

Exhibit #5 CT chart for microcystin

Chlorine contact time values required for reducing microcystin LR concentration to 1 ug/L

Example: If you know the toxin level is 50 ppb and you want to reduce the level down to 1 ppb, with a temperature of 10° C and pH of 7, you will need a CT of 67.7. High pH water takes longer to degrade microcystin.

pH	Microcystin- LR Concentration	CT (mg/l x min)			
		10°C	15°C	20°C	25°C
6	50 ug/l	46.6	40.2	34.8	30.8
	10 ug/l	27.4	23.6	20.5	17.8
7	50 ug/l	67.7	58.4	50.6	44.0
	10 ug/l	39.8	34.4	29.8	25.9
8	50 ug/l	187.1	161.3	139.8	121.8
	10 ug/l	110.3	94.9	82.8	71.7
9	50 ug/l	617.2	526.0	458.6	399.1
	10 ug/l	363.3	309.3	269.6	234.9

- Westrick (2008) created a CT table based on research published by Acero et al., 2005.

Ozone treatment- Table 5.4 on page 87 of this link ([Treating Algal Toxins using Oxidation, Adsorption and Membrane Technologies](#), Water Research Foundation, 2010) shows the dose needed to achieve 80% removal of microcystin.