EVOQUA WATER TECHNOLOGIES IN EUROPE

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Evoqua Water Technologies is one of the world’s leading providers for water treatment equipment and service. The extensive portfolio includes the Wallace & Tiernan® product line with complete solutions for disinfection, chemical feeding, measurement and control systems.
VARIOUS POSSIBILITIES TO USE WALLACE & TIERNAN PRODUCTS IN POOL WATER
APPLICATIONS

POOL/SPA
Swimming/leisure pools and spas; public & municipal pools as well as in hotels, schools, residential homes and hospitals
Applications
Disinfection, measurement and control, neutralization

FOUNTAINS
Fountains in public and private parks, water parks
Applications
Disinfection, measurement and control, neutralization

AQUACULTURE
Fish industries
Applications
Chemical free water treatment, UV treatment, measurement and control
CONSULTING

EVOQUA: A PARTNER YOU CAN RELY ON

EU regulations are very demanding regarding pool water treatment. Wallace & Tiernan® products have been helping municipal and industrial customers meet the standards for decades with presence in every third public pool. The complete pool management solutions are well known for state of the art technology, reliability and efficiency.

Apart from the products the Wallace & Tiernan specialists will identify the most suitable disinfection method for every application, with economy in mind in terms of energy, water and waste.

SERVICES FOR DISINFECTION SYSTEMS

Evoqua Water Technologies not only offers a wide range of systems and devices for water treatment and disinfection, but also a capability of related service offerings.

Services for disinfection systems
• On-site service
• Service contracts
• Repairs
• Technical consulting
• Use of original spare parts
• Safety audits performed by qualified personnel
• Manufacturer service

From maintenance on installed systems to optimisation and upgrades, treatment and dosing systems, electrolysis systems, UV disinfection units or measuring and control devices, the comprehensive offerings range distinguishes Evoqua Water Technologies as partner of choice.
DISINFECTION METHODS

PROVEN GAS FEEDERS

Over a hundred years ago Charles F. Wallace and Martin F. Tiernan invented the first ever commercial chlorinator. Still today, Wallace & Tiernan® chlorine gas dosing systems are the epitome of safety and accuracy – around the globe.

Wallace & Tiernan chlorine gas dosing units operate based on the full vacuum principle. The V10k™ full vacuum dosing system is also suitable for dosing carbon dioxide (CO₂) to lower pH values. The unit is designed for capacities up to 10 kg/h and features numerous configuration options. The Wallace & Tiernan V-notch control orifice is used successfully worldwide and offers a large control range, very good reproducibility and high dosing accuracy. Pressure/vacuum controllers mounted directly to the gas tank or manifold reduce the pressurized gas to a process vacuum. The pressure/vacuum controller is available in power levels of 4 kg/h, 10 kg/h and higher.

CHLORINE DIOXIDE IN POOL WATER

Legionellae in pool water is a critical issue that needs to be taken seriously. Water used for showering is affected primarily and as water is part of the drinking water system it is subject to the same rules and regulations. Whirlpools, other water-spraying systems and pool water filters can be affected as well.

Since the occurrence of legionellae may result in serious consequences including closure of the bath or pool facility, it is important to implement precautionary and preventative measures.

Wallace & Tiernan have been producing chlorine dioxide successfully against legionellae. For decades the available treatment and dosing units produce chlorine dioxide starting at 3 g/h up to 5 kg/h and are integrated into the warm water system. The corresponding measuring and control unit offers additional control options.
OSEC SERIES

Sodium hypochlorite is an effective alternate disinfectant wherever fill water has a low acid capacity (carbonate hardness) or if the use of chlorine gas is unadvisable or to be avoided. Since commercially available sodium hypochlorite solutions have a limited shelf life, resulting in loss of active chlorine content, sodium hypochlorite is ideally generated directly onsite through the electrolysis process. The input is only sodium chloride solution (common salt water) or – in case of salt water pools – ocean water.

Tubular cell electrolysers

The OSEC®-B and OSEC B-Pak (brine) and OSEC-S (sea water) systems function as undivided, single-flow electrolysis cells without membranes. The concentration of the prepared sodium hypochlorite solution amounts to approx. 2 g/l active chlorine when using ocean water and approx. 6 to 8 g/l active chlorine when using brine.

Membrane electrolysers

The OSEC-A unit is designed for smaller pools and generates hypochlorous acid up to 12, 25 or 50 g/h chlorine based on the membrane process.

The OSEC-NXT chlorine membrane electrolysis system is offered in a power range from 6 kg to 60 kg of chlorine per day. Constant electrode materials, a chlorine free brine solution container and not recycling of brine are the main differences to commonly available chlorine membrane electrolysis systems.

It consists of user-friendly touch panel and an integrated power control.

Environment-friendly

Experienced technologies: whether UV systems, chlorine dioxide generation and dosing, electrolysers or ultrafiltration for recycling of sludge water recycling
Contact us to find out how much you could be saving right now: We gladly advise you. The investments will pay for themselves within a very short time, while providing the means to achieve savings. Moreover, you will be employing the latest, modern technology: for optimized operations and safe water fun.
Various additives are used in swimming pools to condition water. The types of additives depend on the treatment technology and fill water. Wallace & Tiernan® systems dose accurately and safely. Please contact us for assistance with technical questions.

SYSTEMS TO CORRECT pH VALUE

According to the German DIN 19643, pH values are among the hygiene parameters and should be between 6.5 and 7.6. The acid capacity of the water, measured as $K_{S_{4,3}}$, is a parameter that affects many procedural steps of the water treatment process. This value should be at least 0.7 mol/m³, especially for flocculation.

