

xylem +  evoQUA





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Evoqua Water Technologies is a leading provider of water and wastewater treatment solutions, offering a broad portfolio of products, services and expertise to support industrial, municipal and recreational customers.

Evoqua provides solutions for customers with critical water needs for energy generation, food & beverage safety and production, healthcare, manufacturing and many more.

We are the global leader in identifying emerging water concerns. Our world-class expertise and ever-expanding portfolio of products has established Evoqua as the trusted advisor to municipal, industrial and recreational customers worldwide.

Headquartered in Pittsburgh, Pennsylvania, Evoqua and our brands have over a 100-year heritage of innovation. We help more than 38,000 customers solve water challenges at over 200,000 installations worldwide and operate in more than 150 locations across nine countries.

Every day, millions of people and thousands of companies rely on us as their trusted advisor to help them meet their water needs.

Markets We Serve



**GENERAL
MANUFACTURING**



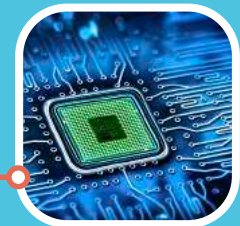
POWER



LIFE SCIENCES



**MICRO-
ELECTRONICS**



**CHEMICAL
PROCESSING**



**MUNICIPAL
DRINKING WATER**



**FOOD &
BEVERAGE**



**MUNICIPAL
WASTEWATER**



AQUATICS



**REFINING &
MARINE**



Reverse osmosis systems

Vantage RO systems

Vantage reverse osmosis (RO) units are pre-engineered and pre-assembled units designed for a variety of industrial and commercial applications. Reverse osmosis membranes typically remove 90-99.9% of suspended and dissolved solids and can remove bacteria and viruses.

Vantage reverse osmosis units offer you the greatest versatility you can get from a standard unit. A line of single-pass systems, each designed for a specific range of flow rates.



A plug-and-play modular solution for seawater desalination applications in the required volumes for industry, irrigation, and municipal use.

- Two pass design produces higher water quality than single pass systems
- Compact footprint saves valuable floor space
- Comprehensive factory testing performed at our ISO9001 certified factory

Ultraviolet disinfection systems

ATG UV Evoqua systems

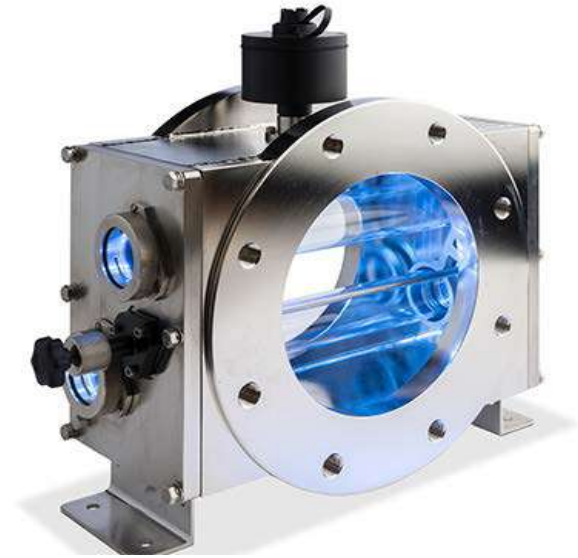
Evoqua is one of the world's leading manufacturers of environmentally friendly, chemical-free UV disinfection systems and water treatment packages.

State-of-the-art medium and low pressure UV lamps, single and multi-lamp configurations utilizing a range of UV lamps, specially designed integrated UV reactors ensure optimal flow distribution and appropriate hydraulic performance.

UV systems are the state-of-the-art solution for a wide range of water treatment applications, from 1 m³/h to more than 5,000 m³/h in a single UV system with high performance and small size.

Atg UV Systems

evoqua



- Improvement of taste, color, smell
- Effective against all known waterborne pathogens
- ATG systems are equipped with a controller that provides remote monitoring, records data, manages system capacity and optimizes resource utilization
- Possibility of water reuse in closed cycle systems

Analyzers and controllers disinfection process

Wallace & Tiernan Analyzer

A complete system solution for complete water quality analysis and control. Analyzers and controllers ensure disinfection process compliance with health, safety and regulatory standards, as well as optimize process efficiency and minimize chemical overdosing. Depending on the application, single and multi-parameter analyzers are used, as well as single and multi-channel controllers for process control. Intuitive menus allow for quick understanding of analyzer setup/control and maintenance.



