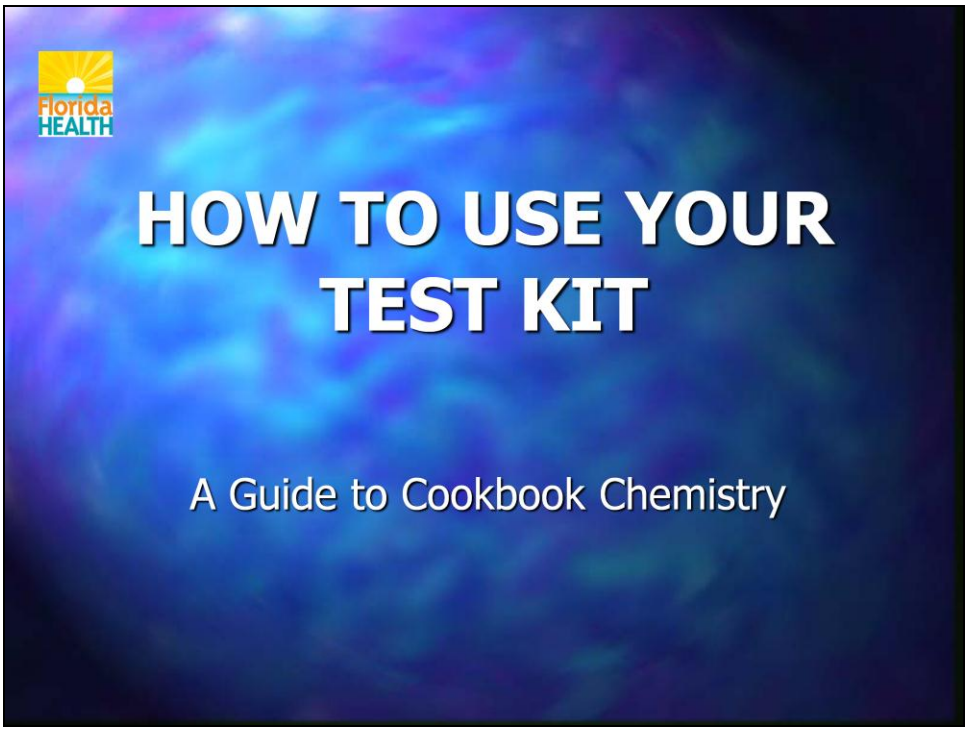


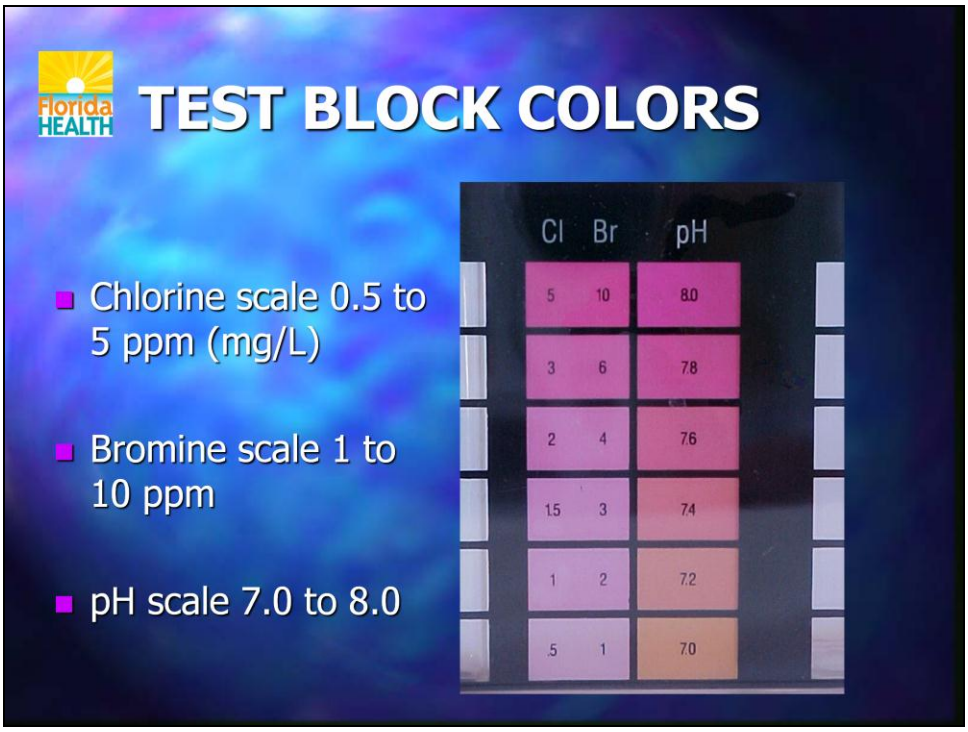
How to use your test kit – A guide to cookbook chemistry

There are step-by-step instructions inside your test kit. They are color coded to the bottles so you can test easily. Your kit will test for free and total chlorine, calcium hardness, total alkalinity, cyanuric acid and pH. There are also base and acid demand tests that can be performed.

