

Cyanuric Acid

(Chlorine Stabilizer or Pool Water Conditioner)

Cyanuric acid (CYA) is used in pool water to protect the chlorine from the sun's UV. It does this by forming a weak molecular bond with the chlorine, thus keeping it in the water. This bond, however, does slow down the killing rate of hypochlorous acid. The rule of thumb for the amount of CYA is about ten times the amount of chlorine you want to protect. For example, if you want to protect 4 ppm of free available chlorine, all you need is 40 ppm of CYA. The ideal level of CYA is 30-50 ppm.

The effectiveness of CYA stabilizing chlorine will peak out at about 80ppm. Higher levels will not significantly protect chlorine any more from the sun. However, higher levels of CYA does continue to slow down the killing rate of the hypochlorous acid. Cyanuric acid levels of 100, 150, 200 or higher will slow down the killing rate of chlorine to the point that it may not keep up with the reproduction rate of an algae bloom, or may not keep up with the pathogens being introduced from various sources creating an unhealthy environment.

Table 5 is the guideline that shows the amount of chlorine needed to disinfect as the CYA levels go up, given an equivalent killing rate. These chlorine/CYA ratios should be followed to maintain a healthy pool.

Chlorine / CYA Chart				
CYA (ppm)	Free available Chlorine (ppm)			
	Minimum (≈7.5% of CYA)	Target (≈11.5% of CYA)	Shock/Algae (≈40% of CYA)	YellowAlgae Kill (≈60% of CYA)
0	.07 ¹	.1 ¹	.7 ¹	2 ¹
10	1 ¹	1.5 ¹	5	7
20	2	3	10	13
30	2	4	12	18
40	3	5	16	24
50	4	6	20	30 ²
60	5	7	24	35 ²
70	5	8	28 ²	41 ²
80	6	9	31 ²	46 ²
90	7	10	35 ²	52 ²
100	7	12	39 ²	58 ²
120	9	14	47 ²	68 ²

Table 5

¹A minimum FC level is needed as a "reserve" for usage so in practice at least 2 ppm FC is required even at low CYA levels. The table above shows the amount needed for disinfecting chlorine for equivalent killing power (rates), but does not take into account the amount needed in reserve to prevent getting used up as this varies by pool.

²The shock levels shown have equivalent disinfecting chlorine amounts (in a column) but at high CYA levels it may be impractical to use such high FC levels. A partial drain/refill to lower the CYA level is usually what is needed or one can shock at a lower level but will take longer to kill the algae.

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