Wallace & Tiernan[®]

evoQUA



- Measurement of up to six parameters: disinfectant such as free or total chlorine, chlorine dioxide, ozone or potassium permanganate, pH, ORP or fluoride and temperature
- The analyzer is available with two amperometric disinfectant measurement technologies: "bare" fast-response electrode and amperometric sensor technology based on membrane technology
- Minimal sensor response time allows reliable monitoring of disinfection processes, whether on a production line or in a swimming pool.
- Choice of analyzer models from single parameter measurement to multi-parameter measurement

Sodium hypochlorite generators (electrolyzers)

OSEC systems

OSEC's on-site hypochlorite production system is a proven, safe alternative to chlorine, commercial chlorine products and tablet chlorine, providing safe, effective and reliable disinfection without the need to transport chlorine gas, bulk hypochlorite.

OSEC is a compact system that produces sodium hypochlorite solution by brine electrolysis, consuming only water, salt and electricity. Operation is fully automated, making OSEC series systems ideal for remote or unmanned facilities.



- Configurable system provides a robust solution for seamless integration into wastewater treatment plants
- High process efficiency provides a quick return on investment
- Robust design minimizes maintenance and reduces the risk of potential downtime
- Independent power supplies for each electrolysis cell
- Wide operating temperature range
- Fully equipped with all necessary equipment

Chlorine dioxide generators

DIOX systems

Chlorine Dioxide provides excellent microbiological control for a number of plant processes. It allows the removal of any accumulated biofilm as well as preventing future biofilm formation.

Chlorine dioxide production can be based on two methods: acid chloride and chlorine chloride. In both cases, chlorine dioxide is produced as an aqueous solution with a constant concentration. The acid-chlorite method uses hydrochloric acid (HCl) and sodium chlorite (NaClO₂), while the chlorine-chlorite method uses sodium chlorite (24.5% NaClO₂) and chlorine (Cl₂).

The optimum ratio of these two chemicals maximizes the yield of chlorine dioxide. Compared to chlorine, chlorine dioxide dissolves well at any water temperature.

- Stronger than chlorine both as a disinfectant and as an oxidizing agent, perfectly destroys tastes and odors, does not interact with ammonia and is effective in a wide pH range
- Removes high concentrations of manganese and iron from water
- Chlorine dioxide does not release active chlorine into the atmosphere and will not corrode surfaces
- Does not form any toxic chloramines or trihaloid methane derivatives (THM)

Wallace & Tiernan[®]
eVOQUA



Gas feed systems

Vacuum chlorinators Wallace & Tiernan

Evoqua chlorination equipment is the result of more than 100 years of experience in gas supply technology. The line of chlorinators includes floor standing units in various configurations and capacities and more compact wall mounted units with identical reliability and performance. Wallace & Tiernan vacuum dispensers consist of a vacuum regulator mounted at the gas supply source, a wall-mounted gas control unit with a rotameter to indicate the flow rate, and a water injector that provides the vacuum source to drive the entire system. Gas flow is controlled by a Wallace & Tiernan perfect V-valve, providing field-proven accuracy and control.



Wallace & Tiernan

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- Safe process that takes place entirely under vacuum conditions
- Large 250-millimeter (10") flow meters for maximum readability
- Vacuum regulators with unique built-in dual control valves to minimize the possibility of gas release into the room
- Built-in non-isolating switching for continuous operation and complete gas removal from any container

Ozonation systems

Pacific Ozone Generators

Ozone is one of the most powerful oxidizing and disinfecting agents commercially available. Oxidation and disinfection occur when ozone comes in contact with substances including microorganisms (viruses, molds and bacteria) and organic and inorganic compounds (metal ions, plastics and rubber).

Ozone dissolves rapidly in water, contacts wetted surfaces, and then decomposes back to oxygen in solution, leaving little or no residue in the cleaning process.

The systems are pre-assembled and tested in production, allowing implementation into an existing disinfection system such as CIP.



