

# Summary of CT Value Ranges for Inactivation of Various Microorganisma by Disinfectants

Table 1 is a summary of CT value ranges for the inactivation of various microorganisms by different disinfectants. This table is a compilation of reported CT values taken from various published sources.

CT is defined as disinfectant contact time, the mathematical product of  $C \times T$ , where C is the residual disinfectant concentration measured in mg/L, and T is the corresponding contact time measured in minutes.

All CT values are for 99% inactivation at 5°C except for *Giardia lamblia* and *Cryptosporidium parvum*.

## Application Description

The USEPA published the Stage 2 Microbial and Disinfection Byproducts Federal Advisory Committee Agreement in Principal (Stage 2 M-DBP Agreement) in a Federal Register dated December 29, 2000 (65FR83015). The new agreement indicates that chlorine dioxide is an acceptable treatment approach for management of *Cryptosporidium*.

For more detailed information on sodium chlorite, contact your Siemens Representative.



## Application Note

Microorganism	Disinfectant			
	Free Chlorine pH 6 to 7	Preformed Chloramine pH 8 to 9	Chlorine Dioxide pH 6 to 7	Ozone pH 6 to 7
<i>Escherichia Coli</i>	0.034 - 0.05	95 - 180	0.4 - 0.75	0.02
Polio 1	1.1 - 2.5	768 - 3740	0.2 - 6.7	0.1 - 0.2
Rotavirus	0.01 - 0.05	3806 - 6476	0.2 - 2.1	0.006 - 0.06
<i>Giardia lamblia</i> cysts	47 > 150	2200 <sup>(a)</sup>	26 <sup>(a)</sup>	0.5 - 0.6
<i>Giardia muris</i> cysts	30 - 630	1400.00	7.2 - 18.5	1.8 - 2.0
<i>Cryptosporidium parvum</i>	7200 <sup>(b)</sup>	7200 <sup>(c)</sup>	78 <sup>(c)</sup>	5 - 10 <sup>(b)</sup>

(a) Values for 99% inactivation at pH 6-9.

(b) 99% inactivation at pH 7 and 25°C

(c) 90% inactivation at pH 7 and 25°C

## References

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