

### Overview 1: Common disinfectants for basic disinfection applications

Compound	Chlorine ("Elementary Chlorine")	Chlorine Bleach	Hypochlorite	Hydrogen Peroxide	TwinOxide® (Chlorine Dioxide)
<b>Chemical Formula</b>	Cl <sub>2</sub> , Gas Form	NaOCl/NaOH/Cl <sub>2</sub>	e.g. Ca(OCl) <sub>2</sub>	H <sub>2</sub> O <sub>2</sub>	ClO <sub>2</sub>
<b>Application Form</b>	Defined concentration in liquid solution, "Chlorine Water"	Solution	Defined concentration in liquid solution	Defined concentration in liquid solution	<b>In liquid solution.</b>
<b>Minimum concentration for water disinfection</b>	50mg "free chlorine"/ L	50mg "free chlorine"/ L	50mg "free chlorine"/ L	150mg/L	<b>0,2 mg/L</b>
<b>Micro biocide working</b>	Broad effect against most bacteria, Fungi and (with limits) viruses and protozoan.	See Chlorine	See Chlorine	Not always effective against bacteria, fungi and yeast.	<b>Effective against all in water living micro organisms (including bacteria, fungi, protozoan and viruses)</b>
<b>Working Limitations</b>	In low concentrations "Chlorine Resistance Building"	See Chlorine	See Chlorine	Micro organisms with peroxides-system are extensive protected	<b>No resistance building by targeted micro organisms.</b>
<b>Side Effects</b>	Decrease of pH-values due to building of hydrochloric acid (HCl)	Increase of pH-values by the level of NaOH	Corrosive due to a high level of NaCl	Hardly any corrosive effect on metal. Plastics become brittle.	<b>Very material friendly, pH-neutral etc.</b>
<b>Application Limitations</b>	Not suitable for installation systems with corrosion sensitive materials	See Chlorine	See Chlorine	By catalytic decomposition in water and oxygen no depot effect	<b>No material Limitations</b>

## Overview 2: Germicidal Efficiency of Disinfectants – required Biocide-concentration for Germ Reduction of (RF 5) in 60 Seconds application time for Plactonic Species

(source: R.S. Tanner in J. of Ind. Microbiology 1989 (4), 145 – 154.)

Disinfectant	Disinfectant Effective Component / Level in ppm	Requested Disinfectant Concentration / ppm		
		P. aerugionsoa	S. aureus	S. cerevisae
Sodium Chlorite Solution	Chlorite -Ions / 20.000	1.300	310	640
Sodium Hypochlorite Solution (Chlorine Bleach)	Hypochlorite & Chlorine / 85.000	820	820	1.600
"Iodophor	Complex bounded Iodine / 17.500	440	440	450
Glutaric Aldehyde (contains Tensides)	Glutaric Aldehyde / 20.000	2.300	1.200	620
Hydrogen Peroxide	Hydrogen Peroxide / 300.000	36.000	68.000	270.000
"Quat"	Various quartile Ammonium compounds / 75.000	580	140	74
<b>TwinOxide®</b>	<b>Chlorine Dioxide / 5.000</b>	<b>48</b>	<b>93</b>	<b>85</b>

### Contact

For further information we cordially invite you to contact us:

#### **TwinOxide International B.V.**

De Tongelreep 17  
NL-5684 PZ Best

☎ +31-499-32.92.42  
☎ +31-499-32.96.20  
✉ info@twinoxide.com  
🌐 www.twinoxide.com

Or look for your local distributor at [www.twinoxide.com](http://www.twinoxide.com).

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