

chloriDOS®

chloriDOS®
ART ADAPTIVE
RESPONSE
TECHNOLOGY



PRECISION BLENDING TECHNOLOGY

In-situ chemical generation systems

gaffey
WATER TREATMENT FOR LIFE

No compromise

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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 design and build of advanced in-situ chemical generation and blending systems for the global water treatment market.

Our motto 'Water Treatment for Life' closely reflects our passion and commitment to continually discover innovative ways to build safe, sustainable and cost-saving systems for industries around the world. Through innovative design and smarter engineering, we create unique, functional and future-proof systems with end-user safety in mind.

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 around the world.

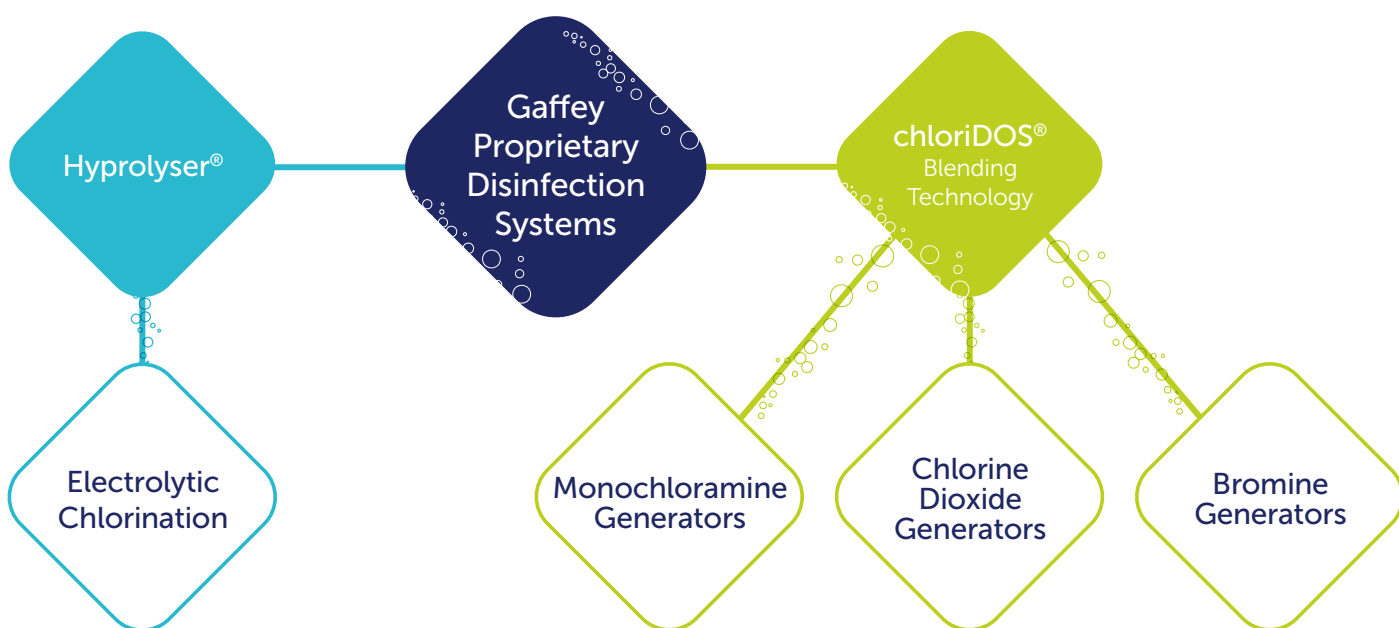
Our systems include chloriDOS® blending technologies and Hyprolyser® electrolytic chlorination systems, each providing on-site chemical generation systems that are designed to efficiently tackle waterborne bacteria.

Our innovative systems are suitable for a wide range of industrial and commercial water treatment markets. Utilised by some of the world's best-known names, our technologies are applied in brewing, food preparation and packing, drinking water treatment, power generation and paper production, as well as hospitals, hotels and aquatic leisure facilities worldwide.

Looking towards a greener future, sustainability is the key focus of our product development strategy.

We are constantly seeking smarter ways to help reduce the transit and handling of hazardous chemicals to operator sites, with the additional benefit of reducing contaminated plastic waste packaging.

