Cyanuric Acid

(Chlorine Stabilizer / 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 (HOCL).

To ensure there is enough active chlorine (hypochlorous acid) to keep a healthy swimming pool and to prevent algae when using CYA, the measured FC level should be at least 7.5 percent of the amount of CYA. For example: if the CYA level is 50ppm then the measured residual FC should be at least 3.75 (4ppm).

High levels of CYA -- i.e , 100, 200 and higher -- will require impractical high levels of chlorine to prevent algae and to ensure the inactivation of harmful bacteria and other pathogens that may be introduced into the swimming pool. When CYA levels are this high, then supplemental chemicals (algaecides, oxidizers, phosphate removers, etc.) can be used to help prevent algae and to help keep the pool safe.

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				
	Free available Chlorine (ppm)			
CYA (ppm)	**Minimum** (≈7.5% of CYA)	**Target** (≈11.5% of CYA)	**Shock/Algae** (≈40% of CYA)	**Yellow Algae 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

[1]A 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.

[2]The 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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