Hyprolyser®

Electrolytic chlorination
The sustainable solution

Uncompromising
water disinfection systems

gaffey
WATER TREATMENT FOR LIFE

www.gaffey.co.uk

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Water treatment for life...

At Gaffey, our story is one of change, innovation and development. Established for over 35 years, we specialise in the technology, design and build of advanced in-situ electrochlorination and chlorine dioxide generation systems.

We understand the importance of creating safe environments and use our extensive industry experience to focus on solving the problems of waterborne bacteria, that is why we pride ourselves in manufacturing products that challenge convention and exceed expectation.

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WATER TREATMENT FOR LIFE

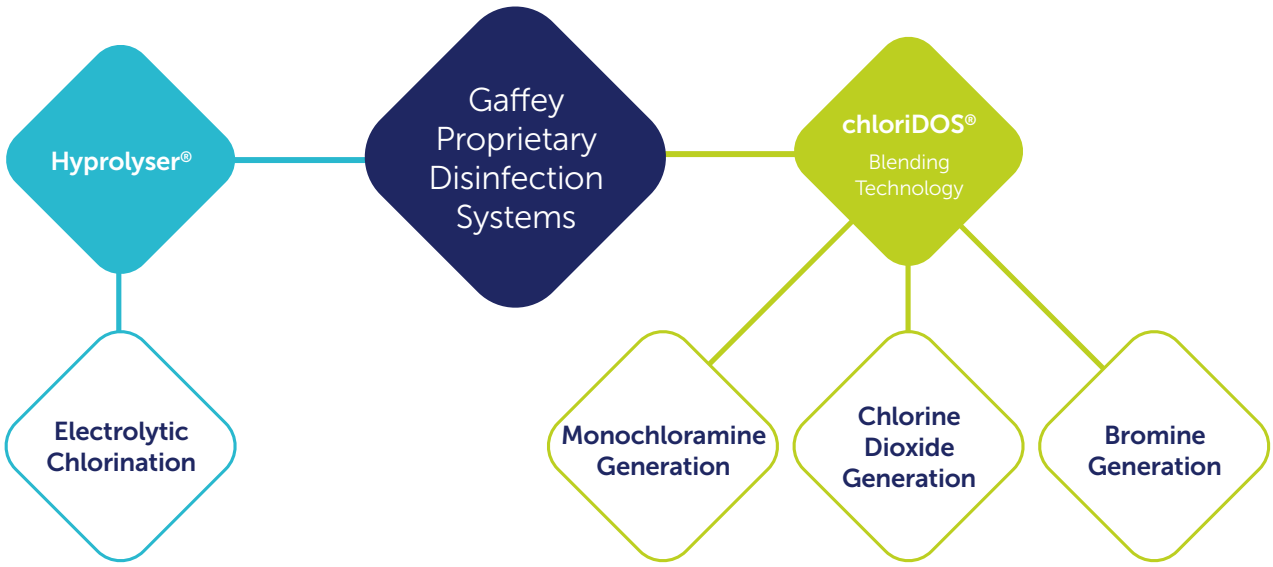
Manufactured at our base in the heart of Lancashire, our systems are distributed globally through our network of trusted service partners, ensuring on-time delivery, smooth installation and an excellent local service to all customers.

Our systems are suitable for a wide range of industrial and commercial water treatment markets. Gaffey products are used by some of the world's best-known names for applications in brewing, food preparation and packing, drinking, water treatment, power generation, textile and paper production, and in hospitals, hotels and aquatic leisure facilities around the world.

Global collaboration: As an equipment systems manufacturer, we only serve B2B clients directly. Our unique technologies and products ensure we are well placed to facilitate and build beneficial relationships with key OEM and PLA clients.

Through innovative design and smarter engineering, we create unique, functional and future-proof systems with end-user safety in mind. Our systems include chloriDOS® Chlorine Dioxide Generators and Hyprolyser® Electrolytic Chlorination Systems.

In short, we provide on-site chemical generation systems you can trust.



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Hyprolyser®

The sustainable solution

Hyprolyser® systems are the safe, reliable and efficient way to generate sodium hypochlorite on-site for water disinfection. Using harmless salt, water and electricity, Hyprolyser® technology offers a safer, cleaner and more environmentally friendly alternative for the chlorination of water.

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Our family of Hyprolyser® systems include small, wall or skid mounted iSEC® models to larger, high-capacity stand-alone units. All benefit from our unique vacuum dosing and plug-and-play technologies, providing a huge range of application flexibility, simple installation and easy operation and maintenance, whilst offering the benefits of cost effectiveness and high efficiency.