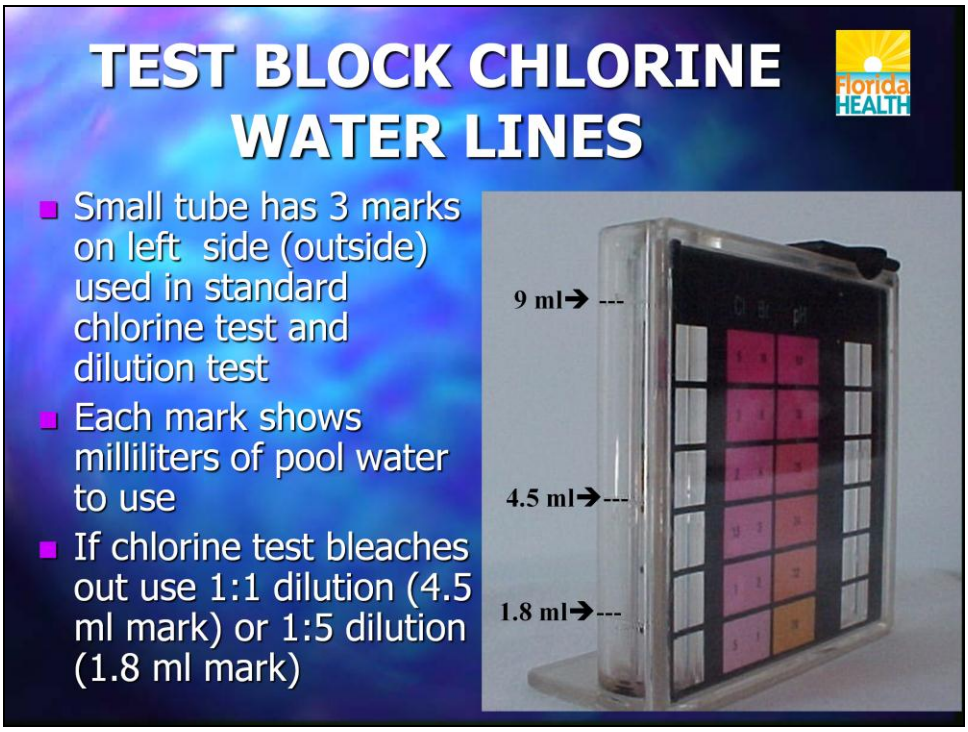
TEST BLOCK

- Color scale for chlorine, bromine and pH
- Small and Large comparator tubes

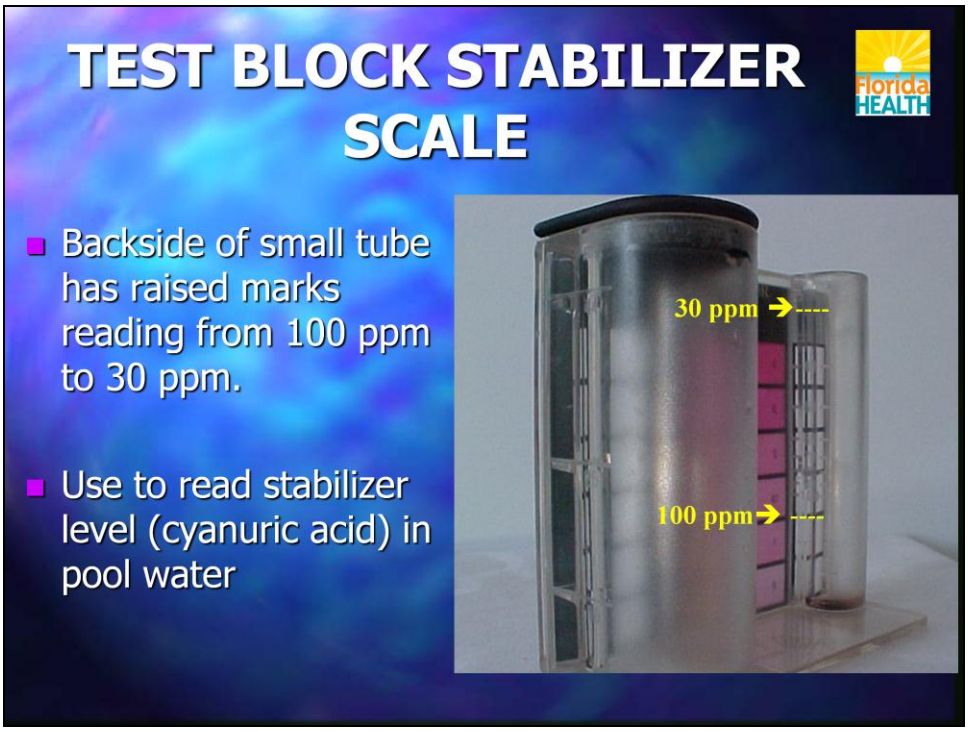
. Your test block has a color scale to test for chlorine, bromime and pH. The smaller comparator tube is for chlorine and bromine, the larger tube is for pH.



