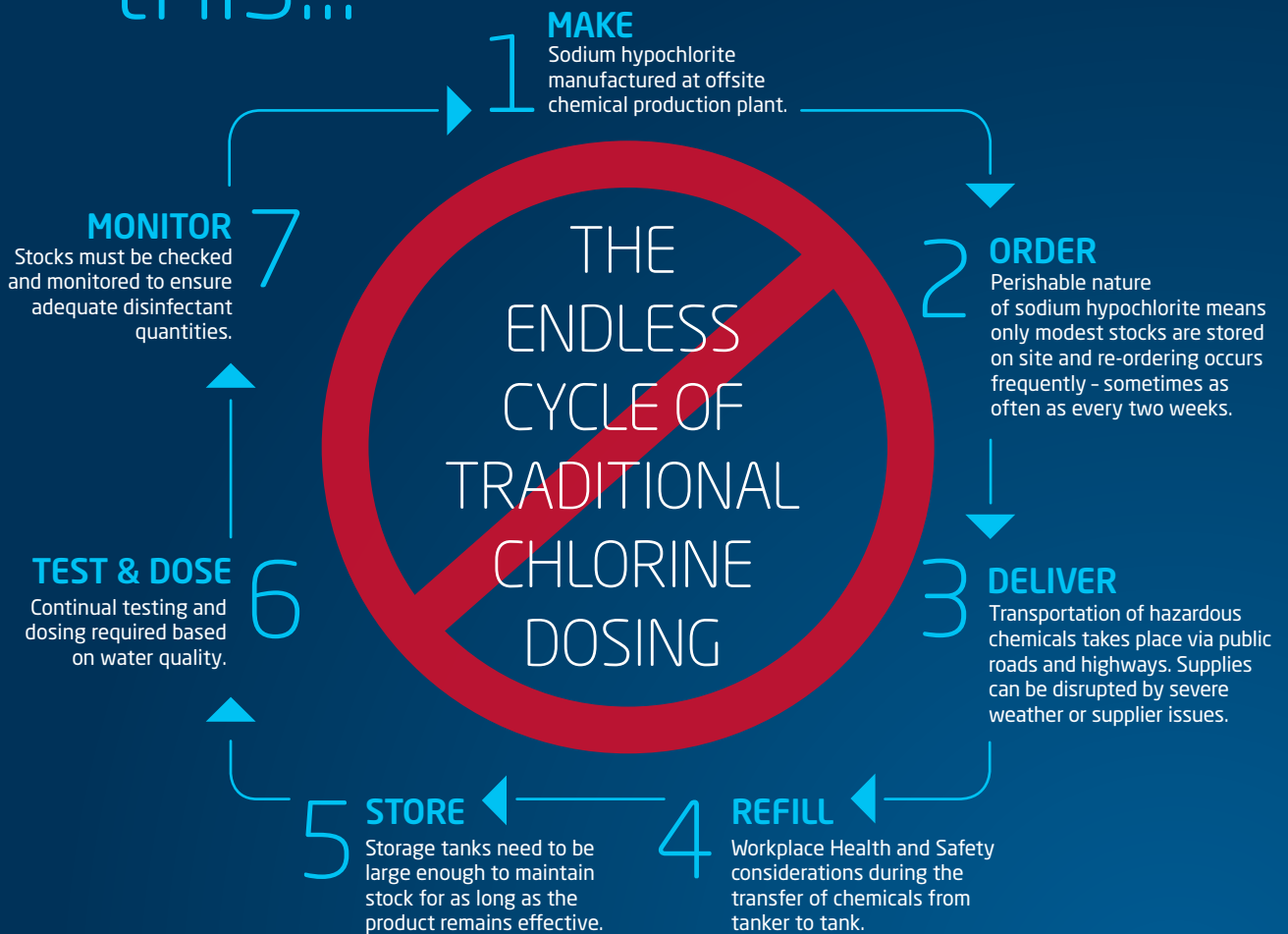
ChloroGen™

EcoLine™

MineralChlor™



All of this...



Can be replaced by
this...

AIS chlorine generators allow you to stop the endless cycle of traditional chemical dosing by producing chlorine onsite and inline, disinfecting water conveniently and automatically.



Systems for virtually any TDS Level

From large scale commercial applications to residential swimming pools, AIS has you covered.