As an equipment systems manufacturer, we only serve B2B clients directly. Our unique technologies and products are distributed around the globe through our trusted network, ensuring we are well placed to facilitate and build beneficial relationships with key OEM and PLA clients.



chloriDOS® iOX® uses Adaptive Response Technology

Our latest generation of compact chloriDOS® iOX® systems give you even more. Our unique, state-of-the-art Adaptive Response Technology allows the system to adjust to changing environmental and site conditions, ensuring continued efficient and effective chemical generation.



The chloriDOS® unit can detect the smallest irregularity within its process. Rather than immediately stopping chemical generation, it will automatically self-regulate and continue to function, whilst displaying the relevant warning annotation, enabling the operator to easily identify and resolve any issues without interrupting operation, avoiding nuisance and costly shutdowns.

PRECISION BLENDING TECHNOLOGY

Our unique chloriDOS® in-situ blending systems are designed to provide safe, clean water for industries around the world, offering a variety of benefits to those seeking reliable protection against legionella and other waterborne disease.

What can you blend?

Manufactured with the ability to customise chemistries according to your precise specification, chloriDOS® chemical blending systems are uniquely tailored to your chemical requirements.

Each chloriDOS® system is a single, universal compact unit which can be specifically configured to your individual water disinfection needs. Featuring interchangeable components for different chemistries, our chloriDOS® system ranges currently include chloriDOS iOX® for chlorine dioxide generation and chloriDOS® MCA for monochloramine generation.

What makes chloriDOS® unique?

chloriDOS® units incorporate our patented reaction technology to create a batch generator which is unique to Gaffey.

Batch generation is performed under a fail-safe vacuum and utilises exact volumetric reagent measuring and dilution water control. This allows for safer, accurate dosages and lower strength solutions.

Unlike conventional blending systems which present unreliable low flow rates and varying pressures, chloriDOS® units draw chemicals under vacuum, offering a consistent rate of flow for accurate, precise chemistry blending.



FEATURES OF CHLORIDOS® BLENDING SYSTEMS

IP65 rated system

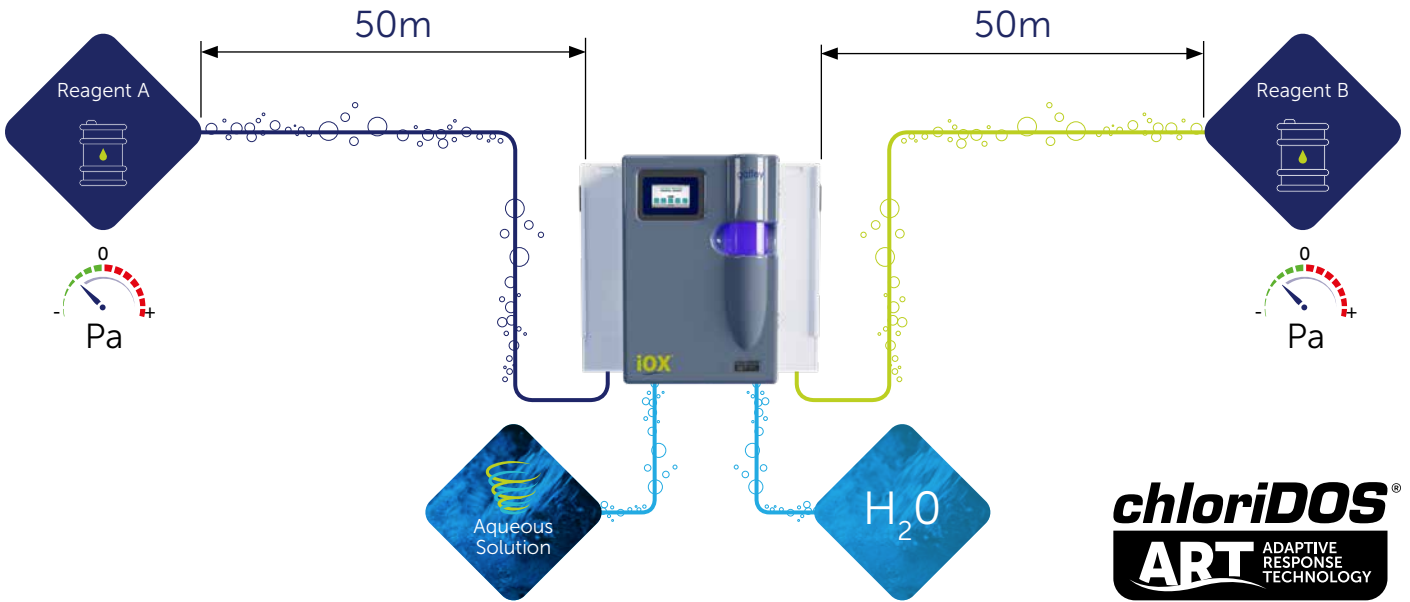
Each of our chloriDOS® units features a durable and attractive plastic equipment cover and a security lock facility for additional safety, with LED status illumination.

