

## CHLORINE DIOXIDE GENERATORS (ClO<sub>2</sub>IX)

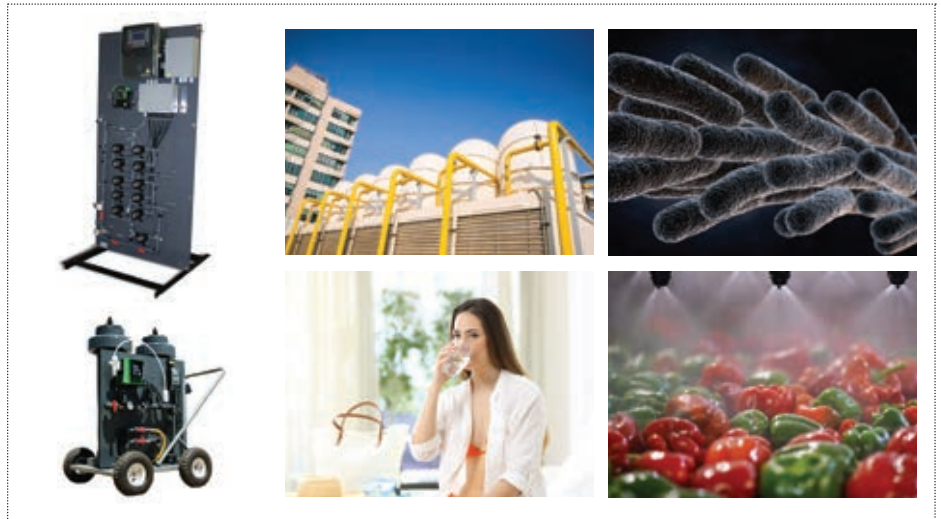
- Proven new-generation
- No storage of ClO<sub>2</sub>
- Safe - no chemicals are mixed
- Reliable ClO<sub>2</sub>IX generation
- No dangerous by-products
- Dilute, high quality solution
- Dispenses 700mg/L low concentration solution without storage
- Self-monitoring / correcting

### Suitable for...

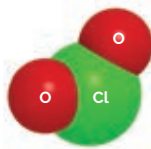
- Biofilm eradication
- Legionella control
- Membrane systems
- Water distribution systems
- Cooling towers
- Hospitals
- Hotels
- Horticulture
- Breweries
- Dairies
- Food processing
- Universities
- Acid restriction sites
- And more ...

# CHLORINE DIOXIDE GENERATORS

Modern-day chlorine dioxide water treatment using ClO<sub>2</sub>IX offers distinct advantages.



## ClO<sub>2</sub> – an effective, low concentration water disinfectant



ClO<sub>2</sub>IX is a tech-enabled chlorine dioxide solution that contains no chlorine, no ozone, has a high conversion rate (>75%), produces low concentration levels, is high purity (>98.5%), generated in a controlled reaction that is extremely safe, with no storage of ClO<sub>2</sub> because it is generated ON DEMAND.

### Beneficial properties of ClO<sub>2</sub>

- Effective over pH range of 2 – 10
- Doesn't produce THMs
- Reacts with odour-causing compounds
- Breaks down phenols
- Precipitates iron and manganese
- Can overcome organic loading
- Penetrates and destroys biofilm
- Potable and process water

### Conventional ClO<sub>2</sub> generation negatives

- Hard to make and storage is a problem
- UV light, heat and time degrade it
- Chemical mixing generators create by-products, can be corrosive, produce low yield, require accurate dosing
- Electromechanical generators suffer poor conversion, require complex pre-treatment, are maintenance heavy, require accurate dosing

## Introducing new generation, proven ClO<sub>2</sub>IX chlorine dioxide generators

Solves all of the problems and perceived limitations of conventional ClO<sub>2</sub> generation and come in a range of models to provide 5KG to 90+KG/day of ClO<sub>2</sub>.

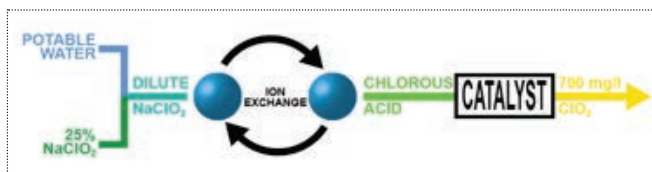


### Why is ClO<sub>2</sub>IX better?

ClO<sub>2</sub>IX is a tech-enabled chlorine dioxide solution that contains no chlorine, no ozone, has a high conversion rate, uses low concentration levels, produces low concentration solution, high purity ClO<sub>2</sub>, generated on a controlled reaction that is extremely safe, with no storage because it is generated ON DEMAND.