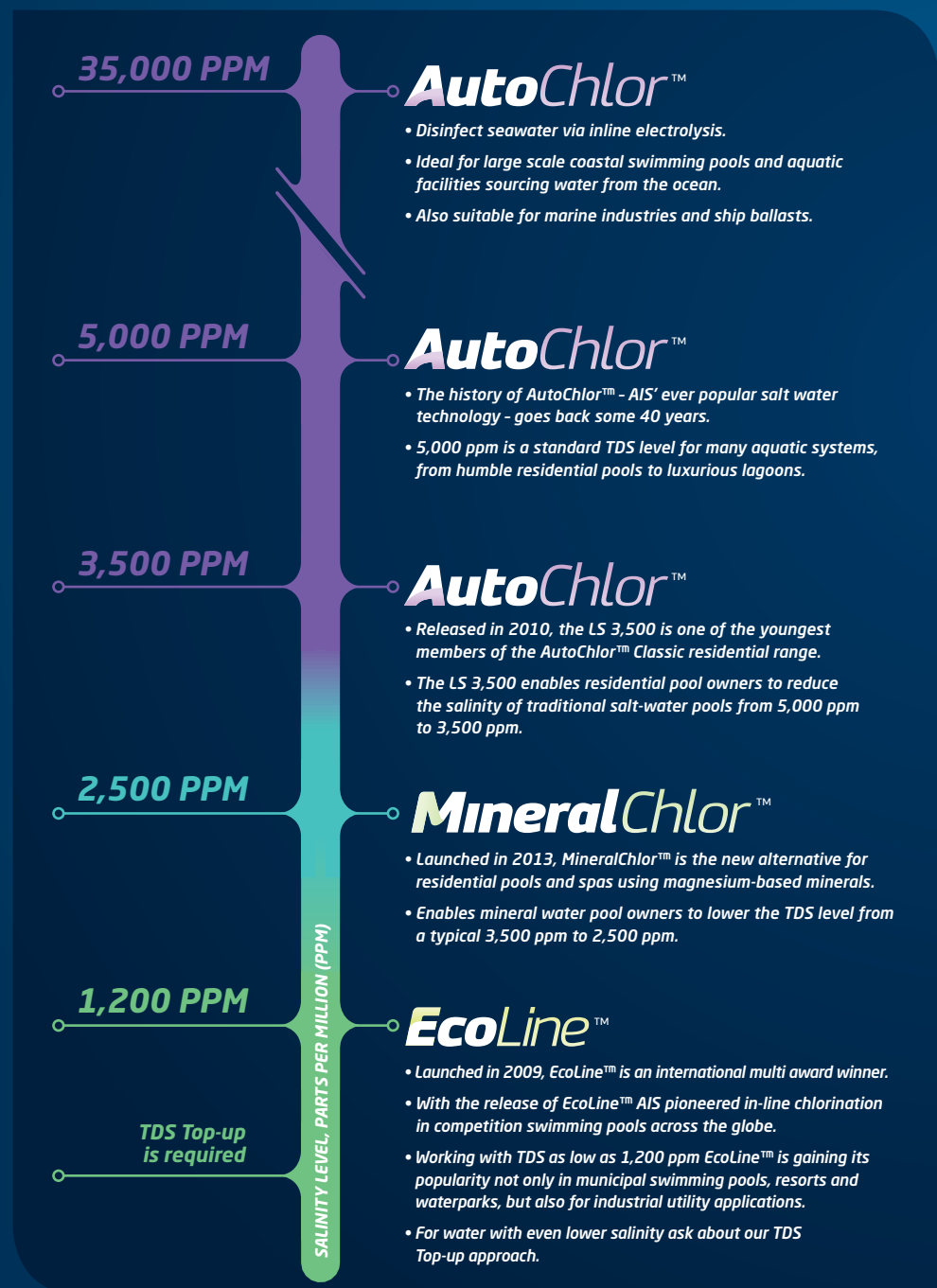
AIS offers a chlorination solution for water of virtually any TDS Level ideally ranging from 1,200ppm to 35,000ppm.

For water below 1,200ppm a simple TDS Top-Up may be all that is required to commence AIS chlorination and bid farewell to the endless cycle of traditional chemical dosing forever!

TDS TOP-UP

Today, many commercial facilities are delighted to learn that they already have surprisingly high mineral content water. Some can switch immediately to chlorination.