Pacific Ozone™

evoQUA



- Systems are equipped with air cooling and built-in oxygen concentrators
- Reduces microorganisms to 5- 6 log in 2-3 minutes
- Ozone is effective at minimum concentrations
- Pacific Ozone generators utilize corona discharge technology, which uses less electricity, is cost effective and requires minimal maintenance

Regenerative media filters

Neptune Benson equipment

We offer a selection of premium water filters. With thousands of installations worldwide, our Defender RMF filters have earned a reputation as the 'gold standard' for pool filtration systems. Defender systems are capable of filtering particles as small as 1 micron and do not require backwashing.



Neptune Benson

EVOQUA



- Excellent water quality thanks to 1 μm filtration
- 90% Water saving
- 50% Energy saving
- 30% Chemical savings
- 75% Space saving in the technical room
- No backwash tank
- Inexpensive filter media

Self-cleaning mesh filters

VAF filters

Automatic self-cleaning screen filters for the removal of suspended solids from 10 to 1,500 µm at any water flow rate. The self-cleaning strainers utilize innovative technology designed to increase cleaning efficiency and reduce maintenance.

A 12 to 15 second filter wash cycle starts automatically when the pressure drop across the screen increases to 0.5 bar. The filter remains in-line and the filtration process is not interrupted during the cleaning cycle. The flushing flow rate is among the lowest possible, resulting in the lowest costs.



VAF™ Screen Filters

eVOQUA



- Flushing waste is less than 1% of system flow rate
- 70% fewer moving parts, reducing maintenance requirements
- Bidirectional design increases mesh cleaning efficiency by providing 100% cleaning with controlled rotation of the suction nozzle
- Filter housing is made of 316L stainless steel and is designed for years of use without replacing critical parts
- Filters are equipped with a controller that allows you to program the filter flushing process

Continuous electrodeionization (CEDI)

IONPURE®

Ionpure products

Ionpure was the first company to commercialize continuous electrodeionization (CEDI) for water purification. CEDI is a water treatment process that uses a combination of ion exchange resins, ion exchange membranes and direct current to continuously deionize water without the use of chemicals. They are used to produce ultra-pure boiler water for power systems and other industries requiring large volumes of high purity deionized water.



- Deionized water without the need for hazardous or expensive chemicals
- Energy efficiency and safety for employees and the environment
- Resin regeneration does not require deionization tank replacement or additional chemical transportation
- Guaranteed product resistivity of 18 megohm-cm. Optimal for ultra-high water purification
- Removal of boron and silicon is $\geq 99\%$
 - Chlorine and sodium removal is $\geq 99.9\%$

Laboratory water purification systems

Ultra Clear TP TWF EDI systems

Ultra Clear TP TWF EDI Water Systems feature the highest quality water required for all critical testing and research industries.

The quality of water treated on our equipment exceeds the requirements of all relevant standards including ASTM Type I, CLSI and ISO 3696 Type I at the lowest cost of production. Water of this quality can be used for any laboratory application, from atomic absorption spectrometric analysis to critical cell and tissue research, as well as for the preparation of apyrogenic water.



- Connection to municipal water source
- Integrated reverse osmosis system with Ionpure electrodeionization
- Liquid crystal display for quick and easy operation
- Easy navigation by touching the functional components of the system
- SD cards and USB connection for data transfer
- Possibility to equip with 30 or 60 liter tanks

Dialysis water systems

Mar Cor systems

Mar Cor provide healthcare facilities with innovative, high quality water treatment products for optimal performance.

With over 40 years of experience and 5,500 installations, we have the expertise to solve your toughest water treatment challenges.

Mar Cor offers cost-effective, uniform AAMI grade water delivery in accordance with ANSI/AAMI 13959 for point-of-use dialysis. This system meets all current dialysis water quality standards.

Automatic thermal disinfection of the distribution circuit easily and simply reduces biofilm formation and minimizes levels of endotoxin, fungi, yeast and other microbial contaminants.



- Leading supplier of dialysis water systems for healthcare facilities worldwide
- Maximum efficiency in filtration technology
- A broad line of portable dialysis water solutions
- Reverse osmosis units designed to meet the needs of emergency and personal programs

Microsand filters

Vortisand systems

Filtration systems utilize first class diffusers to create a transverse flow that runs parallel to the media surface. The combination of this cross flow and 0.15 mm microsand media allows the filter to remove contaminants in two ways:

- Large particles of contaminants are trapped by the microsand, while the cross flows keep them in suspension and prevent them from blocking the surface;
- Smaller contaminant particles that enter the microsand are trapped by the tiny voids between the media particles.