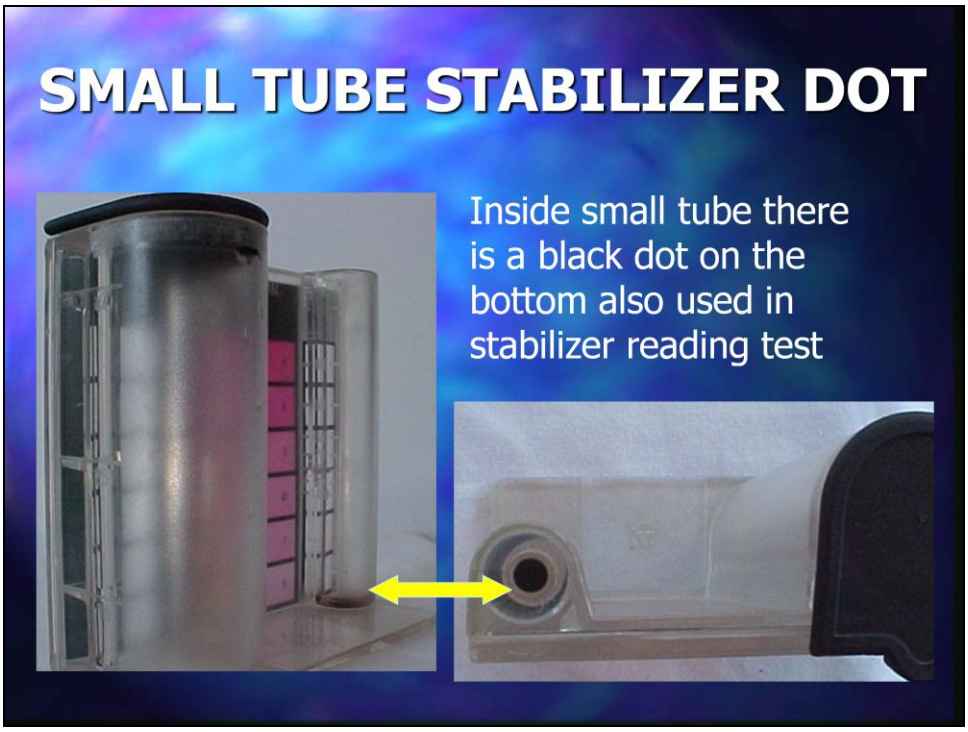
The chlorine scale measures from 0.5 to 5ppm, the bromine scale measures 1 to 10ppm, and the pH scale measures 7.0 to 8.0.



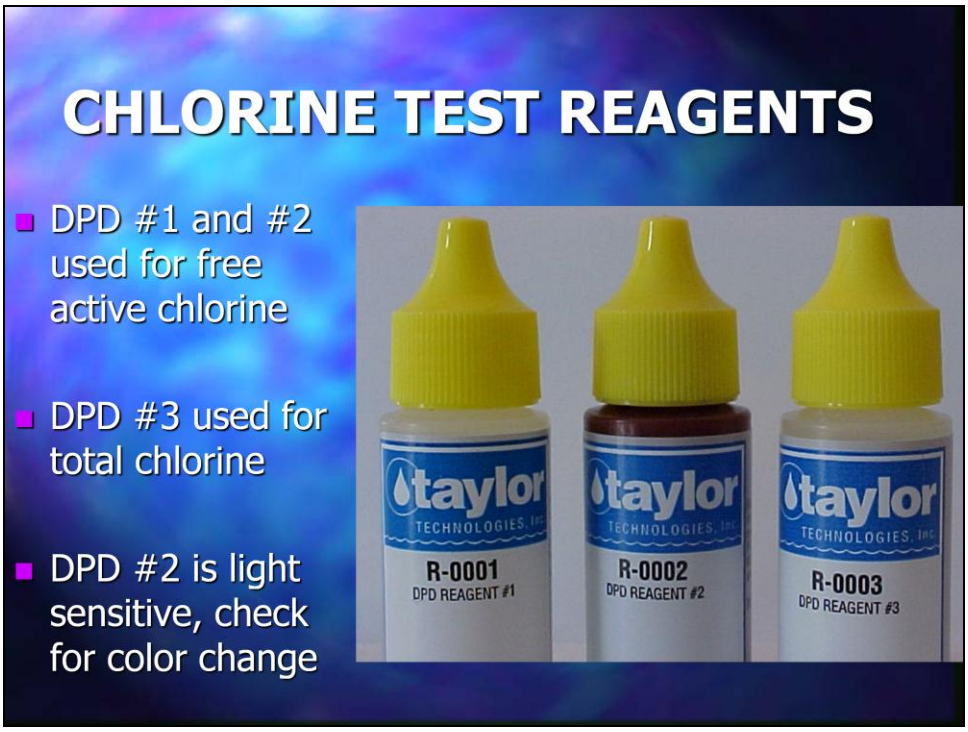
The small tube has three marks on the outside that are used in the standard chlorine test and dilution test. Each mark shows how many milliliters of pool water to use. If your chlorine test bleaches out you can use a one-to-one dilution using the 4.5ml mark, or a one-to-five dilution using the 1.8ml mark.