Touchscreen HMI controller

Offers configurable chemical & process name tags, operator prompts, operation event logs, reagent volume live monitoring status, multi-lingual, operator access and service access code protection, external process remote inhibit and alarm inputs.

Also, unlike conventional, complex disinfection systems, our compact unit keeps everything simple, including safety. Our unique vacuum technology also allows chemicals to be transferred greater than 50m from remote storerooms.

This ensures hazardous chemicals are not stored together, promoting enhanced safety measures. Reagent chemical lines have double-containment tube connection facility with leak detection and anti-syphon protection.



Systems to suit all industries and applications

Chlorine dioxide and monochloramine solutions are both used for a wide variety of applications, including food processing, brewing, odour control in waste

processing, secondary disinfection for drinking water, commercial swimming pool and water disinfection for showering and bathing.

Aqueous solution can be transferred direct to point of application eliminating need of dosing pump(s) through programmable batch dosing or to external product storage tank facility via level control.

Peace of mind

All chloriDOS® systems are tested to exacting standards and include a guaranteed 2-year warranty for CE conformity.

**TWO
YEAR**
Warranty



BENEFITS OF CHLORIDOS® BLENDING SYSTEMS

Efficient installation

Using our unique plug-and-play design, chloriDOS® blending units can be installed in as little as a day. All Gaffey manufactured products are made fully wet and electrically tested before dispatch for added peace of mind, as safety is paramount. Whichever unit is right for your disinfection needs, you can be assured of safety in installation, operation and maintenance at all times.

Unbeatable precision

Our certified chloriDOS® in-situ blending systems consume fewer chemicals on-site, offer online monitoring and employ super-safe and accurate auto-mixing under vacuum to minimise health & safety issues in material handling.

Enhanced safety

Our unique, patented vacuum process eliminates the need for chemical reagent dosing pumps, greatly improving reliability and reducing maintenance, with the additional benefits of flexibility and scalability.

Practical & proven

chloriDOS® is compact, durable and self-contained, providing real safety benefits for owners and operators alike. WRAS approved in the UK, all our models conform to CE/UKCA standards and come with a two-year product warranty for added peace of mind.

All chloriDOS® blending systems benefit from our unique plug-and-play technologies, providing a huge range of application flexibility, simple installation and easy operation and maintenance.