For others (with TDS levels in the hundreds) a simple, easy and affordable TDS Top-Up may be all that is required to achieve the desired 1,200ppm levels that AIS Technology is able to operate from.



Discover the benefits

- Stops the endless cycle of traditional chemical dosing.
- One machine, installed in the plant room and plumbed into the pipework.
- Disinfects via electrolysis as water flows through Genuine AIS Anodes.
- Reduces chloramines and improves air and water quality.
- Minimal operator attendance and maintenance.
- Workplace Health and Safety advantages.
- Chloramines oxidised on each pass through the cell; eliminates the need for frequent shock-dosing.
- Helps to stabilise TDS levels.
- Helps to reduce water consumption and water charges.
- Extensive customer support and warranty programs.
- Tried and tested technology in operation all over the world.



20+ years
of innovation
gives you
more .

All AIS commercial chlorinators feature:

REVERSE POLARITY (RP) - RP technology reverses the electrical current flowing backwards and forwards to the electrodes. As a result, instead of being either an anode or a cathode, each electrode plate takes turns at performing both roles. Constantly reversing the current descales the build-up of calcium, greatly reduces electrode cleaning and maintenance, and extends the time between maintenance checks and cleaning cycles.

SWITCH MODE POWER SUPPLY (SMPS) - Electrodes need Direct Current (DC) but mains electricity is supplied in Alternating Current (AC). Traditionally, AC was converted into DC using inefficient and expensive transformers. By introducing SMPS technology to inline chlorine generators, the AC to DC conversion is achieved at high efficiency, providing significant reductions in energy consumption.

GENUINE AIS ANODES™ - AutoChlor™ was the first commercial technology to incorporate Genuine AIS Anodes™, designed and manufactured by AIS. AIS Anodes™ are the heart of every AIS chlorine generator. The anodes have a life expectancy of 45,000 hours.

BUILT-IN ACID WASH SYSTEM - Makes maintenance and servicing effective and simple.

SEALED INTERNAL COOLING - Hot and humid air found near aquatic facilities and in pool-service rooms is kept out of AIS' sealed, internally cooled units, providing excellent protection against corrosion.

SKID MOUNTED DESIGN (Modular design is available on request) - Built to specification on site at AIS and delivered on an easy-to-install skid mounted frame.

FLOW SWITCH/PRESSURE RELIEF VALVE - Safety devices to ensure minimum water flow rate and maximum operating pressure in cell housing is not exceeded.

AIS Technology in action



Warringah Aquatic Centre bids farewell to chlorine deliveries forever with EcoLine™

Read what Warringah Aquatic Centre's General Manager, Gary Penfold has to say about AIS' EcoLine™ inline chlorinator operating in his municipal facility's indoor 50 metre swimming pool.

“Warringah Aquatic Centre has had an EcoLine™ chlorinator installed for the indoor 50 metre swimming pool facility.

Management has been very happy over the six months it has been in operation. Prior to this the facility had been using Sodium Hypochlorite.

A test environment was established as part of a risk assessment undertaken for the purchase of the product with criteria such as; consumption and cost of chemicals, Workplace Health and Safety, bather and staff comfort, TDS readings, air quality (chloramines in particular) compliance of chlorine levels and other environmental factors.

Since switching over to EcoLine™ the data has shown us that these criteria were met and the issues addressed.

There was a level of scepticism by staff when the product was first introduced. Staff have seen many different products come and go over the years, but have admitted to being very happy and pleasantly surprised not only with the operation of the EcoLine™ unit but also the low maintenance and install of the chlorinator as well. This is further enhanced by the fact that the former system can be retained as built in redundancy if anything should go wrong. Since the chlorinator produces chlorine on site at a low TDS Level, there is no longer any need for chlorine tanks, banded areas or chlorine deliveries. There has also been a reduction in the dumping of water at the Centre as the TDS levels are reducing over time - not increasing.

The chlorinator super chlorinates the water constantly so there is a reduced need to super chlorinate the water - it is done automatically. We are expecting increased savings in the replacement of plant and equipment costs, as well as the life span of the concrete at the centre.

With the reduction of chloramines in the atmosphere, the level of chloride penetration is anticipated to be reduced.

The chlorine tanks also needed replacing, and therefore we have been able to save on the cost of the replacement tanks and we can now potentially use that space for storage as the EcoLine™ unit is compact and doesn't take much room.