The inside of the small tube has raised marks reading from 100ppm to 30ppm. These are used to read the stabilizer level in the pool water.

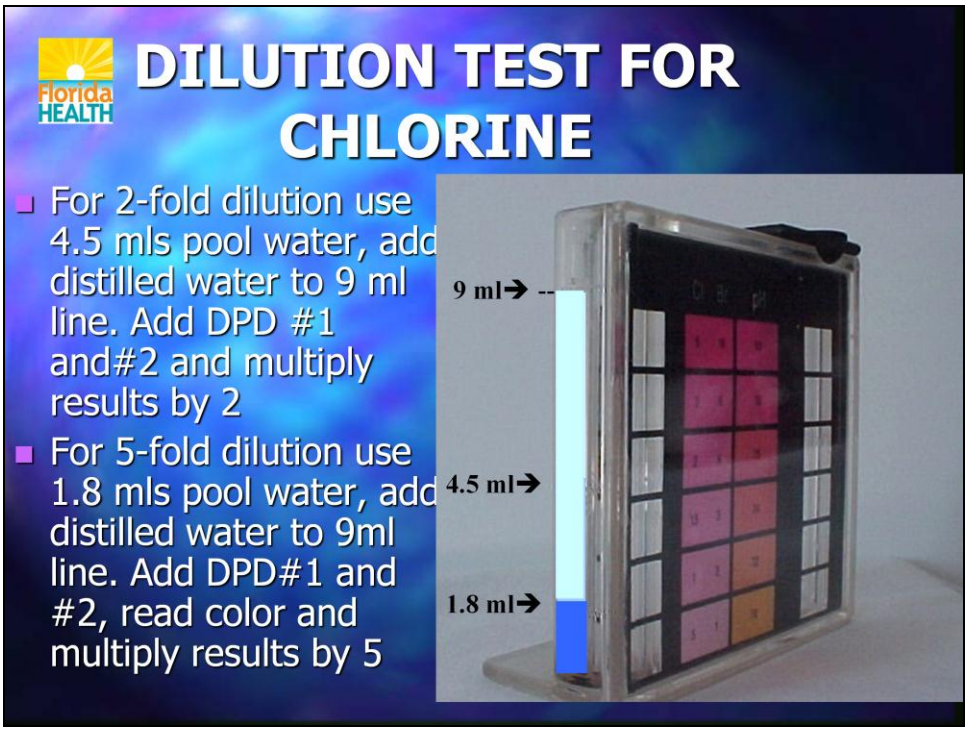


Inside the small tube there is a black dot on the bottom that is also used to read the stabilizer level.