Vortisand® Filtration

EVOQUA



- A high capacity filter that combines cross flow dynamics with microsand to achieve sub-micron filtration performance
- Up to 75% smaller and lighter than traditional filters
- Low cost of operation - 50% less water consumption due to low backwash flow rate
- Special enclosures for high and low voltage electronics for increased safety during operation

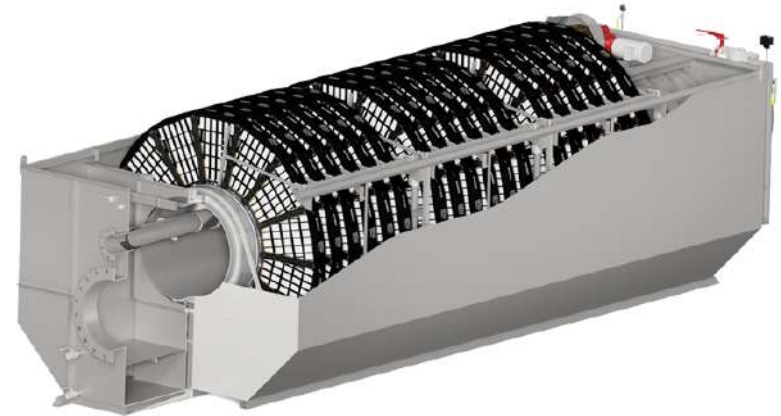
Disc Filter

Forty-X Disc Filter

The Forty-X Disc Filter from Evoqua Water Technologies is a barrier filter designed for tertiary filtration. It captures more solids in a smaller footprint with a 3D stainless steel media design.

The panel media is available in multiple micron ratings suitable for a wide range of applications. The filter panel design includes a robust pressure-assisted seal that allows the panel to sustain and operate at a higher head.

The Forty-X Disc Filter inside-out filtration design allows the water to flow into the center drum and then out through the disc filters capturing solids on the inside surface of the media. This filtration characteristic eliminates the need for a separate system for handling floating material and settling sludge. The captured solids are also backwashed into a reject trough using a one-pass spray cleaning system. A backwash cycle is automatically initiated by a level probe in the influent channel with filtration continuing during backwash. Evoqua's automated controls and integral backwash pump, piping, and nozzles provide high-quality effluent with minimal maintainance.



- Less space needed - small footprint
- Innovative panel design providing more filtration throughput per disc
- Woven optimum tertiary mesh (OTM) filter panel utilizes 316L stainless steel threads with higher porosity
- Modular design - flexible and expandable.
- Trash tolerant filter panel housing
- Stainless steel tank or stainless steel frame designs
- Easy to maintain - convenient efficient cleaning

Customized design, construction or reconstruction wastewater treatment plants

Davco Technologies

DAVCO's products and services are backed by experienced project teams that have been working with municipalities, developers and engineers for over 50 years to deliver turnkey cleanup projects and solutions.

Evoqua offers a single-source approach that combines industry-leading expertise and equipment with design, construction, installation and commissioning services with the ability to deliver a high-quality project in months, not years.



Davco
— evoqua



- Integration of our experience and equipment with design, fabrication, installation, construction and commissioning
- Wastewater suitable for direct discharge or reuse
- Ability to biologically remove nutrients (nitrogen and phosphorus)
- Requires less physical space, less piping and electricity, and less maintenance than on-site concrete systems

Aerobic and anaerobic technologies wastewater treatment

ADI Systems

Providing innovative, reliable and cost-effective solutions for industrial wastewater treatment and waste-to-energy. A wide range of technologies specifically designed to meet the complex challenges of industrial wastewater treatment and solid organic waste management.

Evoqua offers aerobic treatment systems for both municipal and industrial applications requiring wastewater treatment and treatment of pre-anaerobically treated wastewater. Aerobic treatment systems can also be used specifically for nitrogen and phosphorus removal in a process known as biological nutrient removal.