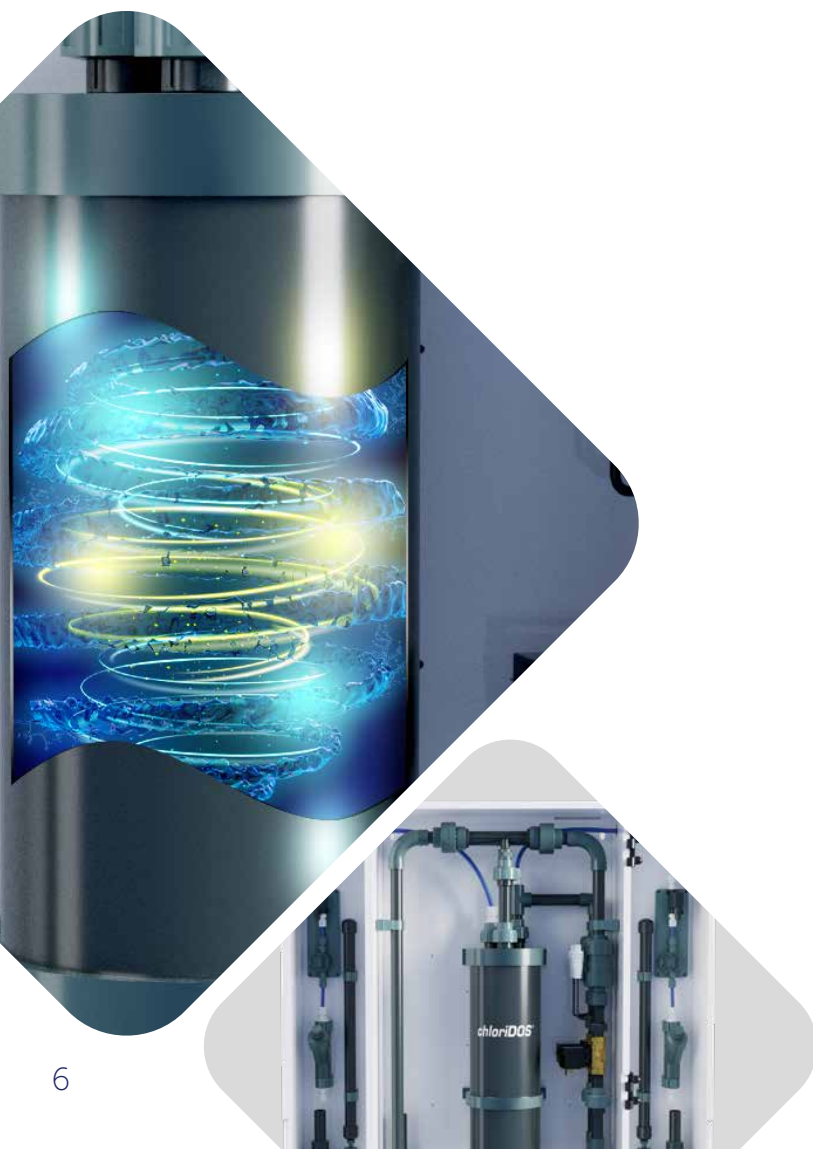
Simple maintenance

All units feature a calendar schedule service due prompt

- (YR1, YR2, YR3, YR4) so you won't miss a service

Process control

chloriDOS® systems can be controlled using our specially developed, dedicated software. All key performance parameters can be monitored and controlled remotely.



FEATURES OF CHLORIDOS® BLENDING SYSTEMS



Highly durable construction

Built to last, constructed using chemically resistant and robust materials to ensure the longest possible lifespan for the system.



Unique batch generator

Our patented technology is used to create a unique batch generator. Volumetric flow sensors measure the precise volume of chemical reagents entering the reactor to achieve >99% process efficiency. Added peace of mind and convenience comes with code protected solution strength setting, and automatic reagent priming facility after drum change or tank refill from empty.



Innovative batch process control

Added peace of mind and convenience comes with code protected solution, strength setting, and automatic reagent priming facility after drum change or tank refill from empty.



Process status & alarms

Information is always at your fingertips, thanks to easy access to the ChloriDOS® system. It lets you know the system is in perfect working order at all times. Remote communication allows access to all usage data, status reports, system parameters and fault logs.



Peace of mind

2-year manufacturer warranty on all models. Low maintenance and long-term system durability.



Simple operator & service management

Our user-friendly interface makes life easy for operators. Completing the required low frequency maintenance tasks is simple, with three tier access for operators, site technicians and service engineers.

- Display and record site water meter readings and volumetric usage of chemical reagents
- Real time clock fault log management display with service interval alert and reactor replacement alert
- Adjustable chemical reagent drum/tank volumetric level alert facility, in litres and optional reagent empty alert switching
- Watchdog and display of pre/existing chemical reagent dosing status and prevention of chemical imbalance to reaction chemistry



Integral ART Adaptive Response Technology adjusts to changing environmental and site conditions.



WHY CHLORINE DIOXIDE?

Chlorine dioxide (ClO_2) has some unique properties that are particularly useful in the disinfection of water systems. It effectively destroys legionella, biofilms and other bacteria, setting it apart from other disinfection methods.

With minimised side reactions and lower dependency on pH levels, ClO_2 is also 10 times more soluble in water than chlorine and does not hydrolyse, making it a superior solution for disinfection.

