# RIO ZUNI™
## ON-SITE CHEMICAL GENERATOR

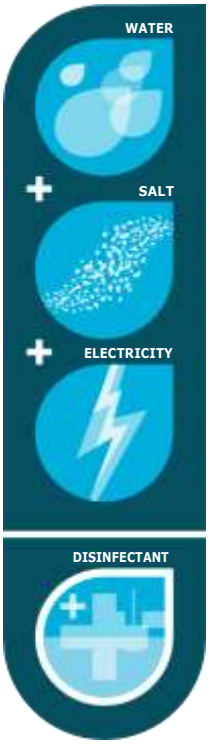

The MIOX RIO Zuni is a compact, easy to install and operate on-site chemical generator designed for minimal maintenance and ultimate simplicity. Similar to the thousands of larger MIOX installations around the world, this small-scale chemical generator can be retrofitted into existing infrastructures. Just load with salt and let the RIO Zuni do the dirty work for you!

## APPLICATIONS

- COOLING WATER
- DRINKING WATER
- WASTEWATER
- PROCESS WATER
- CLEAN-IN-PLACE (CIP)
- POOLS & SPAS

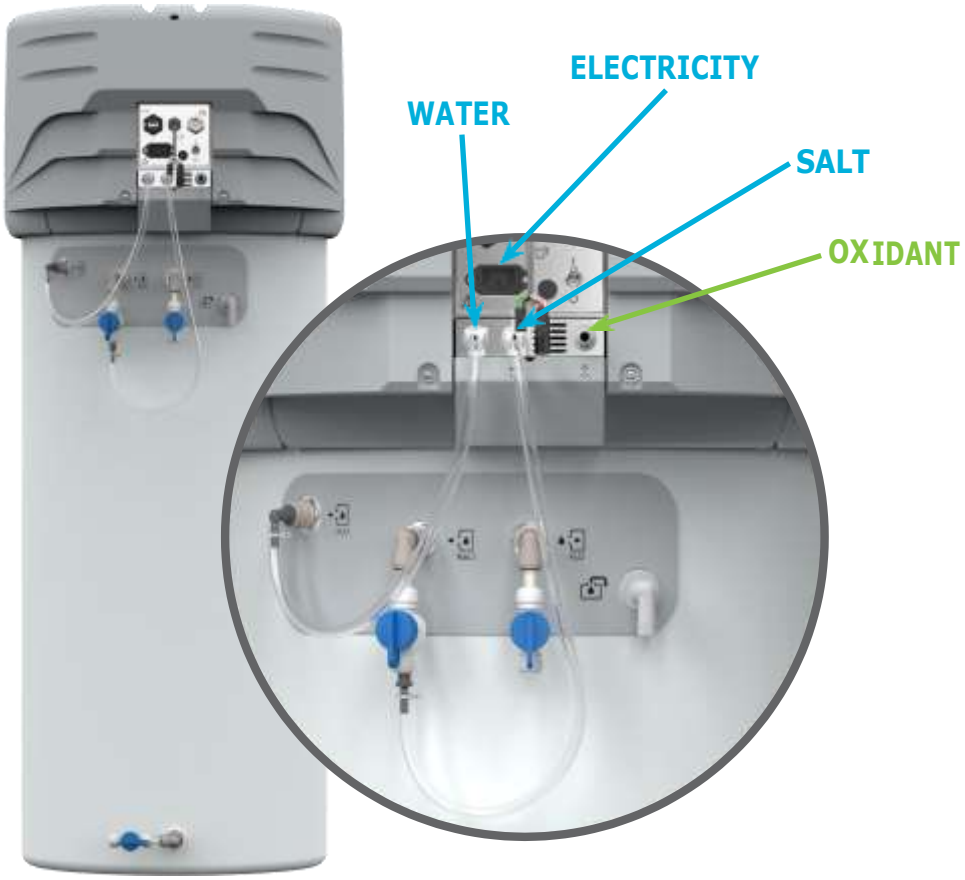
## INDUSTRIES SERVED

- WATER UTILITIES
- COMMERCIAL & INSTITUTIONAL
- HEAVY INDUSTRIAL
- FOOD & BEVERAGE
- OIL & GAS




### ELECTROLYSIS PROCESS

**The electrolytic cell of a MIOX on-site generator uses common salt combined with water and electricity to generate high performance disinfection chemistries, eliminating the need to transport and store hazardous chemicals.**




## ON-SITE CHEMICAL GENERATION

The MIOX RIO Zuni produces Mixed Oxidant Solution (MOS) on-site, on-demand using only salt, water and electricity. This process offers customers safe, effective, maintenance-free water treatment.