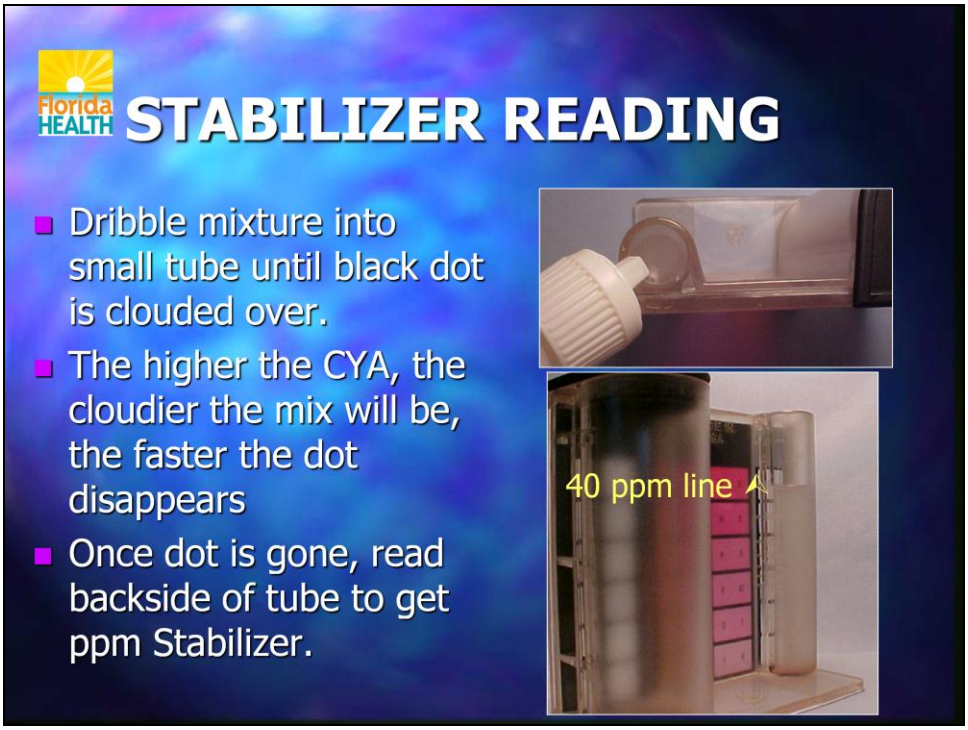
DPD reagents #1 and #2 are used to measure free active chlorine, and DPD #3 is used to measure total chlorine. DPD #2 is light sensitive, which is why it comes in a darker bottle. Keep an eye on your #2 for color changes, meaning the reagent is no longer good.

To test for free active chlorine, first fill the small comparator tube to the 9ml mark. Next, add 5 drops each of #1 and then #2. You can use a dilution technique if your chlorine reading is higher than 5ppm or if the reading flashes out from pink to clear.

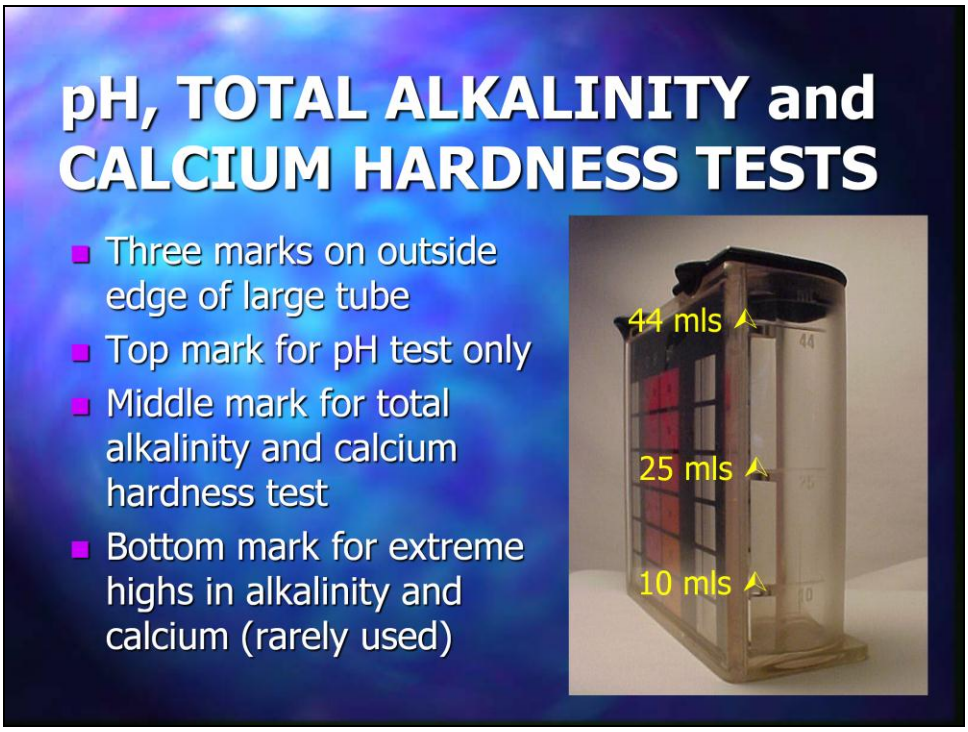


For a two-fold dilution, use 4.5mls of pool water and add distilled water to the 9ml mark. Add DPD #1 and #2, read the color and multiply the results by 2. For a five-fold dilution, use 1.8mls of pool water; add distilled water to the 9ml mark. Add DPD #1 and #2, read the color and multiply the results by 5.