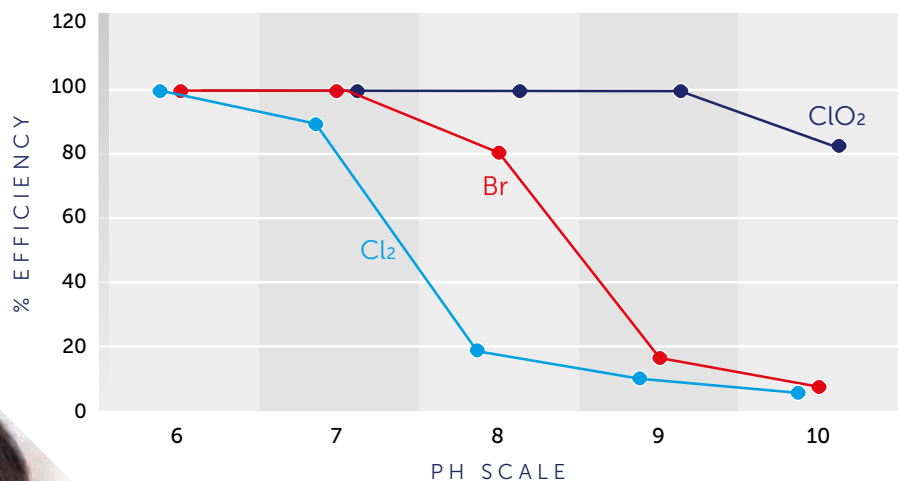
Safe on-site generation

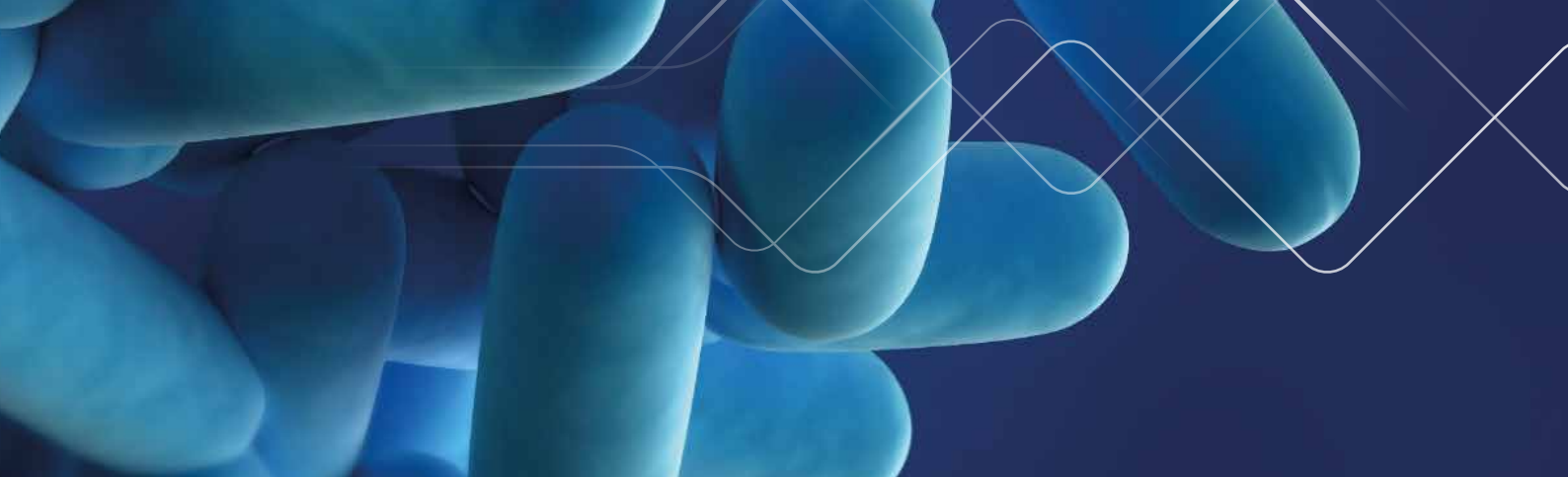
When produced by on-site generation, using binary reagents, chlorine dioxide can be very safely and economically generated in low concentration solutions ready for use. This reduces chemical handling and the environmental impact of water treatment.

Effective over a wide pH range

Chlorine dioxide is far less reactive than chlorine and many other oxidisers, making it highly effective over a very wide pH range. Therefore, it has a much higher disinfection capacity to destroy the intended target, bacteria and biological contamination. Due to its lower reactivity, chlorine dioxide is an excellent choice for applications where a reduction in DBPs and the formation of toxic THMs, chloramines, or odour/taste problems must be avoided.