### How it works

ClO<sub>2</sub> is made through the formation of chlorous acid. The ClO<sub>2</sub>IX systems produce a solution of chlorous acid without residual Na<sup>+</sup> by using a special cation exchange resin in the H<sup>+</sup> form. This removes the Na<sup>+</sup> from sodium chlorite and replaces it with H<sup>+</sup> to form pure chlorous acid.



Once chlorous acid is formed, the reaction to ClO<sub>2</sub> can commence. Using catalytic technology, the ClO<sub>2</sub>IX generator converts almost instantaneously (>98.5%) of the chlorous acid to ClO<sub>2</sub>. The resultant 700 mg/l ClO<sub>2</sub> or Chlorate product contains no chlorine, no ozone and virtually no chlorite. Because of the ability for the ClO<sub>2</sub>IX system to dispense continuously on demand rather than batch

process (it is a duplex system), high quality, low concentration ClO<sub>2</sub> is produced on demand, reliably.

### Key system advantages

- Virtually zero chlorite and chlorate by-products in generation
- Super reliable chlorous acid generation
- Special catalytic technology in the Conversion Cartridge is more reliable, far quicker, safer and more efficient than older ClO<sub>2</sub> generator technology
- No excess acid is generated
- No chemical mixing is needed
- No electrochemistry is used
- ClO<sub>2</sub>IX can be dosed proportionally into the process water
- ClO<sub>2</sub>IX generators operate under pressure (pressurized line dosing enabled)
- Safer ClO<sub>2</sub> concentrations of less than 700 mg/l are produced with no need for storage

### Attractive features

- From 0.1 to 120g/day of ClO<sub>2</sub>
- Regenerable or Refillable IX
- Ideally suited for continuous production of ClO<sub>2</sub>
- Better for RO plants because pinholes are not created in membranes
- Precursor and ClO<sub>2</sub> occurs in water and only when water flows through the system
- Reliable monitoring and self-correction is built-in
- Rugged construction and components
- Permanent or mobile solution
- Emergency incident solution or flushing aid
- Finance available inclusive of first year's maintenance

### Common applications

#### Water distribution and Re-Use

All commercial and industrial sites where precise microbiological purity point-of-use water disinfection is required. Includes potable and process water. Includes water purification and water re-use.

#### Process water, especially in food production

Reliable, high purity water that can be recycled and re-used across multiple cycles minimising discharge and drawing of more expensive mains-water.

#### Rinsing and washing stations

Especially important where no taste, colour or residue is required and where hygiene has to be demonstrably maintained. Production plants wanting to re-use water and minimise drawing of more expensive mains-water.

#### Greenhouses and Horticulture

ClO<sub>2</sub>IX does not react with the fertilisers commonly used in commercial greenhouses and horticulture. The ClO<sub>2</sub>IX process produces a sodium-free product

that does not affect pH or reduce chelated iron. ClO<sub>2</sub>IX is ideal for reuse irrigation water.

#### Hospitals and care homes

Immuno-compromised patients are more susceptible to waterborne pathogens and bacteria. ClO<sub>2</sub> is a widely recognised pathogen control methodology and ClO<sub>2</sub>IX is an efficient, safe secondary disinfection option (especially relevant for sites with a no acid policy).

#### Hotels and Leisure

ClO<sub>2</sub> is a favoured disinfectant route for many hotel and leisure site operators because of the reliability of water purity, odour and taste considerations. ClO<sub>2</sub>IX is also produced on demand, dosed in a weak concentration and continuously available.

#### Reverse Osmosis (RO) plants

ClO<sub>2</sub> produced by ClO<sub>2</sub>IX systems is chlorine free, ozone free and will not attack TFC membranes. Cleaning cycles and energy consumption can be reduced greatly by feeding <0.2 mg/l in to the RO

feed water either continuously or intermittently as the application requires.

