

Free Chlorine:	The chlorine concentration remaining in the pool or spa available for effective and rapid destruction of bacteria.
Combined Chlorine:	Chlorine that has combined with organic material in the pool or spa water, such as perspiration and body oils, forming compounds known as chloramines.
Total Chlorine:	The total of all the free chlorine and of the combined chlorine.
Chloramines:	Compounds formed when chlorine combines with nitrogen from urine, perspiration, etc. Chloramines cause eye and skin irritations as well as a strong chlorine smell and unpleasant ammonia like odors.
Breakpoint Chlorinations:	The addition of small amounts of chlorine to the water to reduce or eliminate combined chlorine and at the same time increase the free chlorine level.
Super Chlorination:	The addition of an extra large dose of chlorine (25 ppm to 40 ppm) to oxidize organic compounds, other contaminants and help control algae.

HOW TO DETERMINE BREAKPOINT CHLORINATION

Step 1: Determine the free chlorine level in the pool/spa. DPD #1 tablet or liquid.

Step 2: Determine the total chlorine level in the pool/spa. DPD #3 tablet or liquid.

Step 3: Subtract the free chlorine level from the total chlorine level. The result is the combined chlorine level.

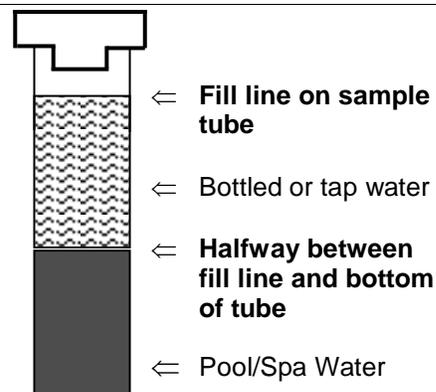
Step 4: Multiply the combined chlorine level by 10. This results in the level, in ppm, needed to reach breakpoint chlorination.

Example: Free chlorine level = 0.8 ppm
 Total chlorine level = 1.2 ppm
 Combined chlorine level is 1.2 ppm - 0.8 ppm = 0.4 ppm
 Breakpoint chlorination level is 0.4 ppm x 10 = 4.0 ppm

After adding the correct amount of chlorine (refer to dosage chart), determine the free and total chlorine levels. If the levels are the same, the breakpoint level was reached.

HIGH CHLORINE LEVEL READINGS/DILUTIONS

When high chlorine readings are found, or levels are at the top range of the test kit, dilutions are needed to obtain accurate and usable results. There is a simple and easy way to accomplish this. First purchase a container of bottled drinking water. If unavailable, tap water may be used. Next take the tube from your test kit used for the sample and, with a permanent marker, mark the halfway point on the tube. With this mark in place, fill the tube with the pool or spa water to the mark just made. Then add bottled drinking water or tap water to the top mark of the tube. Add reagents as usual. Read the results. Multiply the results by 2. This is the reading in ppm. This method will allow you to read higher chlorine levels with your test kit.



CYANURIC ACID: Also known as stabilizer or conditioner. It stops sunlight from dissipating chlorine strength.

Cyanuric Acid level should not exceed 90 ppm. The best level is 30 to 50 ppm. If level is too high, the following can be done:

1. Drain water from pool or spa and replace with fresh water and clean side of pool/spa as it drains.
2. Backwash one to two inches of water to waste weekly and refill with fresh water.

NOTE: The higher the level of cyanuric acid, the larger amount of water must be replaced.

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