Anaerobic treatment is typically used to treat warm, highly concentrated industrial wastewater containing high concentrations of organic matter that is biodegradable. This energy efficient process reliably provides reductions in biochemical oxygen demand (BOD), chemical oxygen demand (COD) and total suspended solids (TSS) in wastewater.



Dissolved air flotation systems air flotation systems (DAF)

DAF systems

Dissolved Air Flotation (DAF) is a proven and effective physicochemical technology for the treatment of a variety of industrial and municipal process and wastewater streams.

Evoqua's DAF systems are designed to remove total suspended solids (TSS), reduce biochemical oxygen demand (BOD) and fats, oils and greases (FOG) from the wastewater stream. The contaminants are removed using a water-dissolved air solution generated by injecting pressurized air into the DAF treated wastewater recirculation stream.

This recirculation stream is then mixed with the incoming wastewater in an internal contact chamber where the dissolved air escapes from the solution in the form of micron-sized bubbles that attach to the contaminants. The bubbles and contaminants rise to the surface and form a floating layer of material that is removed by the surface skimmer to the inner hopper for further treatment, while heavier solids sink and are removed by the bottom auger.



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WATER TECHNOLOGIES



- 15 different models for a wide range of applications and performance ranges
- Complete, frame-mounted design requires no field installation
- Quality drive and pump components for long-term reliability
- Industry-leading HELLBENDER water treatment system that is both efficient and easy to use

Mobile and emergency solutions for removing hydrocarbon compounds from water

API Oil / Water Separators

Mobile and emergency solutions for separating oil and water.

Evoqua's oil/water separators systems have been designed to separate large amounts of oil which has been mixed in with water. Our oil/water separators have been designed using Stokes Law by computing the velocity of an oil droplet to rise in water comparing it with the size and mass of the oil. oil/water separators are gravity feed systems, which allows the oil to rise to the top of the water surface. When the oil and water have been separated, the layer of oil on top is then skimmed off and collected in a container. The sediment will collect at the bottom of the separator and can be drained off to a container. The water that is able to pass under and over a weir system is then processed until it reaches appropriate standards.

At Evoqua, we have designed systems to treat as little as 15 gallons per minute up to 2000 gallons per minute.



TYPES OF REMEDIATION

- Tank Bottom Water Treatment
- Tank Hydrostatic Test Water Treatment
- Petroleum Contact Water Treatment
- Pipeline Hydrostatic Test Water Treatment

Solutions for the electrochemical and electroplating industry

Magneto Anodes

Magneto Special Anodes is a world leader in the design, manufacture and supply of high quality titanium based anodes with active precious metal coatings.

Our anodes are used in a wide range of electrochemical applications. Magneto Anode experts evaluate specifications, product and process parameters to determine anode design based on conditions including electrolyte composition, temperature, amperage and service life.

Anodes are available in a wide variety of configurations that include tubular, strip, wire, mesh, sheet or plate to meet product or process requirements.



- Cathodic protection with pulse current
- Metal plating
- Water treatment and electrolysis
- Automotive Industry
- Precious Metal Plating
- Canning industry
- Copper foil
- Steel in concrete
- Pipelines
- Tank storage

Filter presses

MCPress and J-Press filter presses

Filter presses separate suspensions from liquids, give the driest cake with the cleanest filtrate compared to other dewatering equipment designed for the respective application.

Proper selection of fabrics, plates, pumps, auxiliary equipment and processes such as precoating, sludge washing and sludge squeezing are critical to optimal dewatering system performance.

Filter presses have proven their effectiveness in hundreds of applications in many markets and are capable of dewatering particles as small as 1 micron. They can be easily tailored to a specific capacity range and remove up to 99% of suspended solids.



- A wide range of configurable parameters and sizes provides cost-effective performance to meet the user's needs
- Filter press provides high cake discharge stability, low sludge moisture content and excellent reliability combined with significantly lower maintenance requirements
- Web cleaning system
- Cake discharge monitoring system
- Movable platen mechanism unit

Clarifiers & Separators

Rotary Presses from Evoqua

The rotary press delivers cost-effective high cake solids & quality filtrate

The rotary press operates continuously at low speed (< 1rpm) to develop a pressure differential and frictional resistance to effectively dewater various types of sludges.