#### Closed water loops

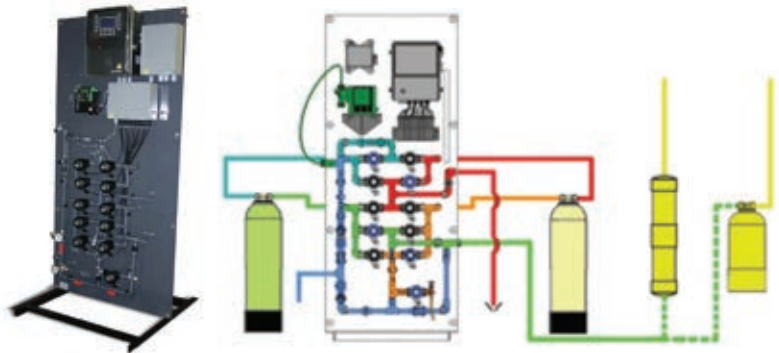
ClO<sub>2</sub>IX is ideal for chilled water loops to tackle contaminants and biofouling caused by system leaks, especially in large buildings. ClO<sub>2</sub>IX is chlorine, corrosion and bromine-free and good for manual or auto dosing. Pace the feed of biocide using low dilution, pure 700 mg/l ClO<sub>2</sub>IX. You can also shock-dose in to a sump tank. ClO<sub>2</sub>IX is free of metal ions.

#### Water tanks (commercial, domestic system, agricultural)

ClO<sub>2</sub> is an ideal disinfectant for cold water storage tanks where low pressure may exist and where bacteria harbouring biofilm can thrive. Chlorine in incoming mains water may be insufficient to deal with biofilm. ClO<sub>2</sub>IX can be an effective disinfectant to assist chlorine in mains water in protecting water safety and preventing biofilm regeneration once a tank is clean.

#### CLO<sub>2</sub>IX INDUSTRIAL

45g to 90Kg of ClO<sub>2</sub>  
 Model Variants: 9  
 Permanent plant  
 Ion Exchange is Replaceable or Regenerated  
 Supplied with Generator  
 Ion Exchange Tank x 2  
 Pre-Filter 10" housing 30 micron filter x 1  
 Pre-Filter 10" housing 5 micron filter x 1  
 Floor space (M): 1.11 x 1.11 x 1.88m (L x W x H)  
 Generator Dimensions (M): 0.76 x 0.76 x 1.88 (W x D x H)  
 Ion Exchange Tank Dimensions (M): 0.15 x 0.89 (Dia x H)  
 Catalyst Cartridge has to be purchased SEPARATELY  
 Lease finance available including Year 1 maintenance



##### Inlet Potable Water

A potable water source is required for the system.

##### Sodium Chlorite

A 25% NaClO<sub>2</sub> solution is diluted with potable water such that the resulting concentration of NaClO<sub>2</sub> is 1,250 mg/L.

##### Chlorous Acid

The dilute NaClO<sub>2</sub> flows through the ion exchange vessels where the NaClO<sub>2</sub> is converted to HClO<sub>2</sub> through the exchange of the N<sup>+</sup> in solution for the H<sup>+</sup> on the cation resin.

##### Chlorine Dioxide

The HClO<sub>2</sub> is converted to dilute ClO<sub>2</sub> in the catalyst cartridge which produces a low concentration solution (700 mg/L).

##### Regeneration

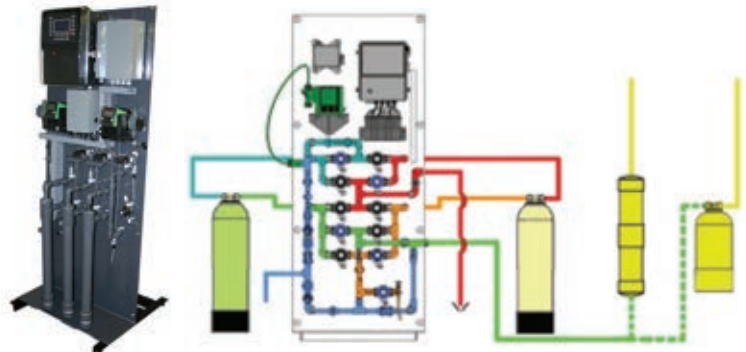
The H<sup>+</sup> ion in the regenerant acid forces the Na<sup>+</sup> ion off of the exhausted cation resin. The system is a duplex system meaning that one cation vessel is converting NaClO<sub>2</sub> to HClO<sub>2</sub> the other vessel is in regeneration. When the system determines that the first vessel is exhausted, the system automatically switches sides so that HClO<sub>2</sub> production is not interrupted. To increase efficiency, the Impulse Regeneration Method is employed.

##### Drain

The waste regenerant containing the Na<sup>+</sup> ions is flushed to drain as part of the regeneration process. The system also primes itself to drain.

