MAKING BLEACH MADE EASY

MICROCLOR®
On-Site Sodium Hypochlorite Generation
As concerns mount and regulations change regarding the safety and security of using chlorine gas for water disinfection, many utilities are choosing sodium hypochlorite (bleach) as a safer disinfection alternative. Once the decision to convert to a safer alternative has been made the question remains whether to purchase or produce sodium hypochlorite. Microclor® OSHG is the right choice to meet your disinfection requirements. The items listed below are the most significant of the many benefits realized by upgrading to Microclor® OSHG. We encourage you to contact the many utilities currently using Microclor® OSHG for further evidence supporting the decision to purchase a Microclor® OSHG.

**Safety**
Microclor’s® OSHG dilute (0.8%) hypochlorite solution is below the hazardous material concentration threshold of 1%. This reduces operator HazMat exposure and eliminates the need for diluting commercial hypochlorite to compensate for degradation which results in inconsistent solution strength.

**Fewer Deliveries**
The only raw materials required for the OSHG process are salt and water. This will reduce vendor deliveries by about 66% compared to commercial bulk hypochlorite. Less truck traffic through the community and at the facility will reduce the potential for accidents and eliminate the associated carbon footprint. This furthers efforts towards Green Facility Management and improves the water security profile.

**Continuity of Operations**
Microclor® OSHG will enable storage of larger quantities of raw materials (salt) necessary for your disinfection process. This will result in a more sustainable and robust treatment facility better able to withstand the demands imposed by a natural disaster or health emergency.

**Reduced Operational Costs**
Since all chlorine compounds are derived from salt, electrolytic conversion on-site will result in significant savings to the owner. Typically, it costs 50-70% less to produce sodium hypochlorite as compared to buying it.
Microclor® OSHG is modular in design and utilizes standard components which are easily customized to meet a wide range of requirements.

A typical Microclor® OSHG system includes:
- Stainless Steel Skid Assembly
- Water Softener
- Brine Tank
- Brine Pump
- Electrolytic Cells
- Skid-mounted PLC Control Panel
- D.C. Rectifier
- Hypochlorite Storage Tank
- Hypochlorite Metering Pump
- Hydrogen Dilution Blower

Capacities: 20-2400 pounds per day chlorine equivalent
Control: Automatic, regulated by storage tank level
Percentage Sodium Hypochlorite: 0.8% +/- 0.05%
Consumables per Pound of Chlorine Produced: ~ 3 lbs salt, 2 kWh(AC), 15 gallons water
Water Input: Potable water, 30-80 PSI, 45°F-85°F (5°C-27°C)
Salt: 99.7% pure dry weight Morton White Crystal or equivalent
Power: 208V/240V, 1 Ph: 20-60 ppd; 208V, 3 Ph: 40-80 ppd; 480V, 3 Ph: 20-2400 ppd
Control Cabinet: 304 stainless steel NEMA 4X
Operator Interface: 6” color touchscreen
Programmable Logic Controller: Allen Bradley® MicroLogix™ 1400

Actual consumption can vary by +/-10% based upon site specific conditions. Operation above 80°F will result in lower efficiencies.
Since 1988 On-Site Hypochlorite Generation has been recognized as an effective method for disinfection of water. Process Solutions, Inc. has dramatically improved the technology into the robust and reliable design of the patented (www.psipatents.com) Microclor® OSHG system.

The patented Microclor® OSHG design is the result of over twenty-five years of experience in the manufacturing, installation and servicing of hypochlorite generation equipment. Advancements in system safety and ease of operation make Microclor® OSHG the overwhelming choice for water treatment professionals.

The combined benefits of the following unique features make Microclor® OSHG the most resilient and durable system available today:

- Vertical Cell Arrangement
- Multiple Cell Configuration
- Direct Hydrogen Management
- Continuous Process Control
- Full-Wave DC Power
- Compact Cell Design
- High-Velocity Electrolyte Circulation

**VERTICAL/MULTI CELL CONFIGURATION**

The Microclor® OSHG vertical cell arrangement is the most significant of the many features that distinguish it from the earlier generations of equipment.

**DIRECT HYDROGEN MANAGEMENT**

The electrolytic cells are configured in a vertical array and vented directly to atmosphere. This prevents the chance of overpressurization by releasing all hydrogen directly from each cell. Other systems use the storage tanks as hydrogen separators which can contribute to excessive cell pressure and vibration in the discharge piping.

**CONTINUOUS PROCESS CONTROL**

Microclor® OSHG integral brine pump is controlled by the PLC to optimize salt conversion efficiency and hypochlorite production. Automating precise brine control reduces operator intervention and improves system effectiveness.

**FULL-WAVE DC POWER**

Automated brine control allows full-wave rectification which greatly reduces excess heat and the number of components necessary in the rectifier. This reduces facility HVAC loads and improves system reliability.

**COMPACT CELL DESIGN**

The cell’s vertical orientation not only allows better hydrogen separation but is also more compact, resulting in a more space-efficient footprint. The clear acrylic cell body supports the electrode array and eliminates the need for internal baffles and fasteners, reducing maintenance and repair costs over the life of the system.

**HIGH-VELOCITY ELECTROLYTE CIRCULATION**

The hydraulic lift created by the hydrogen separation circulates electrolyte through the cell loop at 3 fps. This reduces the requirement for cell cleaning and minimizes heat accumulation in the cell.
Making Bleach Made Easy

“...The simplicity of the Microclor® OSHG system never ceases to impress me. Based on my prior experience with on-site hypochlorite generation, I never knew a system could be so easy to operate and maintain. Love it.”

Leo Williams, Mountain Regional Water SSD Operations Superintendent

Advantages:
- Safest OSHG Design
- Low-Cost, High-Quality Hypochlorite
- Vertical Cell Design
- Multi-Cell Configuration
- Immediate/Continuous Hydrogen Removal
- No Hydrogen Containment
- Small Footprint
- Low-Maintenance
- 24-Hour Service
Service and Support
Process Solutions provides world class service and technical support for its line of Microclor® OSHG products. Spare parts, peripheral components, troubleshooting advice and field service are all elements of a robust customer orientation that Process Solutions possesses to ensure that our customers are “making water”.

LEARN MORE ABOUT Microclor® OSHG
www.4psi.net

Microclor® LC-40S, 40 Pounds Per Day