

HALOX TECHNICAL DATA SHEET

Halox H1000SRE Chlorine Dioxide (ClO₂) Generator



SYSTEM DESCRIPTION

The Halox H1000SRE is a new generation of Halox chlorine dioxide generator. Based on proven Halox technology, the generator delivers high reliability and efficiency, reduced maintenance and simplified operation. Halox H1000SRE ClO₂ generators are CE Marked and conform to UL 61010A-1 and CSA C22.2 NO. 1010.1 for electrical safety. The Halox H1000SRE directly converts sodium chlorite solutions to chlorine dioxide via a patented* electrochemical process. This new Halox H1000SRE offers the following improvements and performance enhancements:

- State-of-the-art CPU and power supply designs
- Automatic flow rate control
- Wide operating voltage range and feed water temperature range

The heart of the Halox system is a patented electrochemical cassette that directly converts sodium chlorite to chlorine dioxide. When operated according to Halox guidelines, this Halox equipment generates a safe, dilute solution at a controlled, measurable rate that contains up to 550 ppm of chlorine dioxide. For specific sizing concentrations, please contact Halox Technical Service.

A single precursor, sodium chlorite (NaClO₂), is injected from an external source by means of an internal peristaltic metering pump. It is then converted inside the cassette to ClO₂. The amount produced varies with the number of cassettes installed. Thus, ClO₂ is produced 'on demand.' In some applications direct dosing is possible. In others, storage and/or dosing equipment may be utilized.

A basic requirement of any electrochemical technology is softened feed water. For this reason, the Halox H1000SRE has a built-in water softener. Softener salt is added to an external brine tank. The softener is controlled by the system's microprocessor and regenerates automatically. The system also requires an externally-mounted prefilter assembly (provided with the unit). Feed water with hardness above 320 mg/L (as CaCO₃) must be pre-softened. Other

feed water requirements are described in the Operator's Manual.

Dosing requirements vary by application. The amount of ClO₂ required in a particular application depends on system demand make-up rate, and desired ClO₂ residual. For the highest accuracy and control, the Halox generator should be operated with the Halox ClO₂ Measurement and Control System (MAC). Alternately, an internal timer, an external timer or an external controller may be used. Please contact Halox for specific control strategies.

*Covered by U.S. Patent Nos. 5,419,816 / 5,609,742 / 5,705,050 / 6,024,850 / 6,402,916 and foreign patents. Other U.S. and foreign patents pending

OPERATING PARAMETERS

Number of Cassettes.....	1 to 4
Production of ClO ₂	0.26 to 1.06 lb/day (5 to 20 gm/hr)
Generator Efficiency	93.75% average
Operating Flow Rates	
ClO ₂ Product.....	2.4 to 9.5 gal/hr (9 to 36 L/hr)
Catholyte Product	0.32 to 1.3 gal/hr (1.2 to 4.8 L/hr)
Feed Water	2.7 to 10.8 gal/hr (10.2 to 40.8 L/hr)
Replacement Schedule	
Cassettes.....	2,000 operating hours*
Pump Tubing	2,000 operating hours
Prefilter.....	2,000 oper. hours or as required

FEEDWATER REQUIREMENTS

Hardness	<320 mg/L (as CaCO ₃)
Temperature	41 to 113 °F (5 to 45 °C)
Feed Pressure	40 psi (2.8 kg/cm ²) minimum
Conductivity (77°F/25°C) ...	<1000 µS/cm
Alkalinity (as CaCO ₃).....	<300 mg/L
Dissolved (Free) CO ₂	<50 mg/L
Fe and Mn	<1.0 mg/L combined
Dissolved Organics	<1.0 mg/L TOC
pH	6.0 to 8.5

DIMENSIONS

Depth.....	22 in (56 cm)
Width	24 in (61 cm)
Height.....	47 in (119 cm)
Operational Weight.....	180 lb (82 kg)

SYSTEM SPECIFICATIONS

Softener Resin Capacity.....	11 to 15 lb (5 to 7 kg)
Brine Tank Capacity	5 gal (19 L)
Pre-Treatment Filter	20 µm
Metering Pump	Peristaltic

*2000 hours is the estimated lifetime operating under optimum conditions in accordance with recommended Halox specifications. A normal variation of minus 10 to 15% (i.e. 1700 to 1800 operating hours) is to be expected.