#### CLO<sub>2</sub>IX MINI

45g to 55Kg of ClO<sub>2</sub>  
 Model Variants: 1  
 Permanent plant  
 Ion Exchange is Replaceable or Regenerated  
 Supplied with Generator  
 Ion Exchange Tank x 2  
 Pre-Filter 10" housing 30 micron filter x 1  
 Pre-Filter 10" housing 5 micron filter x 1  
 Floor space (M): 1.11 x 1.11 x 1.88m (L x W x H)  
 Generator Dimensions (M): 0.76 x 0.76 x 1.88 (W x D x H)  
 Ion Exchange Tank Dimensions (M): 0.15 x 0.89 (Dia x H)  
 Catalyst Cartridge has to be purchased SEPARATELY  
 Lease finance available including Year 1 maintenance



##### Inlet Potable Water

A potable water source is required for the system.

##### Sodium Chlorite

A 25% NaClO<sub>2</sub> solution is diluted with potable water such that the resulting concentration of NaClO<sub>2</sub> is 1,250 mg/L.

##### Chlorous Acid

The dilute NaClO<sub>2</sub> flows through the ion exchange vessels where the NaClO<sub>2</sub> is converted to HClO<sub>2</sub> through the exchange of the N<sup>+</sup> in solution for the H<sup>+</sup> on the cation resin.

##### Chlorine Dioxide

The HClO<sub>2</sub> is converted to dilute ClO<sub>2</sub> in the catalyst cartridge which produces a low concentration solution (700 mg/L).

##### Regeneration

The H<sup>+</sup> ion in the regenerant acid forces the Na<sup>+</sup> ion off of the exhausted cation resin. The system is a duplex system meaning that one cation vessel is converting NaClO<sub>2</sub> to HClO<sub>2</sub> the other vessel is in regeneration. When the system determines that the first vessel is exhausted, the system automatically switches sides so that HClO<sub>2</sub> production is not interrupted. To increase efficiency, the Impulse Regeneration Method is employed.

##### Drain

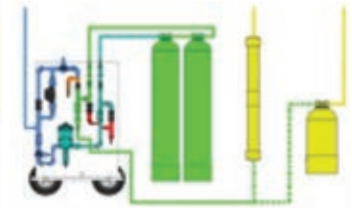
The waste regenerant containing the Na<sup>+</sup> ions is flushed to drain as part of the regeneration process. The system also primes itself to drain.

## ClO<sub>2</sub> IX PORTABLE REGENERATION (PRG)

225g to 9Kg of ClO<sub>2</sub>  
 Model Variants: 2  
 Potable Design  
 Regenerable Ion Exchange Vessels  
 Electric and Water Driven Pump Models  
 Easy to Manoeuvre



PTG-GRU Electric Pump Series



PTG-WTR Water-Driven Pump Series

### Inlet Potable Water

A potable water source is required for the system.

### Sodium Chlorite

A 25% NaClO<sub>2</sub> solution is diluted with potable water such that the resulting concentration of NaClO<sub>2</sub> is 1,250 mg/L.

### Chlorous Acid

The dilute NaClO<sub>2</sub> flows through the ion exchange vessels where the NaClO<sub>2</sub> is converted to HClO<sub>2</sub> through the exchange of the N<sup>+</sup> in solution for the H<sup>+</sup> on the cation resin.

### Chlorine Dioxide

The HClO<sub>2</sub> is converted to dilute ClO<sub>2</sub> in the catalyst cartridge which produces a low concentration solution (700 mg/L).

### Regeneration

The H<sup>+</sup> ion in the regenerant acid forces the Na<sup>+</sup> ion off of the exhausted cation resin. The system must be regenerated manually.

### Drain

The waste regenerant containing the Na<sup>+</sup> ions is flushed to drain during the regeneration process.

## ClO<sub>2</sub> PORTABLE REGENERATION (PRG)

225g to 9Kg of ClO<sub>2</sub>  
 Model Variants: 2  
 Potable Design  
 Replacement Cartridges – no acid on site  
 Electric and Water Driven Pump Models



PTG-GRU Electric Pump Series



PTG-WTR Water-Driven Pump Series

### Inlet Potable Water

A potable water source is required for the system.

### Sodium Chlorite

A 25% NaClO<sub>2</sub> solution is diluted with potable water such that the resulting concentration of NaClO<sub>2</sub> is 1,250 mg/L.

### Chlorous Acid

The dilute NaClO<sub>2</sub> flows through the ion exchange vessels where the NaClO<sub>2</sub> is converted to HClO<sub>2</sub> through the exchange of the N<sup>+</sup> in solution for the H<sup>+</sup> on the cation resin.

### Chlorine Dioxide

The HClO<sub>2</sub> is converted to dilute ClO<sub>2</sub> in the catalyst cartridge which produces a low concentration solution (700 mg/L).

### Drain

When the catalyst cartridges are changed, water is flushed through the system to drain.



