OXIPERM® PRO

Production of ClO_2 using diluted $NaClO_2$ and HCl solutions

General

Oxiperm Pro systems produce chlorine dioxide using diluted solutions of sodium chlorite ($NaClO_2$ 7.5 %) and hydrochloric acid (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^3 of drinking water per hour at a maximum concentration of 0.4 mg/l 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^3/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
- Integrated measured value logging (optional)
- Little installation work
- Robust design
- Wide fields of applications

Technical data

Capacity	OCD-162-5: 5 g/h ClO_2 OCD-162-10: 10 g/h ClO_2		OCD-162-30: 30 g/h ClO_2 OCD-162-60: 60 g/h ClO_2	
Protection level	IP 65 Electronics, dosing pumps, solenoid valve			
Permissible concentration of chemicals	• HCl (EN 939): 9 % by weight • $NaClO_2$ (EN 938): 7.5 % by weight			
Permissible temperature	• Ambience: +5 to +40 °C • Dilution water: +10 to +30 °C • Chemicals: +10 to +35 °C			
Permissible operation water pressure	3 to 6 bar			
Permissible relative air humidity	Max. 80 % (non-condensing)			
Total volume of reaction tank and batch tank	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
Filling volume of reaction tank and batch tank	Reaction tank		Batch tank	
	OCD-162-5	0.87 litres	OCD-162-5	0.87 litres
	OCD-162-10	1.67 litres	OCD-162-10	1.67 litres
	OCD-162-30	5.52 litres	OCD-162-30	6.50 litres
	OCD-162-60	11.96 litres	OCD-162-60	13.00 litres
Concentration of chlorine dioxide solution	Approx. 2 g/l (2,000 ppm)			
Material	System frame: PP Fastening sleeves: Stainless steel Solenoid valve: PVC Reaction / batch tank: PVC Internal hoses: PTFE Gaskets: FKM			
Option	• Integrated digital dosing pump DDA or DDI or mechanical dosing pump DMX for product solution • Without integrated dosing pump for product solution			
Connection	• ClO_2 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"	

The Oxiperm Pro principle

The Oxiperm Pro system produces chlorine dioxide (ClO_2) by mixing two reagents:

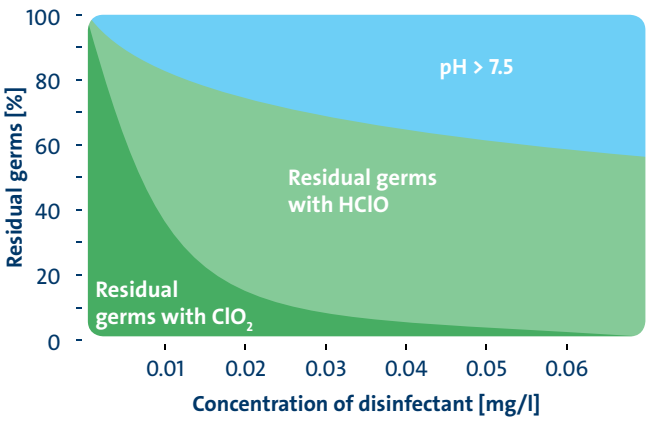
- Sodium chlorite ($NaClO_2$) 7.5 %
- Hydrochloric acid (HCl) 9 %

The following reaction takes place:

$5NaClO_2 + 4HCl \Rightarrow 4ClO_2 + 5NaCl + 2H_2O$

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

Effectiveness diagram



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