The air quality of the centre has been significantly improved, so it has become a much better swimming experience and work environment for our customers and staff. Staff have noticed much improved air quality in the offices and it is anticipated that equipment like computers etc. will have a longer life span.

The EcoLine™ system works in conjunction with our control system so there was no change in the overall operation of the centre. Staff time required to operate the previous system has been reduced as we no longer have Sodium Hypochlorite deliveries and many Workplace, Health and Safety hazards have been eliminated as we do not have the hazardous goods deliveries and on-site storage issues that we had before.

The centre now has six monthly maintenance program on the EcoLine™ system which is being outsourced to the installers and is a further efficiency.

In summary, now that there is site based data which demonstrates the unit has reduced the chloramines and TDS Levels, as well as the cost savings and all whilst keeping the pool compliant with health requirements, WAC Management is happy with the EcoLine™ chlorinator. ”

Gary Penfold

General Manager Warringah Aquatic Centre

EcoLine™ and AutoChlor™ in operation worldwide

**For more for customer
examples visit:**
www.aiswater.com.au

EDUCATION AND ELITE SPORT

*University of the Sunshine
Coast (USC), Australia*

EcoLine™

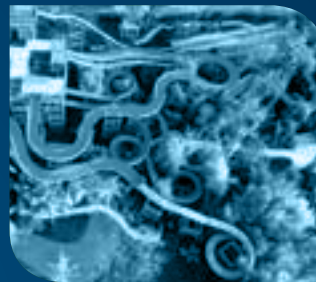


EcoLine™ has chlorinated USC's School of Health and Sport Sciences' two million litre pool since 2011. Nathan Gordon, Manager of Sport at USC, couldn't be happier. "This is an Olympic-size teaching and learning pool annexed to a High Performance Training Centre, so we have to maintain very high water quality and hygiene standards. With the EcoLine™ technology there's no need to have drums of chemicals in store, it is easy to use and utterly hassle free."

WATERPARKS

Waterbom Bali, Indonesia

**EcoLine™
AutoChlor™**



In 2013 Waterbom's largest water body switched from salt water to a TDS of 1,200 ppm by replacing its original AutoChlor™ unit (installed 2007) to new EcoLine™ technology. Waterbom's 'Funtastic' zone uses EcoLine™ too while the 'Climax' and 'Pipeline' rides share a salt water system protected by AutoChlor™. Nyoman Suteja, Waterbom's Financial Controller, says "AIS has enabled us to protect our visitors against germs and bacteria with reliable and cost efficient technology and great after sales service and support."

ICONIC REGIONAL ATTRACTIONS

*Cairns Esplanade Lagoon,
Queensland, installed by
The Pool Man, Cairns*

AutoChlor™



At 4,800 m2, Cairns' iconic Esplanade Lagoon is popular with residents and tourists alike. The beautiful lagoon uses sea water chlorinated by AutoChlor™ technology installed by The Pool Man, a leading Pool and Spa industry firm in the region. Company director, Paul Musetti, has also installed AIS technology in other hotels, resorts and schools. "My customers discover that disinfection by electrolysis is far more convenient than the hassle of buying, storing and dosing sodium hypochlorite."

HOTELS, RESORTS AND CASINOS

*Skycity Resort, Darwin,
Australia. Constructed By
Baldwin Aquatics*

EcoLine™



The 2,500 m2 lagoon at Darwin's Skycity resort is one of this five-star destination's signature features. Artisan pool designer-builder Baldwin Aquatic Pty Ltd was commissioned by John Holland to construct Skycity's impressive lagoon in 2012. For disinfection Baldwin installed AIS EcoLine™ technology. Commenting on the project Baldwin Aquatic explained that, "EcoLine™ has the ability to cut the expenses for chlorine and salt in Darwin's highly evaporative climate".

RECREATIONAL PUBLIC SPACES

*Settlement Cove Lagoon,
Redcliffe, Australia. Installed
by Baldwin Aquatics*

AutoChlor™



Settlement Cove Lagoon is a vast public attraction and recreational facility, complete with water jets, a wading pool and swimming area and located in the heart of Redcliffe overlooking Moreton Bay. Allan Williamson of pool designer and building company, Baldwin Aquatics said "AIS technology is featured in many Baldwin Aquatics case studies including several premium class hotel destinations. It is proven technology from a company we trust." Alan's company also installed the AutoChlor™ inline chlorinator at Redcliffe's Settlement Cove.

