



## OXIPERM® PRO

### Production of $\text{ClO}_2$ using diluted $\text{NaClO}_2$ and $\text{HCl}$ solutions

#### General

Oxiperm Pro systems produce chlorine dioxide using diluted solutions of sodium chlorite ( $\text{NaClO}_2$ , 7.5 %) and hydrochloric acid ( $\text{HCl}$  9 %). They are available in four capacity levels, producing up to 5, 10, 30 and 60 g/h of chlorine dioxide respectively. This capacity is sufficient to treat up to 150 m<sup>3</sup> of drinking water per hour at a maximum concentration of 0.4 mg/l  $\text{ClO}_2$ .

Chlorine dioxide is produced on demand from diluted solutions using the reliable sodium chlorite / hydrochloric acid, in accordance with the German Drinking Water Directive.

The chlorine dioxide solution produced is stored in an integrated or external batch tank and is added to the drinking water pipe as required using the integrated dosing pump or an external dosing pump.

#### Applications

Ideal application areas for Oxiperm Pro include combating germs and pathogens, such as legionella in building installations, disinfecting cooling water systems, and disinfecting drinking water in water plants or industrial processes.

Chlorine dioxide is often used in the food and beverage industry for disinfection of process water or for CIP and bottle washing because it doesn't change the taste or smell of the treated water.

Oxiperm Pro OCD-162-5 and -10 systems are designed for small or medium-sized buildings with water flows up to 25 m<sup>3</sup>/h. Oxiperm Pro OCD-162-30 and -60 systems are suited for disinfection tasks in waterworks or applications in the food and beverage industry.

**Remark:** Legislation on the use of disinfection products in water treatment applications are country specific. Please contact your local Grundfos sales office for further details on the use of our products in your application and area.

#### No chance for pathogens

The building operator is responsible for a hygienically faultless drinking water quality in the lines coming from the water supplier. This means that the legionella found at the tapping point must not exceed a certain quantity. Water in public and private buildings has to be examined regularly.

An ideal means of ensuring the purity of drinking water is to use chlorine dioxide as a disinfectant. Chlorine dioxide is highly effective against all types of germs and has a long dwell time in the tubing system, which means it disinfects even without re-dosing. The big advantage of chlorine dioxide over other disinfectants is its effectiveness against biofilms. It destroys the existing biofilm, thus removing the breeding ground for microorganisms, and prevents it from building up again.

#### Benefits of the Oxiperm Pro system

- Compact system, also for confined spaces
- Low operating costs
- Stable product solution, can be stored for several days
- Built-in controller for connecting  $\text{ClO}_2$  measuring cell
- Little installation work
- Robust design
- Wide fields of applications

## Technical data

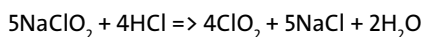
Capacity	OCD-162-5	OCD-162-10	OCD-162-30	OCD-162-60
ClO <sub>2</sub> [g/h]	5	10	30	60
<b>Average consumption of chemicals and water:</b>				
Consumption of HCl [l/h]	0.17	0.30	0.92	1.85
Consumption of NaClO <sub>2</sub> [l/h]	0.16	0.28	0.86	1.63
Dilution water [l/h]	2.7	4.3	15.2	30.4
<b>Permissible concentration of chemicals</b>	HCl (EN 939): 9 % by weight NaClO <sub>2</sub> (EN 938): 7.5 % by weight			
<b>Concentration of chlorine dioxide solution</b>	Approx. 2 g/l (2,000 ppm)			
<b>Permissible temperature</b>	Ambience: +5 to +40 °C Dilution water: +10 to +30 °C Chemicals: +10 to +35 °C			
<b>Permissible operation water pressure</b>	3 to 6 bar			
<b>Permissible relative air humidity</b>	Max. 80 % (non-condensing)			
<b>Total volume of reaction tank and batch tank</b>	Reaction tank		Batch tank (up to max. level alarm)	
	OCD-162-5	1.00 litre	OCD-162-5	1.00 litre
	OCD-162-10	1.80 litres	OCD-162-10	1.80 litres
	OCD-162-30	6.10 litres	OCD-162-30	7.00 litres
	OCD-162-60	13.40 litres	OCD-162-60	13.90 litres
<b>Material</b>	Housing: PE Cover: EPP Fastening sleeves: Stainless steel Solenoid valve: OCD-162-5/-10: PVC OCD-162-30/-60: PVDF Reaction / batch tank: PVC Internal hoses: PTFE Gaskets: FKM			
<b>Option</b>	Integrated digital dosing pump DDA or DDI or mechanical dosing pump DMX for product solution Without integrated dosing pump for product solution			
<b>Connection</b>	ClO <sub>2</sub> dosing line: 230 V version: hose 4/6, 6/9 and 9/12 115 V version: hose 1/8" x 1/4", 1/4" x 3/8" and 1/3" x 1/2" Dilution water: 230 V version: hose 6/9 or 6/12 or PVC pipe DN8 115 V version: hose 1/4" x 3/8"			
<b>Protection level</b>	IP 65 Electronics, dosing pumps, solenoid valve			

## The Oxiperm Pro principle

The Oxiperm Pro system produces chlorine dioxide (ClO<sub>2</sub>) by mixing two reagents:

- Sodium chlorite (NaClO<sub>2</sub>) 7.5 %
- Hydrochloric acid (HCl) 9 %

The following reaction takes place:



To obtain a safe concentration (approx. 2 g/l) of the chlorine dioxide solution, dilution water is added.

## Effectiveness diagram

