PureClO₂® Electrochemical Generator
Model HP-20

PureClO₂® Generator: Model HP-20
Using PureCide® as a single liquid precursor, patented electrochemical cells produce 99.5% pure, chlorine free ClO₂ solution. PureLine’s innovative design delivers ClO₂ solution on-demand safely and efficiently without the need for an external chlorine dioxide storage tank. The remote on-off capability offers process feedback control. A proportional-integral-derivative (PID) control action accurately maintains set chlorine dioxide concentration. Other features include a programmable logic controller (PLC) with a color touch-screen operator interface terminal (OIT) and integrated distributed control system (DCS) capability.

REACTION CHEMISTRY:
2NaClO₂ + 2H₂O → 2ClO₂ + 2NaOH + H₂

Pure Advantages

» Single liquid chemical precursor PureCide®
» Produces 99.5% pure ClO₂
» Recirculating anolyte loop
» Long-life electrolytic cells, no cartridges
» No chlorine, bromate, perchlorate, chlorite or chlorate in the product
» ClO₂ delivery up to 150 psi
» No ancillary equipment
» No batch tanks required

Pure Chemistry

PureLine’s patented ClO₂ technology offers many benefits:
» Does not form THMs
» EPA/RMP & OSHA PSM compliance
» Meets crypto and DBP requirements
» Efficacy over broad pH range
» Iron & manganese reduction
» Taste & odor control
» Removes color
» TOC reduction
» CT credit
» Low capital & operating costs
PureClO₂ Electrochemical Chlorine Dioxide Generator
Gas Eductor Process Flow Diagram

Available Capacities
1, 3, 10, 20, 40 & 100 lbs/day

Precursors
PureCide E & Electricity

Reaction Chemistry

$2\text{NaClO}_2 + 2\text{H}_2\text{O} \rightarrow 2\text{ClO}_2 + 2\text{NaOH} + \text{H}_2$

Electricity
PureClO₂ Electrochemical Chlorine Dioxoide Generators
Models HP-20

Notice:
Please complete a PureLine site audit and contact your PureLine representative to review your application’s piping and quill dimensions for possible back-pressure limitations prior to your planned installation.
**GENERATOR SPECIFICATIONS:**

- **Capacity:** Up to 20 lbs/day ClO₂ solution variable delivery
- **Chemical Usage:** PureCide® E 6 lbs/lb of ClO₂
- **Co-Products:** 20% NaOH solution, H₂ safely diluted to <0.5 vol%
- **Electrical Power:** 220VAC, 1PH, 30A service
- **Electrochemical Cells:** Two 10 PPD cells
- **Water Usage:** 900 gals/day @ 50 psi minimum for RO water and absorber column @ 3000 ppm concentration
- **ClO₂ Injection:** Up to 2 internally-housed, independently-controlled distribution pumps capable of delivering ClO₂ solution up to 150 psi

**PROCESS INTERFACE:**

- **PLC & OIT:** Mitsubishi FX-3UC and C-more EA7 series color touch screen
- **Remote Start Stop:** Via external contact for the distribution pump
- **Flow Pace Mode:** Distribution pump output varies to maintain process set-point via an external 4-20mA signal
- **Outputs:** Alarm and running status via Form-C dry contact

**SAFETY INTERLOCKS:**

- **Run Permissive Interlock:** Customer controlled interlock to shut down entire system
- **ClO₂ Gas/Air Flow:** Shutdown upon insufficient air flow through stripper column
- **Low Anolyte Flow:** Shutdown if anolyte loop flow rate is insufficient
- **Low RO Water Pressure:** Shutdown on loss of RO water to catholyte loop
- **H₂ Blower Failure:** Shutdown ClO₂ production on loss of hydrogen dilution
- **High Cell Temperature:** Shutdown ClO₂ production on cell temperature above 145° F
- **Cell Amperage:** Shutdown ClO₂ production if cell amperage out of specification

**DIMENSIONS:**

- **Overall:** 64” W X 77” H X 30” D
- **Weight:** 1300 lbs

**ENCLOSURES:**

- **Process Cabinet and Electrical Enclosure:** Powder-coated steel sheet on powder-coated steel frame

**PROCESS CONNECTIONS:**

- **PureCide® E Inlet:** 1/2” FPT Sch.80 PVC stainless steel reinforced
- **RO Waste Outlet:** 1/2” FPT Sch.80 PVC stainless steel reinforced
- **Absorber Drain Outlet:** 1” FPT Sch.80 PVC stainless steel reinforced
- **Anolyte Effluent Outlet:** 1” FPT Sch.80 PVC stainless steel reinforced
- **Catholyte Effluent Outlet:** 1/2” FPT Sch.80 PVC stainless steel reinforced
- **Distribution Pump Outlet:** 1” FPT Sch.80 PVC stainless steel reinforced
- **Hydrogen Vent:** 1.5” Sch.80 PVC pipe
- **ClO₂ Vent:** 2” Sch.80 PVC pipe