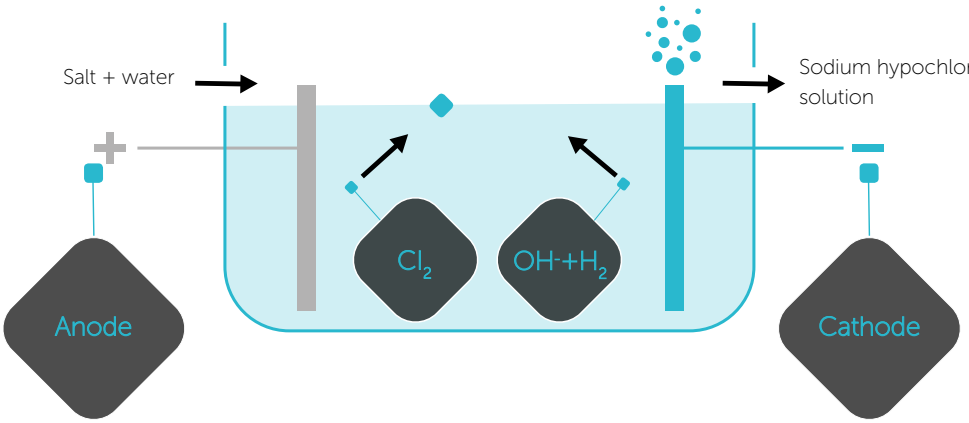
From disinfecting a spa pool to treating millions of litres of drinking water per day, and everything between, there is a Hyprolyser® system available to perfectly fit your needs.

- Sustainable
- Economical
- Safe, low hazard system
- Simple to use
- Reliable
- Low maintenance

Safe and efficient in-situ generation of sodium hypochlorite.

Hyprolyser® technology

Electrolytic chlorine chemistry produces a non-hazardous solution of sodium hypochlorite (range 0.5 – 0.7%).



Safety and sustainability at heart

Electrolyser design

Designed by our R&D team, our Hyprolyser® electrolysers are manufactured and assembled by hand in our factory in Lancashire. Meticulous attention to construction detail and thorough testing both guarantee efficient output, robustness and long-term reliability, with a 5-year limited (pro-rata) warranty for added peace of mind.

Process control

The whole of the electrolysis process is controlled using our specially developed, dedicated software. All key performance parameters are monitored and can be accessed remotely via Modbus output.

Features & benefits

- Durable, attractive, wipeable plastic cover
- Vivid LED illumination from the electrolytic chamber indicates operational status
- Easy to operate multi-lingual control panel & OLED display
- Operational parameters displayed and code protected
- Alarm event log with real time clock recording
- Volumetric flow measurement of water and brine for consistent high efficiency electrolysis
- Corrosion resistant materials
- Failsafe system management of room ventilation via integrated hydrogen gas detector
- Alarm event logging
- Optional remote monitoring and data acquisition via Modbus RS485
- 2 – 5 year guarantee depending on model

Hyprolyser®

Why choose electrochlorination?

Hyprolyser® electrochlorination uses food grade salt and potable quality supply water to generate a fresh, high quality hypochlorite solution every day, on-site, on-demand.

This offers several advantages over other chlorination systems, including these benefits:

Benefits

- Salt is a widely available commodity used in many commercial and industrial settings
- Competitively priced for both small and large users
- Salt is very safe and easy to store, with an infinite shelf life
- Requires minimal packaging which can be easily recycled
- The avoidance of risks which occur through frequent chemical deliveries and handling
- Reduced health & safety management
- A low-hazard workplace
- Reduced disinfection costs

These are just some of the benefits Hyprolyser® electrochlorination systems can bring to your operation. On top of increasing workplace safety, electrochlorination has a lower environmental impact compared to other chlorination options, as salt is a sustainable, non-toxic product.

Salt, water and electricity. All that our Hyprolyser® systems need to efficiently generate a supply of dilute sodium hypochlorite.

<1% below the threshold for classification as a hazardous substance.

Simple to use

Fill saturator with harmless, readily available salt. No remedial maintenance of chlorine injector needed. No technical intervention required by the operator. No chemical handling.

Economical

Low cost of salt, reduced pH correction chemical costs. Reduced operator labour. Low service and maintenance costs. Long service life means low total cost of ownership.

Sustainable

Low environmental impact, minimal recyclable packaging, reduced transportation, no hazardous waste disposal.