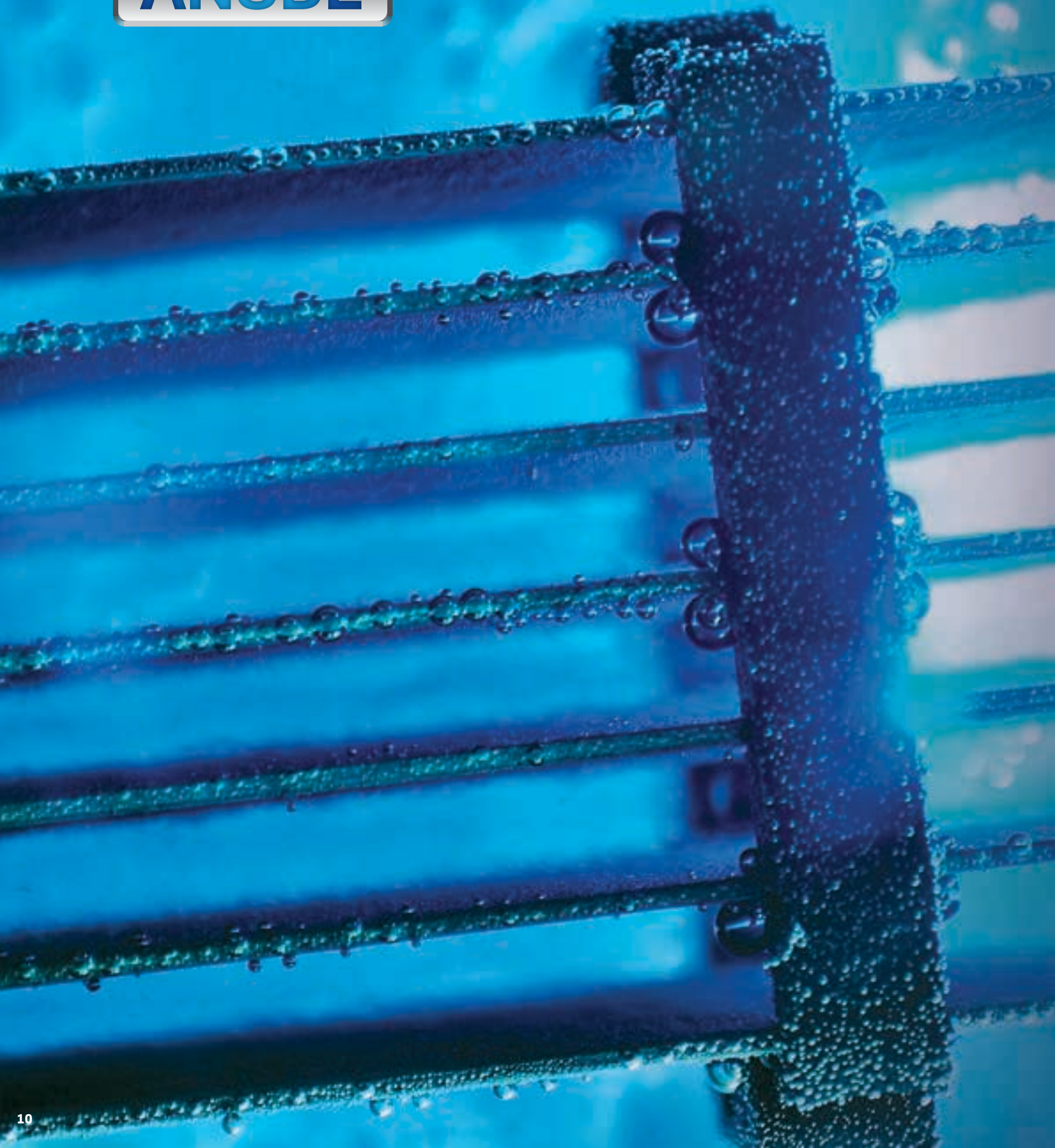
LUXURY RESIDENCES AND RESORTS

*Azure Urban Resort Residences,
Philippines, installed by
Chemsphere Corporation*

AutoChlor™



The 3,500 m2 man-made beach and associated lap pool are one of many unique features at the spectacular new Azure Urban Resort Residences near Manila. Chemsphere Corporation was selected to install the water disinfection systems responsible for keeping the water at Azure sparkling, clean and healthy. Rogelio Heredero, the owner of Chemsphere Corporation, considers AutoChlor™ to be a natural choice for Azure. "AutoChlor™ inline chlorinators do away with the expense and inconvenience of stock piling liquid chlorine onsite in storage tanks."