COMPARISON OF THE EFFECTIVENESS OF CHLORINE, BROMINE AND CHLORINE DIOXIDE BETWEEN THE PH RANGE OF 6-10





Proven to destroy legionella

Legionella is a fact of life. Although harmless at low concentrations, there is a real danger of serious – even fatal – infections, if bacteria are left to thrive. Due to its unique properties, chlorine dioxide can rapidly penetrate and destroy biofilm, algae and cryptosporidium/giardia cysts, making it the disinfectant of choice for legionella control and other decontamination treatments.

Applications and system benefits

Gaffey's unique and patented chloriDOS® iOX® technology provides the future of on-site chlorine dioxide generation, showcasing optimum safety, precision and efficiency.

Effective at reducing THMs

Trihalomethanes are a compound often present in chlorine treated water which contains high levels of organic material, with studies suggesting THM exposure can have a negative effect on human health. Thanks to its unique properties, chlorine dioxide is effective at reducing these potentially harmful compounds. In a recent case study the reduction after just two months shows an improvement from previous systems, as levels have been brought well under control.

Iron

- Average Iron Pre-install = 0.090mg/l
- Average Iron Post-install = 0.002mg/l

Manganese

- Average Mn Pre-install = 0.325mg/l
- Average Mn Post-install = 0.005mg/l

Trihalomethanes

- Average THM = <5µg/L

Features

Control

- Chemical usage counters
- Variable output control
- Alarm & event logs
- Service reminders
- Live process mimics
- Adjustable reagent concentrations
- Reagent refill reminders
- Vacuum batched reagents

Inputs

- Reagent A level
- Reagent B level
- Tank start/stop
- Tank high level
- Tank low level
- Batch control contact
- E-stop
- Remote inhibit
- Site water meter

Outputs

- Alarm signal contact
- Modbus RTU/TCP
- EtherNet/IP
- BACnet
- CANopen
- Email/SMS
- VNC

Due to their outstanding flexibility and scalability, our chloriDOS[®] iOX[®] systems are tailored to a wide variety of industries and applications, chloriDOS[®] iOX[®] 1 5-60 Modular is designed for smaller applications, whilst our iOX[®] 125-2000 range caters to larger disinfection needs – both supplying sectors with reliable, safe and effective water disinfection solutions.



chloriDOS[®] iOX[®] 1 5-60 Modular In-situ chlorine dioxide generation for smaller applications

Water disinfection for bathing and showering:
Providing safe, clean drinking water is a top priority. iOX[®] can be used to ensure that all potable water in public buildings has been disinfected with consistency and efficiency.

Food & beverage disinfection: iOX[®] can be utilised for the safe disinfection of water supplies within the food & beverage industry, helping businesses meet the strictest of standards.

Available models:

chloriDOS[®] iOX[®] 1 5-60 Modular

chloriDOS[®] iOX[®] 1 5-60 Modular

Wall-mounted and compact, the chloriDOS iOX[®] 1 5-60 Modular wall cabinet unit is designed for modular and system integrated applications.

Reagent Data		5	10	20	40	60
Product Output						
ClO ₂ Capacity	g/h	5	10	20	40	60
ClO ₂ Capacity	kg/d	0.12	0.24	0.48	0.96	1.44
ClO ₂ Solution	L/h	10	10	20	26	40
ClO ₂ Concentration	mg/L	500	1000	1000	1500	1500
ClO ₂ Storage	L	8				
Environmental						
Protection Class	IP	65 (Indoor use)				
Ambient Temperature	°C	5 - 40				
Humidity	% RH	90 (non-condensing)				

*Parameters adjustable via the HMI



chloriDOS® iOX® 2 5-2000 – Larger units for industrial settings

Cooling tower biocide treatment: Control of microbiological growth and legionella prevention within open and closed-circuit cooling water systems is greatly simplified using iOX® blending disinfection systems.

Odour control in waste processes: Chlorine dioxide is an exceptionally efficient solution for odour and bacterial control, offering a safe and superior performance in effluent and waste water treatment.