Depending on the condition of the raw water, the utilized disinfection method, and the treatment process, different methods to condition the water are used. These include the addition of the following:

- Marble gravel for neutralization
- Sodium bicarbonate for hardening
- Additives to raise/lower pH values (e.g. sulfuric acid, sodium hydroxide)
- Carbonic acid for neutralization

If the chlorine activated process is used, marble gravel is the most economical way to minimize a drop in pH. It stabilizes the acid capacity and helps to achieve good flocculation results.

Sodium bicarbonate is also used to increase the capacity of the acid. The Wallace & Tiernan® dosing system is a two-chamber arrangement: It is geared towards the slow dissolution rate of sodium bicarbonate in water. An additional water softener unit is recommended for hard water. The dosing system can be linked to the control of pH correction and disinfectant.

POWDERED ACTIVATED CARBON DOSING SYSTEMS

Powdered activated carbon or a UV system can be used as an adsorption step to adhere with the combined chlorine values prescribed by DIN 19643.

Both alternatives are usually more economical than supplying a greater amount of fresh water. Powdered activated carbon is even the substance of choice when the primary objective is to eliminate trihalomethanes.

Powdered activated carbon has been proven to improve pool water quality significantly. This means less secondary reaction products of the chlorination process as well as a higher oxidizability of the water. The compact JETPAK powdered activated carbon dosing system uses a special injector and supplies up to three dosing points with the prepared suspension.

ACCURATE DOSING OF FLUID SUBSTANCES

Evoqua Water Technologies provides sophisticated concepts for the dosing of liquid chemicals, including storage fixtures, dosing station, control unit, as well as the lines to the application points.
WALLACE & TIERNAN® ANALYZERS & CONTROLLERS

MEASURING AND CONTROL SYSTEMS PERFECT MATCH FOR REQUIREMENTS IN EVERY SWIMMING POOL

Pool Management with DEPOLOX® Pool E 700 P system

The DEPOLOX® Pool E 700 P system is the central measuring, control, and regulating unit for public pools. It measures and controls hygiene parameters such as free chlorine, combined chlorine, pH value, redox voltage, and conductivity. Preset applications can be adjusted to meet on-site conditions.

The multi function system is usually able to control the addition of chlorine, pH correction, the flocculant dosing, the UV or the powder activated carbon unit. Additional functions such as “economic operating mode” reduce the circulation rate if the measured values correspond with DIN 19643 specifications.

The redox-based chlorine overfeed control adjusts to the current needs and reduces operating costs. This CEDOX control considers the redox voltage, which expresses the water quality as a composite parameter, with a second control parameter parallel to the chlorine value. This means that the added chlorine is sufficient but not excessive, achieving great savings.

PCS plus unit - Well-built and compact

Compact and practical, the PCS plus system measures the most important parameters of free chlorine, pH value, redox voltage and temperature. It is available as a standalone unit or complete system with integrated tube dosing pumps. The dual measuring of free chlorine is also possible with the PCS plus unit, for example, when two pool basins are connected to one filter circuit.

SFC series

SFC series devices are available for the measurement and control of individual parameters. For example, the disinfection of the sludge water tank is controlled with this precise measurement and control technology.

GMS plus gas detection system

The GMS plus system can be used to detect gases such as chlorine, chlorine dioxide, or ozone. The reliable dual channel measuring system monitors gas concentration and temperature of up to two measuring locations. It uses the tried and tested Chloratekt sensors to measure chlorine, chlorine dioxide, and ozone; other sensors with mA output can be connected as well to measure other gases.

Photometers for water treatment and pH check

The portable photometers Wallace & Tiernan® P7 Advanced and P34 Professional measure up to seven and 34 parameters in a single device, the most important parameters for water treatment. Additional devise that meets the requirements of the German DIN 19643: The portable meter pH check is a high-quality, battery-powered hand-held meter used to determine pH values.
DATA MANAGEMENT PRODUCTS
FOR INTEGRATION, VISUALIZATION AND CONTROL

Internet-capable with Process Monitoring System

The Wallace & Tiernan® Process Monitoring System consists of a data management device that is independent of the operating system and makes it possible to collect and visualize data of equipment and devices connected to the RS 485 bus. Four password-protected user levels control access to operational data via PC, laptop or Smartphone.

Use universal standards with OPC

OPC (OLE, Object Linking and Embedding, for Process Control) is a uniform, networked, Windows®-based software standard for interaction in the area of process automation technologies. It allows complete data transfer across different levels (from field to control center level) and provides maximum flexibility and independence for the user. The Wallace & Tiernan OPC Server easily connects all RS 485 devices to Windows-based visualization systems. The interface supports bidirectional data flow, i.e., the OPC client can both read and write process data.

Linking with higher-level controllers

For the measurement and control systems DEPOLOX® Pool E 700 P, DEPOLOX Pool and the devices of the SFC series Evoqua Water Technologies offers fieldbus converters to connect to the most prevalent fieldbus systems: Data exchange between various, manufacturer independent devices is thus possible using the standardized fieldbus systems Profinet® IO, or Modbus® TCP.
TRADITION CONNECTS

WELL KNOWN NAME RELIES ON ESTABLISHED BRANDS

Evoqua Water Technologies promotes Wallace & Tiernan - the trusted global brand for water treatment and disinfection.

The company history is especially evident in the technical rooms of many pools because of the durability and proven operation of the equipment. Evoqua continues this tradition with new products as well. You can rely on it.