The heart of every AIS chlorine generator

As a leading water disinfection company AIS insists on high standards, particularly when it comes to the technology at the heart of each one of its chlorine generators.

When AIS could not find an anode supplier to meet its exacting standards, the company took matters into its own hands and decided to manufacture its own. In 1998 the first batch of Genuine AIS Anode was born. Today AIS produces thousands of anodes each year at one of its three production facilities in Brisbane, Australia.

Genuine AIS Anodes begin their life as a plate of pure, high-quality titanium. Titanium has a unique strength-to-weight ratio, resists corrosion and is non-allergenic. Each pure titanium plate undergoes a multi-stage cleaning and etching process which allows it to bond with AIS' unique ruthenium compound-based catalytic coating (which is painstakingly applied and cured, one microscopically thin coat at a time).

The curing process involves repeated baking, to temperatures that would melt lesser metals. Over many weeks, the catalytic coating is turned into a ceramic-like material that is much more efficient in chlorine generation than the original titanium beneath it. Despite being covered

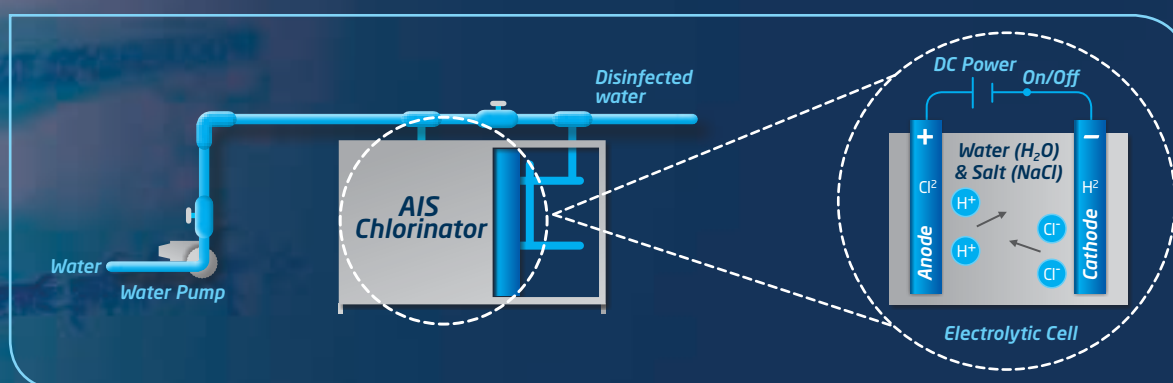
in dozens of layers, the total width of the catalytic coat on some AIS Anodes is less than a fifth of the width of a strand of human hair.

Genuine AIS Anodes proprietary coating increases the efficiency of the electrolysis process along with the life of the electrodes.

The finished anodes are then cut to size and assembled by AIS' skilled and experienced production team to create the electrolytic cells that facilitate the electrolysis process at the heart of all AIS chlorinators.

Inside each electrolytic cell an electrical current passes between two electrodes through an electrolyte (water containing minerals like sodium chloride). Hydrogen ions move to the cathode and turn into hydrogen. Chloride ions move to the anode and turn into chlorine. Meanwhile sodium and hydroxide ions get left behind and stay in the solution. This provides all the necessary ingredients for the automatic formation of Hypochlorous Acid (commonly referred to as Chlorine), an effective and proven water disinfectant.

This process occurs not only within the electrolytic cell but inside the treated water itself, meaning a stop to the endless cycle of traditional chemical dosing forever.



To learn more about AIS' exclusive anode technology visit www.aiswater.com.au

AIS Australian Innovative Systems™



Breaking the TDS barrier for inline chlorination

Disinfects at TDS levels from 1,200ppm - 2,500ppm (works at levels of up to 75% lower than traditional salt water systems).

Historically, the many benefits of inline chlorine generation on a commercial scale were only available to saltwater facilities while electrolysis disinfection was only viable in water with a high mineral content (around 4,500ppm or more).