Safe, low hazard system

Delivery and storage of salt, no toxic dangers to staff or neighbours in transit or storage. No hazardous waste disposal.

Reliable

Annual test and inspection. 2-year service interval. 2-5 year warranty. 6-8 year typical electrolyser life.

Low maintenance

Smart design and robust engineering requires simple, minimal periodic maintenance.

Hyprolyser® iSEC®

Delivering the highest standards of water hygiene, the Hyprolyser® iSEC® range is a generation of off-line chlorine systems ideal for smaller scale chlorine demands. The core iSEC® range includes 30, 60 and 90g/h Cl_2 models, which generate chlorine on site for day tank storage or direct injection on demand.

Our unique vacuum dosing technology delivers precise brine and water proportioning, with automatic regulation of the electrolyser DC current optimising energy use. These features mean that iSEC® models maintain a highly consistent chlorine concentration in the generated product (av. 6g/l).

The iSEC® range is designed to fit easily and seamlessly into any water disinfection system and is available in modular or fully pre-assembled and tested skid format.

Operation is simplified through automated product tank filling and a colour changing LED backlight illuminating the electrolyser to clearly display normal operation or if a parameter warning or alarm condition is present.

Features & benefits

- Highly compact, space saving design – ideal in restricted space
- Consistent product strength – dependable clean water
- Easy operation – automated product fill
- Simple monitoring – colour change indicates operating status
- Sleek, easy to clean design

Hyprolyser® iSEC® applications

Our iSEC® range is suited to a range of operations and applications where an efficient and cost-effective supply of chlorine is required on a smaller scale, including building services, legionella control, private water supplies, hotels and school pools.

Drinking water

Branxholm Water Treatment Reservoir, Tasmania - iSEC® 90 Modular

iSEC®'s smaller capacity is ideal for bore-hole and private water supplies to ensure chlorine solution is always freshly supplied in a low chlorate content, enhancing the reservoir's capacity to deliver high-quality drinking water to the community.

Bathing water

The Grand Hotel Pool and Leisure Complex, UK iSEC® 60 Skid 2

Sustainability was the key motivator for this installation, along with fast installation and minimal impact on the business and guests. Consistent product strength with a sediment and scale-free dosing solution ensures reliability in delivering the highest standards of bather hygiene.

Quick sizing guide

Approx. Capacity	Drinking water MLD @ 1ppm Cl_2	Total Pool Volume (m^3)			
	2.16	300			iSEC 90
	1.44	180		iSEC 60	
	0.72	90	iSEC 30		
	Chlorine gas (kg/day)		0.5	1	1.5
	Sodium hypochlorite 12% (L/day)		3	6	9
	Calcium hypo 70% (kg/day)		0.7	1.4	2.1

Current daily chemical usage

Hyprolyser® Compact

Patented Gaffey technology enables powerful generating capability in our Hyprolyser® Compact. Available as 240, 480 and 960g/h Cl_2 models, in space-saving skid unit design for quick and simple installation.

Featuring a large salt storage capacity and the flexibility to couple with larger external storage tanks, our Hyprolyser® Compact is the ideal solution for chlorine demands of up to 23kg/day Cl_2.

Our unique volumetric brine and water measurement technology allows the Hyprolyser® Compact to generate a safe and reliable supply of 0.6% sodium hypochlorite on demand, reducing costs associated with chlorination chemicals and maintenance.

Features & benefits

- Produces a low concentration solution below the hazardous substance threshold, eliminating difficulties associated with the handling and storage of chemicals
- A single Hyprolyser® can be used to feed multiple chlorine dosing points
- Space-saving skid design, fits through a standard doorway for quick installation
- Simple to operate and maintain with automated product fill
- Low service frequency with a typical 2-year maintenance interval
- Advanced safety features
- Remote monitoring and data acquisition

Hyprolyser® Compact applications

Hyprolyser® Compact systems are ideal for supplying chlorine in industrial processes and mid-sized commercial pool facilities, typically 25m lap pool + learner pool set-ups, leisure pools and private leisure clubs.

Teddington Pools & Fitness Centre, London
Compact 480 system

The Hyprolyser® 480 system was specified to avoid the unloading of hazardous chemicals near a public parking area. The Centre boasts 25m, learner and hydrotherapy pools.

Sea Lion Pool at Belfast Zoo, Belfast
Compact 960 system

As with all modern zoos, animal care and welfare are paramount. Chosen with this in mind, as well as being the sustainable solution, the Compact 960 keeps the sea lion pool clean and contributes to the animals' health and wellbeing. Resulting cost savings are also a bonus.