Drinking water application: Large-scale public drinking water supplies for towns and cities are often fed by reservoirs, large watercourses and water reclamation schemes. To successfully eliminate the growth of pathogens and biofilm contaminants, large watercourses and water reclamation schemes require a reliable and stringent disinfection system.



Available models:

chloriDOS® iOX® 2 5-2000 Modular

chloriDOS® iOX® 2 5-2000 Modular Skid

chloriDOS® iOX® 2 5-2000 Modular

Wall-mounted and compact, the chloriDOS iOX® 5-2000 modular wall cabinet unit is designed for modular and system integrated applications.

chloriDOS® iOX® 2 5-2000 Modular Skid System

Free-standing in purpose-built pre-made units, our 'plug-and-play' chloriDOS iOX® skid systems

provide a safe and reliable chemical blending and dosing technology.

Reagent Data		5L	10L	20L	40L	80L	125L	125M	125H	250L	250M	250H	500M	500H	1000H	2000H
Product Output																
ClO ₂ Capacity	g/h	5	10	20	40	80	125	125	125	250	250	250	500	500	1000	2000
ClO ₂ Capacity	kg/d	0.12	0.24	0.48	0.96	1.92	3	3	3	6	6	6	12	12	24	48
ClO ₂ Solution	L/h	2.5	5	10	20	40	62.5	62.5	62.5	125	125	125	250	250	500	1000
ClO ₂ Concentration	mg/L	2000					1800									
ClO ₂ Storage	L	200 (Skid Systems Only)														
Environmental																
Protection Class	IP	65 (Indoor Use)														
Ambient Temp	°C	5 - 40														
Humidity	% RH	90 (Non-Condensing)														



WHY MONOCHLORAMINE (MCA)?

The rising demand for clean, safe water has increased the interest in advanced wastewater treatment and reuse – including the use of monochloramine.

The unique biocidal properties of monochloramine are becoming increasingly recognised as a very effective treatment in the control and prevention of biofilm and legionella in warm and hot water systems, for both smaller applications including hospitals and large industrial cooling tower systems.

Proving good biocidal efficacy across a wide pH range within the water treatment system processes, important benefits associated with using monochloramine are the very low presence of DBPs (disinfection by-products) and low THMs (trihalomethanes) levels.

Monochloramine is stable in solution and non-corrosive, providing a safe disinfection solution for a wide variety of uses. Being a milder oxidant, monochloramine is perfectly compatible with all the pipe materials – both metallic and plastic – commonly used into building water systems, preventing premature ageing phenomena and pipes failures.

Although most studies focus on the efficacy of monochloramine against legionella, monochloramine is efficient against other waterborne pathogens, such as non-tuberculosis mycobacteria (NTMs) and pseudomonas.





chloriDOS® MCA: in-situ monochloramine generation

Make water work better with our chloriDOS® MCA monochloramine systems.

Offering precise blending and dosing, chloriDOS® MCA provides the future of on-site monochloramine generation. Each patented system is crammed full of our industry-leading technology, offering a safe, sustainable and reliable solution for applications big and small.

chloriDOS® MCA features:

- Volumetric pre-dilution of binary reagents
- Reagents up to 15% sodium hypochlorite, 40% ammonium sulphate
- Auto compensation of chlorine concentration decay
- Double wall tube containment of chemical suction
- Integral chemical leakage detection
- Safety suction demand valve
- Capacity output adjustable 100g/h to 1000 g/h MCA
- Available in modular and skid versions

Features

Control

- Chemical usage counters
- Variable output control
- Alarm & event logs
- Service reminders
- Live process mimics
- Adjustable reagent concentrations
- Reagent refill reminders
- Automatic NaClO degradation compensation
- Vacuum batched reagents
- ORP (Redox) generation set-point

Inputs

- Reagent A level
- Reagent B level
- Tank start/stop
- Tank high level
- Tank low level
- Batch control contact
- E-stop
- Remote Inhibit
- Site water meter

Outputs

- Alarm signal contact
- Modbus RTU/TCP
- EtherNet/IP
- BACnet
- CANopen
- Email/SMS
- VNC



MONOCHLORAMINE (MCA)

chloriDOS® MCA in-situ systems

chloriDOS® MCA 1000 offers precise blending technology for a wide range of larger industrial applications, including large hospital complexes, cooling tower biocide treatment, municipal drinking water and disinfection within large membrane systems for water recovery processes. No matter what your disinfection needs are, discover the efficient method for on-site production and accurate dosing of monochloramine. All our systems are factory-tested before dispatch and come with a 2-year warranty, giving you added peace of mind.