	Ind IC-005	Ind IC-010	Ind IC-025	Ind IC-050	Ind IC-100	Ind IC-200	Ind IC-350	Ind IC-500	Ind IC-1000
<b>CIOX Chlorine Dioxide Generation</b>									
<b>Catalyst Size</b>	0.25	0.50	1.25	2.50	5.00	10.00	17.50	25.00	50.00
ClO <sub>2</sub> Production	L/min	L/min	L/min	L/min	L/min	L/min	L/min	L/min	L/min
Normal Flow Rate	0.25	0.50	1.25	2.50	5.00	10.00	17.50	25.00	50.00
Min Flow Rate	0.13	0.25	0.63	1.25	2.50	5.00	8.75	12.50	25.00
ClO <sub>2</sub> Solution Production	360	720	1,800	3,600	7,200	14,400	25,200	36,000	72,000
L Soln / day *	650 - 750	650 - 750	650 - 750	650 - 750	650 - 750	650 - 750	650 - 750	650 - 750	650 - 750
mg / L	>75% at 25oC	>75% at 25oC	>75% at 25oC	>75% at 25oC	>75% at 25oC	>75% at 25oC	>75% at 25oC	>75% at 25oC	>75% at 25oC
%	0.05 x 0.66	0.05 x 0.66	0.05 x 0.66	0.1 x 0.66	0.2 x 0.46	0.2 x 0.46	0.18 x 0.89	0.20 x 1.12	0.36 x 1.19
M **	0.76 x 0.76 x 1.88	0.76 x 0.76 x 1.88	0.76 x 0.76 x 1.88	0.76 x 0.76 x 1.88	0.76 x 0.76 x 1.88	0.76 x 0.76 x 1.88	0.97 x 0.97 x 2.03	0.97 x 0.97 x 2.03	0.97 x 0.97 x 2.03
M	0.15 x 0.89	0.20 x 1.11	0.20 x 1.11	0.20 x 1.11	0.36 x 1.65	0.36 x 1.65	0.46 x 1.65	0.50 x 1.58	0.91 x 1.83
M	1.11 x 1.11	1.22 x 1.22	1.22 x 1.22	1.27 x 1.27	1.68x 1.68	1.68x 1.68	2.06 x 2.06	2.24 x 2.24	3.15 x 3.56
<b>Operating Parameters</b>									
Max Feed Water Quality	<1,500	<1,500	<1,500	<1,500	<1,500	<1,500	<1,250	<1,100	<1,500
ppm TDS	3,000	3,000	3,000	3,000	3,000	3,000	2,500	2,200	3,000
Max Feed Water Conductivity	4.4 - 43.0	4.4 - 43.0	4.4 - 43.0	4.4 - 43.0	4.4 - 43.0	4.4 - 43.0	4.4 - 43.0	4.4 - 43.0	4.4 - 43.0
µS	10 to 32	10 to 32	10 to 32	10 to 32	10 to 32	10 to 32	10 to 32	10 to 32	10 to 32
Water Temperature Range	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
oC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Remote Access Ports</b>									
Ethernet Communication Port	1/2" MPT	1/2" MPT	1/2" MPT	1/2" MPT	1/2" MPT	1/2" MPT	1" MPT	1" MPT	1" MPT
System can connect to customer provided cell, modem or network	1/2" FPT	1/2" FPT	1/2" FPT	1/2" FPT	1/2" FPT	1/2" FPT	3/4" FPT	3/4" FPT	1" FPT
<b>Plumbing Connections to Generator</b>	1/2" FPT	1/2" FPT	1/2" FPT	1/2" FPT	1/2" FPT	1/2" FPT	3/4" FPT	3/4" FPT	1" FPT
Inlet Water	1/4" Tubing	1/4" Tubing	1/4" Tubing	1/4" Tubing	1/4" Tubing	1/4" Tubing	1/4" Tubing	1/4" Tubing	3/8" Tubing
Product HClO <sub>2</sub>	3/8" Tubing	3/8" Tubing	3/8" Tubing	3/8" Tubing	3/8" Tubing	3/8" Tubing	3/8" Tubing	3/8" Tubing	3/8" Tubing
Drain	1/4" FPT Plug	1/4" FPT Plug	1/4" FPT Plug	1/4" FPT Plug	1/4" FPT Plug	1/4" FPT Plug	1/4" FPT Plug	1/4" FPT Plug	1/4" FPT Plug
Inlet NaClO <sub>2</sub>	172	192	192	192	192	192	294	318	318