Quick sizing guide

Approx. Capacity	Drinking water MLD @ 1ppm Cl_2	Maximum Total of Pool Volume(s) m^3			
	23.04	2000			Compact 960
	11.52	1000		Compact 480	
	5.76	500	Compact 240		
	Chlorine gas (kg/day)		4.5	9	17
	Sodium hypochlorite 14% (L/day)		27	54	101
	Calcium hypo 70% (kg/day)		6.5	13	24

Current daily chemical usage

Hyprolyser® Standard

Offering a high level of installation flexibility in a wide variety of applications, the Hyprolyser® Standard range offers additional functionality and safety features.

The larger 4250 and 8500 models are available for very high-capacity requirements such as large drinking water treatment plants and multi-pool waterparks, offering chlorine production up to 8.5kg/h. Ask us for more details on these larger systems.

Hyprolyser® Standard applications

Due to its high chlorine capacity, the Hyprolyser® Standard range benefits many commercial operations, including:

- Swimming & spa pool disinfection
- Chlorination of potable water supplies
- Food washing / processing treatment
- Dairies / breweries cleaning in place (CIP)
- Cooling tower biocide treatment
- Secondary disinfection
- Industrial chlorination and wastewater treatments

Giving the same built-in benefits of our smaller systems, our Hyprolyser® Standard models offer additional safety features, including:

Additional safety features

- Integrated air dilution fan with sealed electrolyser compartment - no external Ex zones
- Quantitative ventilation airflow sensor for failsafe shutdown
- Hydrogen sensor for shutdown of system if any hydrogen is detected in the vicinity of the equipment
- Offering considerable health & safety benefits to operators and owners alike

Westwater Enterprises Pty.

Two Hyprolyser® 2200 systems are working well in Australia's first solar powered water treatment plant for Logan Water, Queensland. Chosen as part of an integrated system to generate significant savings on both capital and operating costs.

Quick sizing guide

Approx. Capacity	Drinking water MLD @ 1ppm Cl_2	Maximum Total of Pool Volume(s) m^3						
	204.0	16000						8500
	102.0	8000					4250	
	52.8	4000				2200		
	26.4	2000			1100			
	13.4	1000		560				
	6.7	500	280					
	Chlorine gas (kg/day)	5	9.4	18.5	40	76.5	153	
	Sodium hypochlorite 12% (L/day)	30	60	110	240	455	910	
	Calcium hypo 70% (kg/day)	7	13.5	26.5	57	109	218	

Current daily chemical usage

Technical summary

Our in-house technical sales team have a wealth of knowledge and experience to offer and are available to assist in the selection and correct sizing of Hyprolyser® systems and options.

Quick sizing guide

Approx. Capacity: Drinking water MLD @ 1ppm Cl_2	Maximum Total of Pool Volume(s) m^3											
204.0	16000											
102.0	8000											
52.8	4000											
23.04* | 26.4	2000											
11.52* | 13.4	1000											
5.76* | 6.7	500											
2.16	300											
1.44	180											
0.72	90	iSEC-30	iSEC-60	iSEC-90	COMPACT-240*	STANDARD-280	COMPACT-480*	STANDARD-560	COMPACT-960*	STANDARD-1100	STANDARD-2200	STANDARD-4250	STANDARD-8500
Chlorine gas (kg/day)		0.5	1	1.5	4.5	5	9	9.4	17	18.5	40	76.5	153
Sodium hypochlorite 14% (L/day)		3	6	9	27	30	54	60	101	110	240	455	910
Calcium hypo 70% (kg/day)		0.7	1.4	2.1	6.5	7	13	13.5	24	26.5	57	109	218
Nominal salt consumption kg/h		0.1	0.2	0.3	0.72	0.93	1.44	1.8	2.88	3.6	7.3	14	28
Nominal water consumption l/h		5	10	15	40	47	80	94	160	184	367	650	1300

*Compact system only.

Additional services

Support services & training

Our system specifiers are confident that safe installation and high-quality maintenance can be provided through our network of approved service partners. All service partners receive in-depth training to our exacting standards to enable a comprehensive understanding of installation and service requirements, ensuring the integrity and performance of our products.

Networking & collaboration

As an equipment systems manufacturer, we distribute Hyprolyser® systems globally through a network of trusted service partners. We serve B2B clients directly with our unique technologies and products and are happy to build beneficial relationships with key OEM and PLA clients around the world.

If you are interested in becoming part of our network or want to learn more about Gaffey, please get in touch.

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WATER TREATMENT FOR LIFE

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V1_NOV_22