For the stabilizer test fill the small bottle to the halfway mark with pool water, then fill the rest of the bottle with R-0013 (cyanuric acid reagent). Put on the lid and shake the bottle for 30 seconds. You should always keep a big supply of R-0013 with you.



To read your stabilizer, dribble the mixture from the small bottle into the smaller comparator tube until the black dot in the bottom is clouded over. Once the dot is gone you can read the inside of the tube to get your stabilizer reading. The more cyanuric acid there is in the water the faster the dot will disappear.



For the pH, total alkalinity and calcium hardness tests there are three marks on the outside edge of the larger comparator tube. The top mark is used for pH testing only. The middle mark is used for the total alkalinity and calcium hardness tests and the bottom mark is used for cases where you may have extreme highs in the total alkalinity or calcium hardness.

To perform the pH test fill the large comparator tube to the 44ml mark with pool water add 5 drops of R-0004 and mix. To read your pH, compare the color in the tube with the color block to determine the correct pH. If your pH is high you can perform an acid demand test, or a base demand test if it's low.

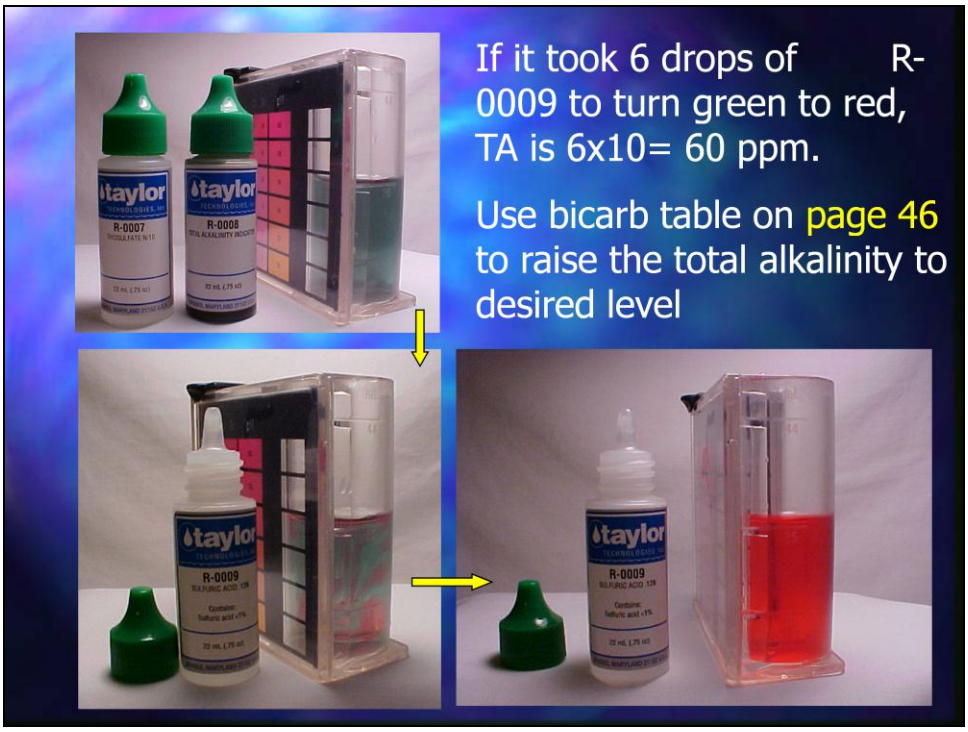
The pH reagents in your test kit come with a bottle of acid and a bottle of soda ash. If your pH is too low, like in this picture, it's too acidic and requires base. Use the base demand and add drops to the large tube until the pH becomes the desired color. Count the drops as you add them and use the table provided under "resources" to convert the drops added to the comparator to the amount you need for your pool to bring the pH up. The same works for the acid demand test.