Inlet Regeneration	90-240 VAC 2.7A 60/60 Hz	90-240 VAC 2.7A 50/60 Hz	90-240 VAC 2.7A 50/60 Hz	90-240 VAC 2.7A 50/60 Hz	90-240 VAC 2.7A 50/60 Hz	90-240 VAC 2.7A 50/60 Hz	90-240 VAC 2.7A 50/60 Hz	90-240 VAC 2.7A 50/60 Hz	90-240 VAC 2.7A 50/60 Hz
Compressed Air	Filtered and Regulated Air	Filtered and Regulated Air	Filtered and Regulated Air	Filtered and Regulated Air	Filtered and Regulated Air	Filtered and Regulated Air	Filtered and Regulated Air	Filtered and Regulated Air	Filtered and Regulated Air
<b>Installation Electrical Requirements</b>									
Compressed Air Requirements	7	7	7	7	7	7	7	7	7
Air Pressure	2.76 - 7.00	2.76 - 7.00	2.76 - 7.00	2.76 - 7.00	2.76 - 7.00	2.76 - 7.00	2.76 - 7.00	2.76 - 7.00	2.76 - 7.00
<b>Installation Plumbing Requirements</b>									
Inlet Water Pressure	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72
Bar	Atmospheric	Atmospheric	Atmospheric	Atmospheric	Atmospheric	Atmospheric	Atmospheric	Atmospheric	Atmospheric
AP Across System	25% Active	25% Active	25% Active	25% Active	25% Active	25% Active	25% Active	25% Active	25% Active
Drain Pressure	10% or 31.45%	10% or 31.45%	10% or 31.45%	10% or 31.45%	10% or 31.45%	10% or 31.45%	10% or 31.45%	10% or 31.45%	10% or 31.45%
<b>Precursor Requirements</b>									
NaClO <sub>2</sub>	35% (softened water instead of HCl)	35% (softened water instead of HCl)	35% (softened water instead of HCl)	35% (softened water instead of HCl)	35% (softened water instead of HCl)	35% (softened water instead of HCl)	35% (softened water instead of HCl)	35% (softened water instead of HCl)	35% (softened water instead of HCl)
Regenerant	20 ClO <sub>2</sub> Produced	20 ClO <sub>2</sub> Produced	20 ClO <sub>2</sub> Produced	20 ClO <sub>2</sub> Produced	20 ClO <sub>2</sub> Produced	20 ClO <sub>2</sub> Produced	20 ClO <sub>2</sub> Produced	20 ClO <sub>2</sub> Produced	20 ClO <sub>2</sub> Produced
Regenerant H <sub>2</sub> SO <sub>4</sub> (optional)	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced
<b>Precursor Usage</b>	21 ClO <sub>2</sub> Produced	21 ClO <sub>2</sub> Produced	21 ClO <sub>2</sub> Produced	21 ClO <sub>2</sub> Produced	21 ClO <sub>2</sub> Produced	21 ClO <sub>2</sub> Produced	21 ClO <sub>2</sub> Produced	21 ClO <sub>2</sub> Produced	21 ClO <sub>2</sub> Produced
HCl 31.45%	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced	6 ClO <sub>2</sub> Produced
HCl 10%	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately
H <sub>2</sub> SO <sub>4</sub> 35% (optional)	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately
Catalyst Cartridge	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately	Order Separately

