

Wallace & Tiernan® Process Technology OSEC®-A Hypochlorite generation system

The Wallace & Tiernan® chlorination system OSEC®-A was designed for the generation of hypochlorous acid (HClO) through electrolysis. Hypochlorous acid is the active substance for the chlorination of water. The disinfectant being produced on-site stands out due to its high purity level, its stability and disinfection capacity. The OSEC®-A system provides an optimum yield through effective use of the basic chemical. The simple design and proven procedure guarantee high operational reliability.

Applications

- Disinfection of small pools, plunge pools and whirlpools
- Small potable water supplies
Feed rate: 10 up to 80 m³/h

General

The OSEC®-A system stands out by its compact and space-saving design, easy operation and low maintenance. Different setting possibilities and monitoring as well as an integral chlorine gas detector guarantee highest operational reliability.

At the outlet of the electrolyser cell the chlorine generated by the OSEC®-A system is immediately dissolved in the water resulting in the generation of highly effective hypochlorous acid. Undesirable substances such as chlorate and bromate are not formed. This type of electrolysis represents the purest and most stable disinfection solution.

In comparison, commercial sodium hypochlorite contains chlorate that is formed during the disintegration of the effective chlorine. In addition, bromate is found in commercial sodium hypochlorite, a carcinogenic substance, for which a limit value of 0.025 mg/l is valid since 1.1.2003 in accordance with the German Potable Water Act.

Benefits:

- Very high disinfection capacity through high purity level and stability of hypochlorous acid produced
- No by-products such as chlorate and bromate
- Pre-set selectable process adapted application settings
- Best alternative to commercial sodium hypochlorite solution
- No storage of degradable chemicals
- High efficiency production, low operational costs
- Compact and space-saving design
- Easy installation and start-up
- Easy to operate and maintain



Product Sheet

Water Technologies

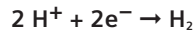
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Operation

A peristaltic pump feeds Cedolyt A 9/18 into the anode compartment of the electrolyser cell where the electrolytic process is started by applying DC current. The controlled feeding provides an optimal conversion. The anode compartment is divided from the cathode compartment by an ion-selective membrane. Chlorine gas is generated at the anode through the following chemical reaction:



Hydrogen is generated at the cathode:



The hydrogen gas is ventilated safely to the open air. The generated chlorine is immediately dissolved in the water at the outlet of the electrolyser cell and directly added to the water to be treated via a bypass. For process and potable water applications, the chlorine solution is discharged into an intermediate tank from where it is fed to the water to be treated by means of a metering pump.

Three operational modes are possible:

- External control initiates generation via a signal from the measurement and control instrument installed (e.g. PCS *plus*, DEPOLOX® Pool).
- In timer mode generation is activated by 6 freely adjustable intervals per day.
- Batch operation is normally used where one generator supplies several points of application.

An electronic control monitors all essential functions and indicates the actual operating conditions.

Parallel operation of several OSEC®-A systems is possible via an external contact.

Technical data

Capacity:

12/25 g/h chlorine (Cedolyt A 9)
25/50 g/h chlorine (Cedolyt A 18)

Operating water:

Flow: 100 – 200 l/h
Min. supply pressure (inlet): 0.1 bar
Max. back pressure (outlet): 0.8 bar

Ambient temperature: 0 – 40 °C (32 – 104 °F)

Enclosure: IP 41

Display:

LCD graphic display with back-light
240 x 64 pixel resolution

Digital Inputs:

1 x external start/stop
1 x operating water monitoring
2 x external stop
2 x carboy suction pipe
4 x storage tank

Switching output:

1 x external release
(e.g. metering pump or other OSEC®-A systems)
1 x operating water e-valve
1 x general alarm

Interfaces:

RS 232 for configuration download or firmware update
RS 485 for connection to:

- ChemWeb-Server
- OPC-Server Data Access

Power supply: 115/230 V ± 10 %, 50 – 60 Hz, max. 175 VA

Dimensions (W x H x D): 520 x 970 x 220 mm
(20.5 x 38.2 x 8.7 ")

Weight: approx. 30 kg (66.1 lbs) incl. packing

Potential connections

OPC-Server Data Access V2.0

Simple connection to superimposed visualisation systems via Wallace & Tiernan® OPC-Server Data Access V2.0.

ChemWeb-Server

Simple connection to Web technology via the Wallace & Tiernan® ChemWeb-Server. Complete display and regulation of operating parameters of the OSEC®-A system via pre-defined internet pages.

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