## CONSUMABLES

### WATER

The first feedstock required to operate a MIOX on-site generator is water. The MIOX RIO Zuni can operate on water hardness up to 170 mg/L or 10 grains per gallon.

### SALT

Salt is the second feedstock required. MIOX recommends granulated food grade salt which is commonly sold in 50 to 100 lb sacks or delivered in bulk to your site.

### ELECTRICITY

Electricity is the third feedstock required and is sold by kW-Hr.

## SPECIFICATIONS

| | RIO Zuni 1 PPD | RIO Zuni 2 PPD |
|---|---|---|
| Rated FAC Capacity | 1.0 lb/ day<br>0.45 kg/ day | 2.0 lb/ day<br>0.9 kg/ day |
| Water Treatment Capacity (at 1 ppm FAC) | 120,000 gal/ day<br>454 m³/ day | 240,000 gal/ day<br>908 m³/ day |
| Flow Rate (± 15%) | 1.3 gph<br>4.9 lph | 2.7 gph<br>10.2 lph |
| Self-Cleaning | YES | |
| FAC Concentration | 4,000 ± 1,000 mg/L | |
| Water Hardness | 0 – 170 mg/L | |
| Electrical Service Requirement (OSG Only) | 110 VAC to 240 VAC, 1 ph, 4 A rating<br>50/60 Hz | |
| Salt Conversion (SCE) | 3.0 - 3.5 lb/kg salt per lb/kg FAC | |
| Energy Conversion (ECE) | 3.5 kW-hr per lb/FAC<br>7.7 kW-hr per kg/FAC | |
| Salt Quality Req. | 99.5% NaCl or better^ | |
| Hydrogen Venting | REQUIRED | |
| Air Temperature Req. | 40°F to 120°F<br>4°C to 49°C | |
| Recommended Feed Water Temperature | 55°F to 80°F<br>12°C to 27°C | |
| Allowable Feed Water Temperature Range | 40°F to 95°F<br>4°C to 35°C | |
| Feed Water Pressure | 1-75 psi<br>6.8 – 517 kPa | |
| Dimensions (WxDxH) | 21" x 16" x 14"<br>53 cm x 41 cm x 36 cm | |
| Approx. Weight | 25 lbs | |

# LABOR

Labor is needed to load salt into the optional brine tank and to provide periodic preventive maintenance.

Salt loading will be required when the system is running low on brine. However, this task will be infrequent. For example, a 40 gallon brine tank can hold up to six (6) 50 lb bags of salt, which provides enough brine for the RIO Zuni 2 PPD system to run continuously (24/7) for 6-8 weeks. Alternatively, the same amount of brine allows the RIO Zuni 1 PPD system to run continuously for 12-16 weeks.

The table below gives the recommended preventive maintenance activities, the interval on which they should be performed, and the number of minutes required to perform each task.