Available models:

- chloriDOS® MCA 1000 Modular
- chloriDOS® MCA 1000 Skid



chloriDOS® MCA 1000 Modular

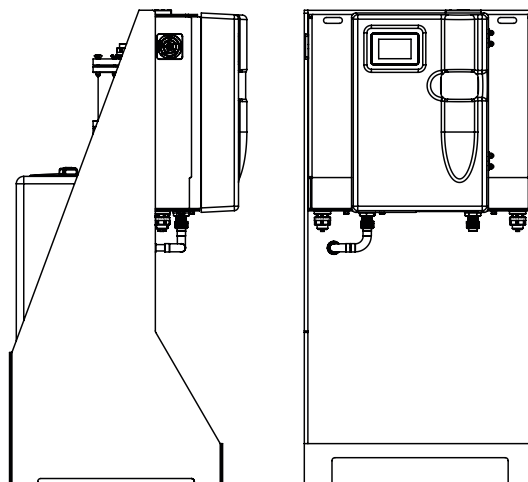
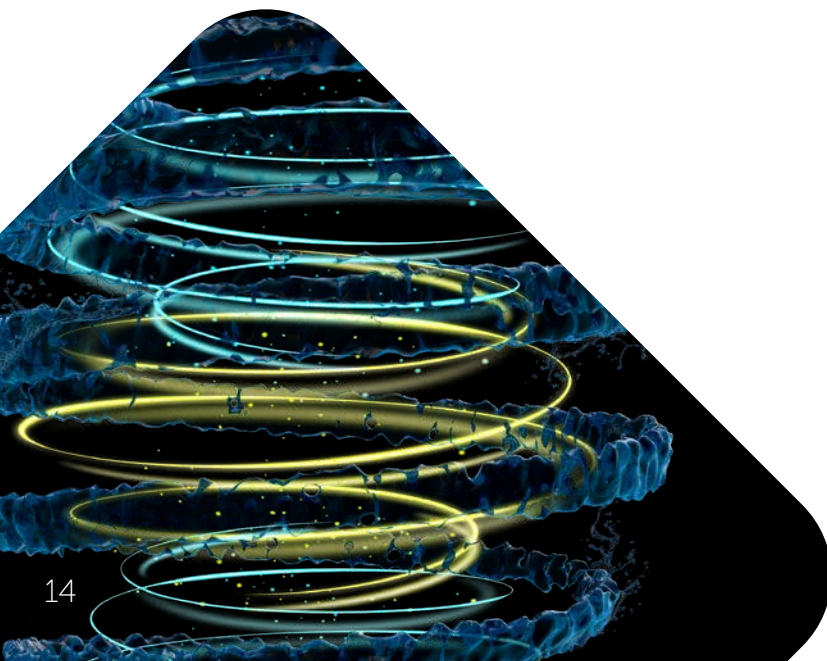
Wall-mounted and compact, the chloriDOS® MCA modular 1000g/h wall cabinet unit is designed for modular and system integrated applications. A single chloriDOS® MCA Modular monochloramine generator system is capable of direct batch volume dosing to the treatment process or delivery to a suitable external product storage facility.

chloriDOS® MCA 1000 Skid

Free-standing in purpose-built pre-made units, our 'plug-and-play' chloriDOS® MCA 1000 skid systems provide a safe and reliable chemical blending and dosing technology that is designed to treat water with outstanding precision. The product storage tank volume content is adjustable to optimise daily demand to reduce unnecessary solution degradation.

Reagent Data		MCA 1000
Monochloramine Output (NH₂Cl)		
Max. Capacity	g/h	1000
Max. Volume	L/h	5 – 500
Concentration	mg/L	2000*
Storage	L	200 (Skid system)
Environmental		
Max. Consumption	L/h	500
Protection Class	IP	65 (Indoor use)
Ambient Temperature	°C	5-40

*Parameters adjustable via the HMI





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, commissioning and service requirements, ensuring the integrity and performance of our products.

Networking & collaboration

As an equipment systems manufacturer, we distribute chloriDOS® 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.



For more information:
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