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 x 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 Evoqua Representative.
Table 1

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

(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

3. Trihalomethane in Drinking Water, Sampling; Analysis, Monitoring and Compliance, U.S. Environmental Protection Agency, EPA 570/9-83-002, August 1983.
4. Drinking Water; National Primary Drinking Water Regulations; Filtration, Disinfection; Turbidity, Giardia lamblia, Viruses, Legionella, and Heterotrophic Bacteria; Final Rule, Federal Register, June 28, 1989.