In 2009, equipped with over 20 years of endless innovation, AIS smashed the inline chlorination barrier with the launch of EcoLine™ making inline chlorination a possibility for many commercial facilities.



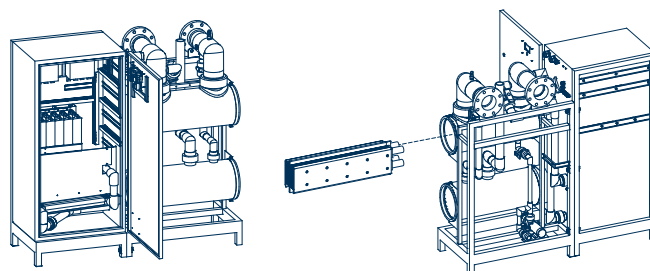
MODEL	Chlorine*, g/h		Power Consumption**, kW	
	at 1200 mg/l TDS	at 2500 mg/l TDS	at 1200 mg/l TDS	at 2500 mg/l TDS
FSRCN-65	65	98	1.1	0.93
FSRCN-100	98	147	1.66	1.39
FSRCN-130	130	196	2.2	1.85
FSRCN-200	195	294	3.31	2.78
FSRCN-260	260	392	4.41	3.7
FSRCN-325	325	490	5.51	4.63
FSRCN-400	390	588	6.61	5.55
FSRCN-550	552	833	9.36	7.86
FSRCN-650	650	980	11.02	9.25
FSRCN-800	780	1180	13.22	11.14
FSRCN-1100	1105	1670	18.73	15.77
FSRCN-1300	1300	1742	22.03	16.45
FSRCN-1700	1660	2500	28.14	23.6
FSRCN-2000	1950	2613	33.05	24.66
FSRCN-2200	2210	3330	37.46	31.44
FSRCN-2600	2600	3484	44.07	32.88
FSRCN-2800	2760	4165	46.78	39.32
FSRCN-3300	3315	4998	56.27	47.18
FSRCN-4000	3900	5226	66.1	49.33

NB: Larger capacity models are available upon request.

*at 38% of Chlorides in the TDS. Please note that pH greater than 7.5 increases chlorine demand.

**at 25°C and specified flow rate.

Normal operation pressure up to 275 kPa, up to 1000 kPa can be built upon request FLSRC Series for under 38% of Chlorides and/or under 500 mg/L TDS are available upon request Data provided in the table above to be used as a guide only.



AutoChlor™

The original, salt water inline chlorinator

Disinfects at TDS levels from 2,500ppm - 35,000ppm (brackish to seawater - automatically adjusts to water of any salinity.)

While the AutoChlor™ brand was first established in the 1970's as a leader in residential salt water disinfection, it was in 1995 that AIS built its first, inline salt water system on a commercial scale.

Millions of litres of water in home and municipal pools, aquatic centres, competitive swimming facilities, hotels, resorts and water theme parks now remain sparkling clean and healthy using AutoChlor™ technology.



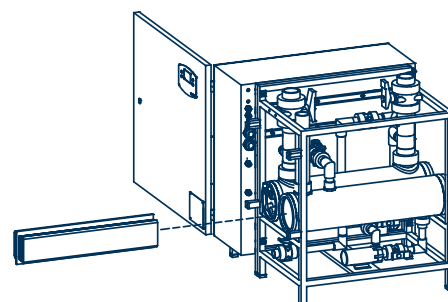
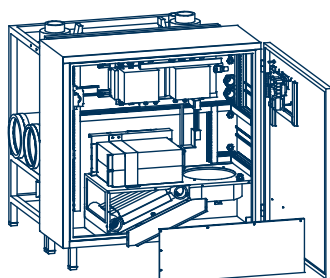
MODEL	Chlorine*, g/h		Power Consumption**, kW	
	at 5000 mg/l TDS	at 35,000 mg/l TDS	at 5000 mg/l TDS	at 35,000 mg/l TDS
SRC-100	100	128	0.6	0.5
SRC-150	150	192	0.9	0.8
SRC-200	200	256	1.2	1
SRC-300	300	384	1.8	1.5
SRC-400	400	512	2.4	2.1
SRC-500	500	640	3	2.6
SRC-625	625	800	3.8	3.2
SRC-800	800	1024	4.8	4.1
SRC-1000	1000	1280	6	5.1
SRC-1250	1250	1600	7.5	6.4
SRC-1500	1500	1920	9	7.7
SRC-2000	2000	2560	12	10.3
SRC-2500	2500	3200	15	12.9
SRC-3000	3000	3840	18	15.4

NB: Larger capacity models are available upon request.