Table 4-9: Raising pH using soda ash (sodium carbonate)

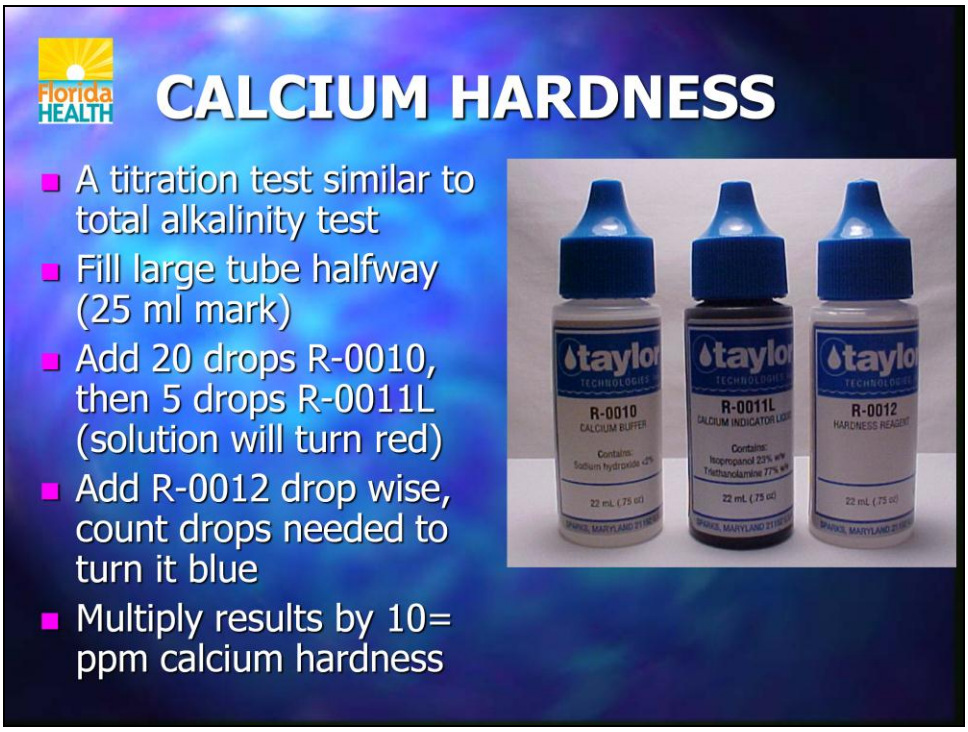
Drops of Base Demand	Volume of water (gallons)						
Reagent	250	400	1000	5000	20000	50000	100000
1	0.13oz	0.21 oz	0.52 oz	2.60 oz	10.4 oz	1.63 lb	3.25 lb
2	0.26 oz	0.42 oz	1.04 oz	5.20 oz	1.30 lb	3.25 lb	6.50 lb
3	0.39 oz	0.62 oz	1.56 oz	7.80 oz	1.95 lb	4.88 lb	9.75 lb
4	0.52 oz	0.83 oz	2.08 oz	10.4 oz	2.60 lb	6.50 lb	13.0 lb
5	0.65 oz	1.04 oz	2.60 oz	13.0 oz	3.25 lb	8.13 lb	16.3 lb
6	0.78 oz	1.25 oz	3.12 oz	15.6 oz	3.90 lb	9.75 lb	19.5 lb
7	0.91 oz	1.46 oz	3.64 oz	1.14 lb	4.55 lb	11.4 lb	22.8 lb
8	1.04 oz	1.66 oz	4.16 oz	1.30 lb	5.20 lb	13.0 lb	26.0 lb
9	1.17 oz	1.87 oz	4.68 oz	1.46 lb	5.85 lb	14.6 lb	29.2 lb
10	1.30 oz	2.08 oz	5.20 oz	1.63 lb	6.50 lb	16.3 lb	32.6 lb

This table is similar to the one you will find in your book to determine how much sodium bicarbonate, or soda ash, is needed to bring your pH up to the proper level. In this example we added 5 drops of base demand to our comparator and since we have a 20,000 gal pool we can determine that 3.25 pounds of sodium bicarb should be added to the pool.

