

Chlorine Dioxide Production System

Customized system for the generation of 1 kg to 200 kg ClO_2/hour

General

The Grundfos chlorine dioxide production system is suitable for large water treatment applications. Based on a patented underwater production technology, it generates chlorine dioxide (ClO_2) using concentrated solutions of sodium chlorite ($NaClO_2$ 25 or 31 %) and hydrochloric acid (HCl 31-33 %).

With their high precision, the integrated Grundfos dosing pumps assure a high performance level and yield.

The chlorine dioxide solution is produced in a very small reaction chamber which is installed in-line, and is injected directly into the water to treat. In this way, the chlorine dioxide is present only in the treated water, which provides high safety and very effective consumption of the chemical precursors.

Chlorine dioxide

Chlorine dioxide is excellent for the control of legionella bacteria, biofilm and algae. It destroys the existing biofilm and prevents it from building up again, thus removing the breeding ground for microorganisms. Chlorine dioxide does not alter the taste or smell of the treated water.

Container installation

If it is not possible to install the system indoors, or if ambient conditions are not suitable for an outdoor installation, the dosing section and the control system can be preinstalled in an air-conditioned container.

Customized systems

The Grundfos chlorine dioxide production system can be tailor-made according to customer needs: titanium pumps for pressurized injection, a distribution panel for multiple injections, complete or partly redundancy, external communication for remote control, etc.

Grundfos chlorine dioxide production systems can be customised for any capacity level up to 200 kg ClO_2 per hour. With a concentration of 0.2 mg ClO_2/litre, up to 1000 000 m^3 of water can be treated per hour.

Features and benefits

- Very effective underwater production technology: chemical reaction yield of 95-98 % requiring less chemicals and generating less by-products
- Low consumption of chemicals and power: only 5.7 kg HCl per 1 kg of generated ClO_2
- Reduced transportation and chemical storage costs: using concentrated sodium chlorite ($NaClO_2$ 25 or 31 %) and hydrochloric acid (HCl 31-33 %)
- Reduced investments and increased safety: no need for a storage tank or safety zone for the generated ClO_2 solution
- Lower risk due to low quantity: small volume of reaction chamber means lower ClO_2 quantity
- No risk of concentrated ClO_2 gas released into the atmosphere: highly concentrated ClO_2 is generated under water
- Few components
- Easy installation

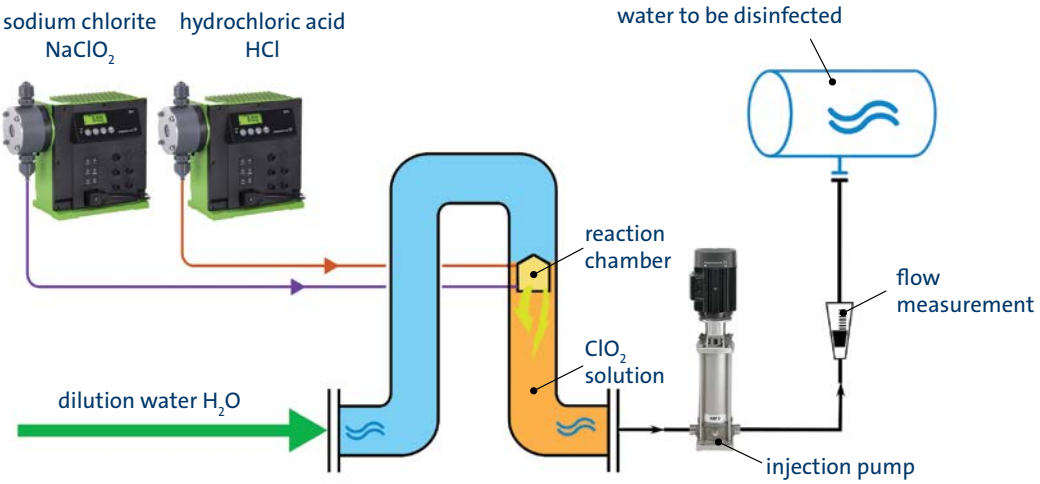
Applications

- Drinking water treatment in municipal waterworks
- Cooling towers
- Municipal wastewater treatment
- Industrial wastewater treatment

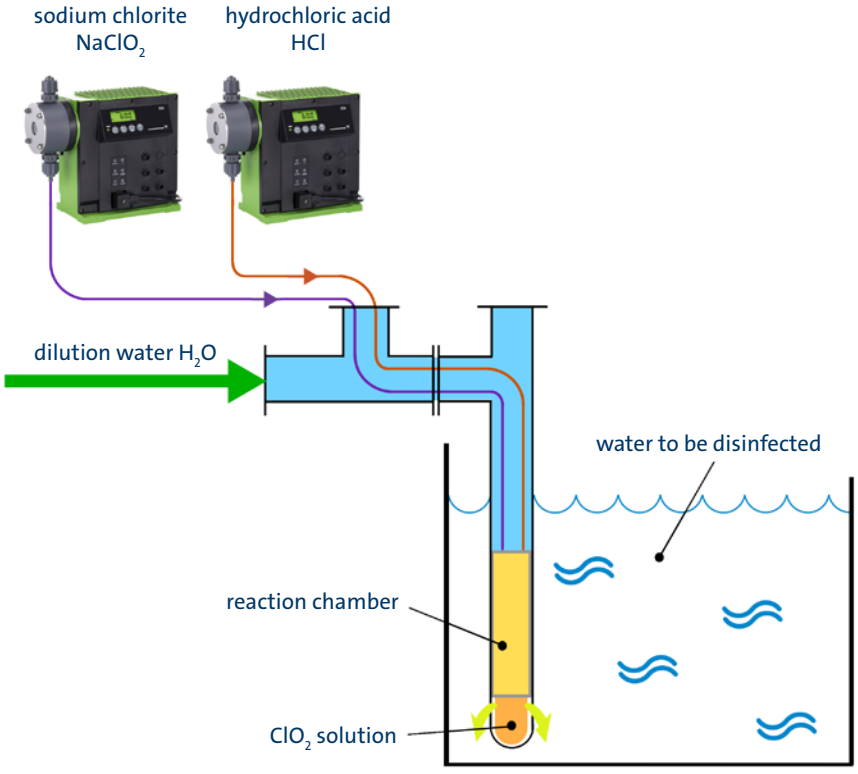
U-type and L-type

With a volume of just 0.3 litres for the generation of 10 kg ClO_2/hour, the reaction chamber is very small. Two types of reaction chambers are available: U-type (installed inside a pipeline) and L-type (installed directly in a water basin).

U-type underwater ClO_2 generating system



L-type underwater ClO_2 generating system



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