*at 38% of Chlorides in the TDS. Please note that pH greater than 7.5 increases chlorine demand.

**at 25°C and specified flow rate.

Normal operation pressure up to 275 kPa, up to 1000 kPa can be built upon request FLSRC Series for under 38% of Chlorides and/or under 500 mg/L TDS are available upon request Data provided in the table above to be used as a guide only.



AIS TECHNOLOGY IN OPERATION WORLDWIDE

EXPORTED
TO OVER 55
COUNTRIES

ARGENTINA	CUBA	GREECE	MAURITIUS	PHILIPPINES	TURKEY
AUSTRIA	CYPRUS	HOLLAND	MEXICO	PUERTO RICO	UAE
BARBADOS	CZECH REPUBLIC	INDIA	NEW CALEDONIA	REP. OF MOLDOVA	UK
BELGIUM	DENMARK	INDONESIA	NETHERLANDS	RUSSIA	UKRAINE
BRAZIL	DOMINICAN REP.	IRAN	NEW ZEALAND	SAUDI ARABIA	URUGUAY
CANADA	EGYPT	ITALY	PANAMA	SINGAPORE	USA
CHINA	FIJI	KAZAKHSTAN	PAPUA NEW	SPAIN	VANUATU
COLOMBIA	FRANCE	KENYA	GUINEA	SWEDEN	VENEZUELA
COSTA RICA	FRENCH POLYNESIA	KOREA	PORTUGAL	SWITZERLAND	VIETNAM
CROATIA	GERMANY	MALAYSIA		THAILAND	



ABOUT AUSTRALIAN INNOVATIVE SYSTEMS (AIS)

AIS is a multi-award winning, Australian owned leader in the design, production and supply of commercial and residential water hygiene technologies.

All research, development and manufacturing takes place at AIS' production facilities in Brisbane, Australia. Extensively experienced in serving international customers, AIS has proudly exported to over 55 countries around the world.

AIS' mission is to create safe, economical and versatile products to protect humans and habitats against waterborne pathogens and the transmission of infectious disease.

All of AIS' brands - AutoChlor™, EcoLine™, MineralChlor™ and ChloroGen™ - are equipped with electrochemical cells featuring Genuine AIS Anodes™. These innovative technologies are designed to disinfect everything from the most saline of sea water to groundwater, town water or even waste water.

Simple, affordable and reliable, AIS delivers outstanding results in water hygiene and halts the endless cycle of dosing and maintaining fresh supplies of liquid or granular chlorine^[1]. AIS is also helping to lower the amount of hazardous chemicals transported each day on public roads and highways and its systems can assist with Workplace Health and Safety requirements in some locations.

As industrial expansion and population growth continue unabated, AIS' vision is that the Earth's fixed supply of water remains clean and healthy forever despite ever greater contact with people and human activity.

Thousands of families swim, play and relax in backyard pools protected by AIS' residential systems every day. Millions of litres of water in community pools, aquatic centres for competitive swimming and training, luxurious hotel and spa pools, water features, resort lagoons and gigantic water parks remain healthy and sparkling clean thanks to AIS' leisure industry technology. AIS' commercial systems are also ideal for aquaculture, horticulture, agriculture, utility water, industrial waste, chemical production, mining, cooling towers and offshore marine facilities.

AIS' technicians and skilled workers bring together a diverse range of expertise in micro-electronics, chemistry, power systems, electrical and mechanical engineering, water system design, assembly, metalworking and plumbing as well as taking pride in high standards of customer service and support.

AIS has received a wide range of accolades including a Gold Gaia Award, Telstra Business Innovation Award, International Stevie Award (Most Innovative Company), Australian Technology Showcase and Business Ideas Grants.

[1] Typically Sodium Hypochlorite or Calcium Hypochlorite

AIS' Services include:

- Custom Design
- Consulting
- Installing
- Commissioning
- Scheduled Servicing

AIS' Products include:

- AutoChlor™
- ChloroGen™
- EcoLine™
- Genuine AIS Anodes™
- MineralChlor™
- pH Controllers



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