PRECURSOR SPECIFICATIONS

Sodium Chlorite Solution*

NaClO ₂	24.25 to 25.75 wt %
NaCl	< 3.0 wt %
NaClO ₃	< 0.7 wt %

*Technical grade NaClO₂ can be diluted as low as 4 wt % for use with the Halox H1000SRE.

Softener Salt (Pellets only; No additives)

NaCl	> 99.85%
Total Metals (Cu,Fe,Pb)	< 1.0 mg/L
Na ₂ S ₂ O ₅ and NaHSO ₃	0%

PLUMBING REQUIREMENTS

	<u>Diameter</u>	<u>Material</u>
Feed Water	1/2 in OD	PE tubing
Catholyte Stream	3/8 in OD	PE tubing
ClO ₂ Product.....	3/8 in OD	FEP tubing
Sodium Chlorite Inlet.....	1/4 in OD	PE tubing
Brine Draw	3/8 in OD	PE tubing
Brine Tank Overflow	1/2 in ID	PVC tubing
Soft Water Reject.....	1/2 in OD	PE tubing
Leak Detector Drain	1/4 in OD	PE tubing

ELECTRICAL REQUIREMENTS

115/230 VAC, 50/60 Hz, 1 Ø, 20/10 AMP
 Note: Halox H1000SRE units are dual voltage.
 Power Consumption: 200 to 800W

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OPERATING ENVIRONMENT

Installation Location..... Indoors, clean and dry.
 Ambient Temperature..... 35 to 110 °F (1.7 to 43 °C)

LOCATION OF SYSTEM

Locate system in a dry, level area close to the point of application. Allow access for service.

For injection of chlorine dioxide solution the system back-pressure must be < 5 psi (0.35 kg/cm²)

When product delivery pressure requirements exceed the above specification, external dosing equipment is needed. Halox provides the Halox ClO₂ Dosing Package, appropriately sized for the Halox generator.

1. ClO₂ product
2. Catholyte product
3. Brine draw
4. Soft water reject
5. Feed water
6. NaClO₂ inlet
7. Alarm
8. Booster pump
9. Remote ON/OFF
10. Power in
11. Leak alarm drain



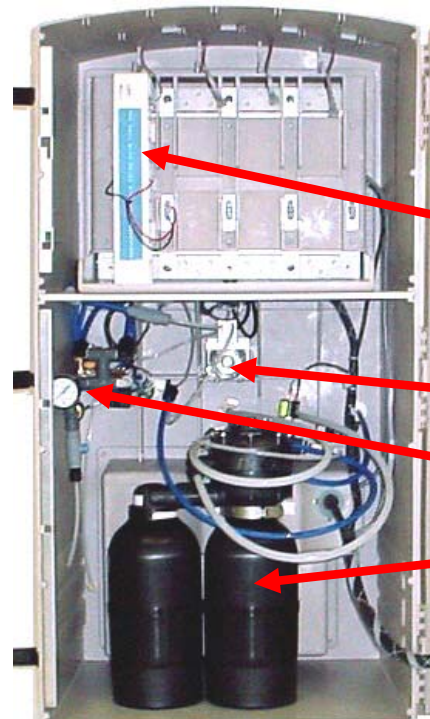
EXTERIOR – REAR VIEW



Externally-mounted Prefilter



External brine tank



EXTERIOR –FRONT VIEW

Cassette(s)

Pump

Flow Valve with gauge

Softener