\* At Normal Flow Rate  
 \*\* Catalyst May Need to be Mounted

#### ClO<sub>2</sub>JX Chlorine Dioxide Generation

##### Catalyst Size

ClO<sub>2</sub> Production Kg / day

Normal Flow Rate mL / min

Min Flow Rate mL / min

ClO<sub>2</sub> Solution Production L Soln / day

ClO<sub>2</sub> Concentration mg/L

ClO<sub>2</sub> Conversion %

Catalyst Dimensions (Dia x H) M \*\*

Generator Dimensions (W x D x H) M

Ion Exchange Tank Dimensions M

Floorspace M

Operating Parameters

Max Feed Water Quality ppm TDS

Max Feed Water Conductivity µS

Ambient Temperature Range °C

Water Temperature Range °C

Remote Access Ports

Ethernet Communication Port Yes

System can connect to customer provided cell modem or network Yes

Plumbing Connections to Generator

Inlet Water 3/8" MPT

Product HClO<sub>2</sub> 3/8" FPT

Drain 3/8" FPT

Inlet NaClO<sub>2</sub> 3/8" FPT

Inlet Regeneration 1/4" Tubing

Compressed Air 1.25

Weights (Shipping) Inc packaging 90-240 VAC 2.7A 50/60 Hz

Installation Electrical Requirements

Compressed Air Requirements

Air Pressure

Installation Plumbing Requirements

Inlet Water Pressure Bar

ΔP Across System Bar

Drain Pressure

Precursor Requirements

NaClO<sub>2</sub> %

Regenerant %

Regenerant H<sub>2</sub>SO<sub>4</sub> (optional) %

Precursor Usage

NaClO<sub>2</sub>: 7.5% L / Kg

HCl: 31.45% L / Kg

HCl: 10% L / Kg

H<sub>2</sub>SO<sub>4</sub>: 35% (optional) L / Kg

Catalyst Cartridge

	MINI G-015	MINI G-030	MINI G-060	MINI G-120
ClO <sub>2</sub> Production	15.00	30.00	60.00	120.00
Normal Flow Rate	15.00	30.00	60.00	120.00
Min Flow Rate	15.00	15.00	30.00	60.00
ClO <sub>2</sub> Solution Production	21.6	43.2	86.4	172
ClO <sub>2</sub> Concentration	650 - 750		650 - 750	
ClO <sub>2</sub> Conversion	>75% at 25°C		>75% at 25°C	
Catalyst Dimensions (Dia x H)	0.04 x 0.35		0.04 x 0.35	
Generator Dimensions (W x D x H)	0.76 x 0.76 x 1.88		0.76 x 0.76 x 1.88	
Ion Exchange Tank Dimensions	0.76 x 0.76		Ion Exchange Tanks Sold Separately	
Floorspace	0.76 x 0.76		0.76 x 0.76	
Operating Parameters				
Max Feed Water Quality	<1,500		<1,500	
Max Feed Water Conductivity	3,000		3,000	
Ambient Temperature Range	4.4 - 43.0		4.4 - 43.0	
Water Temperature Range	10 to 32		10 to 32	
Remote Access Ports				
Ethernet Communication Port	Yes		Yes	
System can connect to customer provided cell modem or network	Yes		Yes	
Plumbing Connections to Generator				
Inlet Water	3/8" MPT		3/8" MPT	
Product HClO <sub>2</sub>	3/8" FPT		3/8" FPT	
Drain	3/8" FPT		3/8" FPT	
Inlet NaClO <sub>2</sub>	3/8" FPT		3/8" FPT	
Inlet Regeneration	1/4" Tubing		1/4" Tubing	
Compressed Air	1.25		1.25	
Weights (Shipping) Inc packaging	90-240 VAC 2.7A 50/60 Hz		90-240 VAC 2.7A 50/60 Hz	
Installation Electrical Requirements				
Compressed Air Requirements				
Air Pressure				
Installation Plumbing Requirements				
Inlet Water Pressure	2.76 - 7.00		2.76 - 7.00	
ΔP Across System	1.72		1.72	
Drain Pressure	Atmospheric		Atmospheric	
Precursor Requirements				
NaClO <sub>2</sub>	7.5% Active		7.5% Active	
Regenerant				
Regenerant H <sub>2</sub> SO <sub>4</sub> (optional)				
Precursor Usage				
NaClO <sub>2</sub> : 7.5%	26 ClO <sub>2</sub> : Produced		26 ClO <sub>2</sub> : Produced	
HCl: 31.45%				
HCl: 10%				
H <sub>2</sub> SO <sub>4</sub> : 35% (optional)				
Catalyst Cartridge				
Order: Separately	Order Separately	Order Separately	Order Separately	Order Separately

\* At Nominal Flow Rate

\*\* Catalyst May Need To Be Mounted

## A Marlowe Critical Services company

WCS Group is the 'Water Treatment and Hygiene' division of the Marlowe Critical Services Group owned by parent Marlowe plc.

Marlowe plc provides one access point for specialist 'highest standards' across;

**'Compliance & Facilities Software', 'Health and Safety Compliance', 'Retained HR, Employment Law & Health and Safety', 'Occupational Health Services', 'eLearning and Training Services', 'Fire Safety & Security Services', 'Water Treatment & Hygiene Services', 'Air and Ventilation Compliance', 'Asbestos Management Services'**

All nine divisions can be accessed singularly or in combination.

The Group shares many common customers and collectively employs 2,200+ specialists, servicing around 30,000 customers.