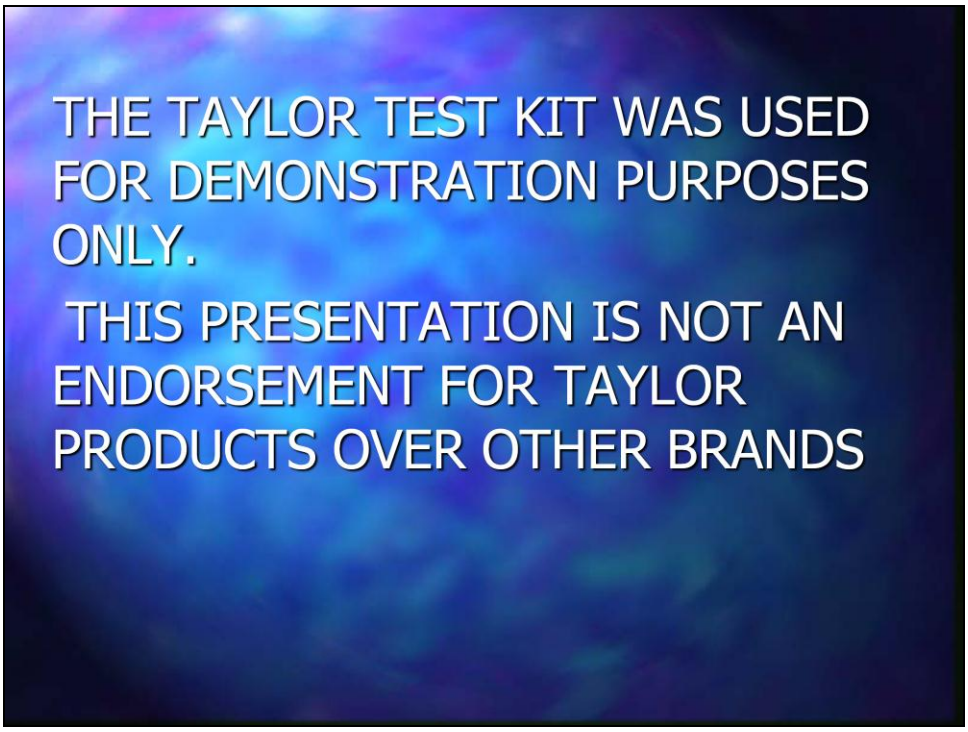
The total alkalinity test is a titration test, which is measuring an amount of a chemical needed to create a reaction. Fill the larger comparator tube to the middle line, and add 2 drops of R-0007. Add 5 drops of R-0008 to turn the liquid green. Add drops of R-0009 and count how many are needed to turn the liquid red. Multiply that number by 10 to determine the total alkalinity of the pool.



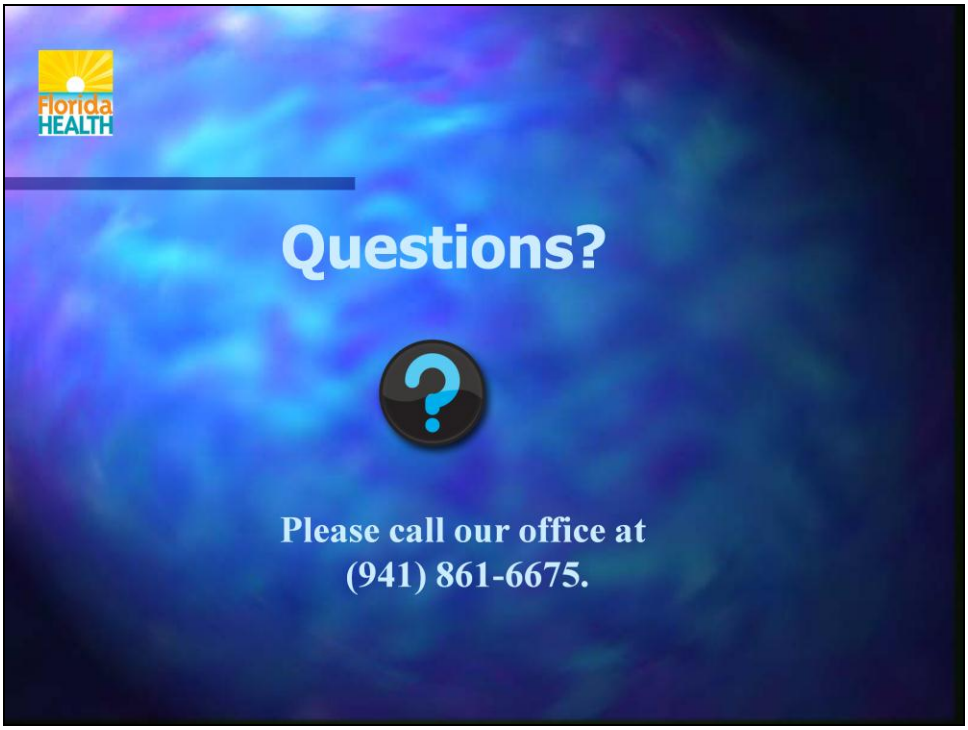
. In this example, if it took 6 drops of R-0009 to turn the liquid from green to red, then the total alkalinity of the pool would be 60ppm. You can use the bicarb table in your book to determine how to raise the total alkalinity to the desired level.



The calcium hardness test is a titration test like total alkalinity. Fill the larger comparator tube to the middle line, and add 20 drops of R-0010, then add 5 drops of R-0011L to turn the liquid red. Add R-0012 and count how many drops are needed to turn the liquid blue. Multiply the number by 10 to determine the calcium hardness of the pool.



The Taylor test kit in this presentation was used for demonstration purposes only. The Health Department does not endorse Taylor or recommend it's products over any other brands.



If you have any questions about anything that was discussed, please give us a call.