It's simple design, coupled with a low operational speed, results in prolonged service life, minimal maintenance and energy consumption. The pre-assembled, compact, plug and play system is designed for ease of installation and operation. It's capacity can easily be expanded by increasing the disc diameter and the number of chambers.



- Low maintenance, reduced labor costs
- Minimal part replacements
- Low operation costs, low odor
- Pre-assembled, expandable
- No internal bearings, fully enclosed
- Continuous operation on less than 1 rpm of speed
- Minimal operator interaction
- PLC/remote control capability
- Food grade compliant

Automated corrosion protection

CAPAC cathodic protection systems

Capac's industry-standard Impulse Current Cathodic Protection (ICCP) systems provide automatic, permanent protection that prevents electrolysis and galvanic corrosion on the underwater surfaces of a wide range of marine vessels and fixed or mobile offshore structures. Capac systems combine our proprietary state-of-the-art anode and electrode technologies with advanced engineering, design, manufacturing technology and quality control to create high quality, reliable solutions. More than 3,000 systems have been installed worldwide. Capac systems utilize high quality platinum or mixed metal oxide anodes and silver/silver chloride support electrodes.

Capac systems help extend the life of rudders, shafts, props and propellers, as well as any other underwater parts subject to electrolysis. Anodes, reference elements and automatic control systems maintain the required level of protection for subsea hulls and fittings, unlike standard zinc anodes which cannot adapt to changes in salinity or compensate for extreme paint loss.



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WATER TECHNOLOGIES



- Optimum documented corrosion protection at minimum overall cost
- Ensuring a service life of more than 20 years
- Intuitive control panel with state-of-the-art technology for easy operation
- Automated equipment control with individual data parameters for reliable operation

Marine Growth Prevention System

Chloropac system

Chloropac systems produce a dilute, safe sodium hypochlorite solution on-site for direct injection into the water circuit to prevent the growth of common marine species. Advanced electrolyzer technology, available in several basic cell design options, combined with our decades of experience in anode and system design, has freed thousands of customers worldwide from the expense of purchasing and the hazards of working with corrosive chemicals.

Evoqua's Chloropac system utilizes concentric tube electrolysis (CTE). The cells provide efficient chlorine production with high internal velocity to keep the active cell surfaces clean. Chloropac system cells are available in large capacity, allowing them to be packaged in a standard electrolyzer or in a fully packaged system that is compact and offers significant weight savings. This allows the systems to easily pass through standard manholes, corridors and fit into available space.

The patented technology is self-cleaning, so it does not require costly acid washing, leaving you to operate your platform, vessel or plant without worrying about biofouling problems.



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WATER TECHNOLOGIES



- High operational reliability
- Individual elements of the Chloropac system can be easily removed and replaced with minimal downtime
- Environmentally friendly method, no chemical storage and no discharge of heavy metals into the aquatic environment
- Highly configurable system solutions with the lowest possible number of cells
- Chloropac cells can be installed on existing CTE electrolyzers

Ballast water management system

SeaCURE BWMS

The SeaCURE ballast water management system utilizes a combination of filtration followed by on-site biocide production from seawater by electrochlorination. The SeaCURE system was developed based on the Chloropac Marine Growth Prevention System (MGPS), which has been meeting the needs of the offshore and marine oil and gas industry for over 40 years.

The system utilizes approximately 0.5-1% flow to produce sodium hypochlorite for ballast water treatment.

Evoqua's SeaCURE system is an electrochlorination solution for ballast water treatment designed to meet IMO and USCG requirements for all three salinities, including freshwater. The system is based on three main components: filtration, electrochlorination and patented ORP control logic.

Utilizing the reliable electrolyzer technology of the Chloropac system, the system produces hypochlorite during the electrochlorination process for effective ballast water treatment.



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WATER TECHNOLOGIES



- Self-cleaning platinum-coated electrolyzer cells in the form of concentric tubes with a wide range of operating parameters
- Electrochlorination in parallel flow
- Patented technology
- Degassing system
- Arctic to tropical temperatures
- Eliminates the need for acid cleaning or polarity reversal

TRANSFORMING
WATER
— **ENRICHING** —
LIFE



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ANALYTIC

AIR & WATER EUROPE

aquaanalytic.eu

+31 715 69 01 51

info@aquaanalytic.eu