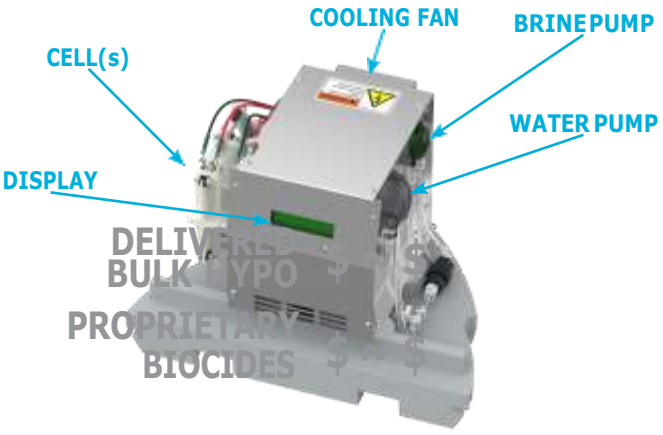
| Preventive Maintenance | Weekly | Monthly | Annual |
|---|---|---|---|
| Check for Leaks (Hoses, Tank, Cell, etc.) | 1 min | | |
| Check for Loose Connections and Corrosion | 1 min | | |
| Check Salt Level (Fill to top of tank) | 5 min | | |
| Check Chemical Production | 7 min | | |
| Check Cell Connections | | 6 min | |
| Toggle Day Tank Level Switch (Both floats up - goes to standby) | | 1 min | |
| Clean Brine Tank and Solution Tank | | | 60 min |
| Total Annual Labor Requirement (hours) | | 15 hr/yr | |

# PARTS

Parts may include a new electrolytic cell every 5 years which will cost a small fraction of the price for a new system. However, additional cells should not be necessary if the system is properly operated and maintained.

| Part (1) | RIO Zuni 1 PPD | RIO Zuni 2 PPD |
|---|---|---|
| Valves and Fittings | | |
| Water Pump | | |
| Brine Pump | | |
| System Power | | |
| New Cell(s) (2) | | |

(1) Based on 2014 MIOX prices and subject to change. Please call MIOX for current quote.
(2) Additional cells should not be necessary if properly operated and maintained.



# MIXED OXIDANT SOLUTION (MOS)

As a leader in OSG innovation, MIOX learned early on that the electrolytic cell inputs and operational parameters could be calibrated to produce aqueous chlorine solutions with substantially different oxidation and disinfection properties. These observations, coupled with extensive engineering and microbiological research, allowed MIOX to develop a unique, patented OSG product line capable of reliably producing MOS.

MOS electrolytic cells are engineered for maximum disinfection efficacy through proprietary cell design, control of power and cell geometry.

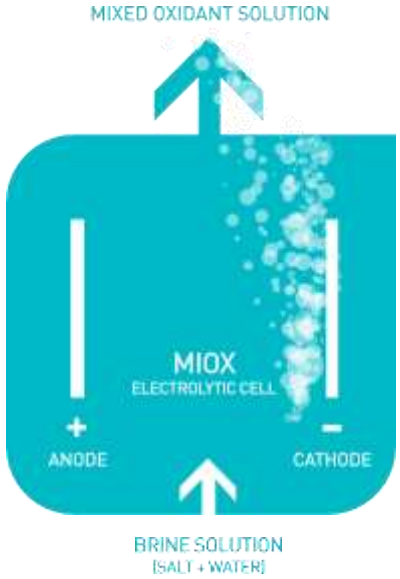
# MOS BENEFITS

- Better control of Legionella through more effective removal of Pseudomonas
- More rapid and thorough inactivation of a wide range of microbial contaminants
- Increases biofilm removal over other biocides even at a high pH
- Reduces disinfection byproduct formation
- Eliminates delivery of hazardous biocides
- Reduces costs for chemicals, transportation and labor

## MOS HYPO +PEROXIDE

Mixed Oxidant Solution (MOS) is a high performing yet environmentally benign disinfectant. Revolutionary efficacy is derived from the 2nd oxidant present in the solution – Hydrogen Peroxide, which co-exists for 24-48 hours after electrolysis.

1. Water and food grade salt are introduced (or injected) into the electrolytic cell
2. Electrolysis occurs inside the cell producing Mixed Oxidant Solution (MOS) chemistry
3. MOS is ready for use




# ABOUT MIOX

MIOX invests deeply in technology and intellectual property, and regularly partners with new industries to develop solutions for their needs. Increased performance, safety, and a fast return on investment for our customers remain a principal focus. With twenty years of experience in the water disinfection market and thousands of MIOX installations in over 50 countries, MIOX chemistries are cleaning over 7 billion gallons of water per day.

Schlumberger TOKYO ELECTRON dcm SIERRA VENTURES Flywheel

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ON-DEMAND CHEMISTRY