**Compliance. Assured.**

## Further reading

**Protect your water**

### Water safety, disinfection and secondary disinfection

Contamination risk from incoming water and water distribution systems **INSIDE** your building

**Choosing an appropriate solution**

Adherence to the UK, Northern Ireland and Scotland Drinking Water Regulations  
Compliance with HCR/LRA  
Meeting WHO Guidelines for Drinking Water Quality  
Protecting patients, your workforce and building visitors

**Water Safety | Disinfection/Secondary Disinfection Overview**

**Fact Sheet | Water safety and disinfection**

**WCS Group**  
Safe Efficient Compliance  
MARLOWE Critical Services

### Ultralox40®

Approved hypochlorous acid, the active form of chlorine that works as a biocide

**Ultralox 40®**  
HOCl active form of chlorine as a biocide  
Portable and process water  
Article 61 compliant  
DfE approved  
Used widely in the NHS

**Suitable for...**

- Hot / cold systems
- System purges
- Hospitals
- Hotels
- Care homes
- Schools
- Small offices
- Legionella control
- Domestic systems
- Drinking water
- Breweries
- Dairies
- Food processing
- CIP systems
- Laundry centres
- Poultry houses
- And more...

**Low concentration, highly effective colourless biocide**

Ultralox40® is an extremely efficacious fast-acting stable biocidal hypochlorous acid or HOCl. HOCl is manufactured naturally by white blood cells (neutrophils) as part of the body's defence against pathogens. HOCl2 is also 'hypochlorous acid' (HOCl) the form of chlorine that is most effective as a biocide. It breaks down biofilm and is highly effective against pathogens and bacteria. Particularly for systems with low and high pressure, high bacteria counts, embedded or systematic biofilm challenges, require repeated flushing and one-off disinfections and therefore have requirements for secondary disinfection.

**Small and medium applications**

Delivered in 25L, 200L or 1,000L package sizes. Can be dosed into incoming mains or a tank, via fixed or mobile delivery and control systems that can be purchased or hired. The standard mobile or free-standing skid mounted systems can be modified and are suitable for systems up to 40m<sup>3</sup>/day. 200L systems are better suited to go/don't-go requirements.

Consultants are BS EN approved (BS EN 9001:2007 and BS EN 9120:07)  
Appearance: colourless  
Sig. 01 07 01001 1  
Inhibited dose rate: 0.2ppm - 5.0ppm (higher for shock-dosing)  
Drinking Water Hygiene: Approved (DfE) (LRA) under Regulation 21 (LRA of the Water Supply (Water Quality) Regulations 2000 SI No 3074, and The Water Supply (Water Quality) Regulations 2003 SI No 994 (WQ3).

**Water Safety | Disinfection\_Ultralox Fact Sheet**

**Fact Sheet | Water safety and disinfection**

**WCS Group**  
Safe Efficient Compliance  
MARLOWE Critical Services

### GENOX

Produces low hazard, HOCl biocide NEUTHOX® for primary and secondary disinfection.

**GENOX**  
Safe alternative to ClO<sub>2</sub>  
Low hazard HOCl biocide  
Cost effective - from a penny/m<sup>3</sup> of treated water  
DfE approved  
HSC242 - HOCl is the most effective form of Chlorine  
Used widely in the NHS

**Suitable for...**

- Hot / cold systems
- Primary disinfection
- Secondary disinfection
- Hospitals
- Hotels
- Care homes
- Schools
- Legionella control
- Drinking water
- Horticulture
- Breweries
- Dairies
- Food processing
- And more...

**Cost effective, safe and powerful biocide for large and small systems**

A specially developed GENOX Generator System uses electrolysis of saline to generate a biocide (NEUTHOX®) on demand. NEUTHOX® is a powerful, proven disinfectant that controls biofilm and destroys Legionella and Pseudomonas, and is effective even at 40-20°C. The active ingredient in NEUTHOX® is hypochlorous acid (HOCl) which is produced naturally in the human body within white blood cells to fight infection.

HOCl is lethal to pathogens, it is low hazard, easy to handle and easy to dose. Generation is inexpensive and HOCl is stored securely in a drum. The unit merely requires water, Genox salt and electricity.

A wide range of units are available and all are compact allowing for simple site fitting to areas with small available space footprints. Horticultural units are also available.

**How it works**

HOCl renders bacteria inactive and activates its natural cell death process. On breaching the bacteria cell wall, it interacts chemically with the cell's proteins, attacking the cell's DNA and causing the whole cell to die. The cell fuses with water and acidic fluid and dies. Once the bacteria has been destroyed, its co-dependent relationship with the biofilm is disrupted and the biofilm begins to break up, bringing Legionella and Pseudomonas levels back to permanently under control to acceptable levels.

NEUTHOX® is approved with food and has no impact on water pH.

**Water Safety | Disinfection\_Genox Fact Sheet**

[www.wcs-group.co.uk](http://www.wcs-group.co.uk)

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For a full list of our accreditations please visit: [www.wcs-group.co.uk/accreditations-respository](http://www.wcs-group.co.uk/accreditations-respository)