

Guardex™



4-in-1 Plus® DPD POOL TEST KIT



This kit performs the following tests:

- Free Chlorine
- Total Chlorine
- Total Bromine
- pH
- Acid Demand
- Total Alkalinity

TESTING TIPS

- Take water sample to be tested about 18" (45 cm) below the surface of the water, away from inlets or returns.
- When adding drops of solution, hold the bottle vertically and add drops slowly to ensure proper drop size, swirling the sample after each drop.
- Perform the tests out of direct sunlight and read the results facing away from the light. Use the white card supplied with the kit as a background to facilitate easy reading.
- Store your test kit out of direct sunlight in a cool place.
- Replace the test kit reagents yearly to ensure accurate testing results. Your local Guardex dealer carries the complete line of replacement reagents.
- For quicker reading, highlight the line on the acid and base demand charts which match your pool volume.
- The Acid Demand test (#3) requires knowing your pool volume. If you do not know your pool volume, calculate it using one of the following formulas:



RECTANGULAR POOLS

Pool volume (in gallons) = Length (in feet) x Width (in feet) x Average Depth (in feet) x 7.5



CIRCULAR POOLS

Pool volume (in gallons) = Diameter (in feet) x Diameter (in feet) x Average Depth (in feet) x 5.9



OVAL POOLS

Pool volume (in gallons) = Long Diameter (in feet) x Short Diameter (in feet) x Average Depth (in feet) x 5.9

AMOUNT OF SODIUM BISULFATE (Dry Acid) REQUIRED TO LOWER pH

Volume of Water	DROPS OF ACID DEMAND (GUARDEX SOL. 3)										
	1	2	3	4	5	6	7	8	9	10	
250 gal.	1-1/4 Tsp.	2 Tsp.	1 Tbs.	1-1/4 Tbs.	1-3/4 Tbs.	2 Tbs.	2-1/2 Tbs.	2-3/4 Tbs.	3 Tbs.	3-1/4 Tbs.	
500 gal.	2 Tsp.	1-1/4 Tbs.	2 Tbs.	2-3/4 Tbs.	3-1/4 Tbs.	4 Tbs.	4-3/4 Tbs.	5-1/4 Tbs.	6 Tbs.	6-3/4 Tbs.	
750 gal.	1 Tbs.	2 Tbs.	3 Tbs.	4 Tbs.	5 Tbs.	6 Tbs.	7 Tbs.	8 Tbs.	9 Tbs.	10 Tbs.	
1,000 gal.	1-1/4 Tbs.	2-3/4 Tbs.	4 Tbs.	5-1/4 Tbs.	6-3/4 Tbs.	8 Tbs.	9-1/4 Tbs.	10-3/4 Tbs.	12 Tbs.	13-1/2 Tbs.	
2,500 gal.	0.2 Lb.	0.3 Lb.	0.5 Lb.	0.6 Lb.	0.8 Lb.	0.9 Lb.	1.1 Lb.	1.3 Lb.	1.4 Lb.	1.6 Lb.	
5,000 gal.	0.3 Lb.	0.6 Lb.	0.9 Lb.	1.3 Lb.	1.6 Lb.	1.9 Lb.	2.2 Lb.	2.5 Lb.	2.8 Lb.	3.1 Lb.	
10,000 gal.	0.6 Lb.	1.3 Lb.	1.9 Lb.	2.5 Lb.	3.1 Lb.	3.8 Lb.	4.4 Lb.	5.0 Lb.	5.6 Lb.	6.3 Lb.	
20,000 gal.	1.3 Lb.	2.5 Lb.	3.8 Lb.	5.0 Lb.	6.3 Lb.	7.5 Lb.	8.8 Lb.	10.0 Lb.	11.3 Lb.	12.5 Lb.	
30,000 gal.	1.9 Lb.	3.8 Lb.	5.6 Lb.	7.5 Lb.	9.4 Lb.	11.3 Lb.	13.1 Lb.	15.0 Lb.	16.9 Lb.	18.8 Lb.	

Tsp. = Teaspoon

Tbs. = Tablespoon

3 Teaspoons = 1 Tablespoon

16 Tablespoons = 1 Cup

Muriatic Acid Equivalents:

1 tsp. of Dry Acid = 1.2 tsp. Muriatic Acid
 1 tbl. of Dry Acid = 3.6 tsp. Muriatic Acid
 1 lb. of Dry Acid = 1.5 cups Muriatic Acid

Guardex



CHLORINE RESIDUAL

A. FREE AVAILABLE CHLORINE (FAC)

1. Fill small vial to line.
2. Add 1 DPD #1 tablet.
3. Cap the vial and shake vigorously to dissolve the tablet.
4. Immediately compare color in vial with chlorine standards to determine Free Available Chlorine (FAC).

B. TOTAL AVAILABLE CHLORINE (TAC)

1. Add one DPD #3 tablet to the water sample used in "A".
2. Cap the vial and shake vigorously to dissolve tablet.
3. Compare color in vial with chlorine standards to determine Total Available Chlorine (TAC).

TOTAL ACTIVE BROMINE (TAB) RESIDUAL

1. Fill small vial to line.
2. Add 1 DPD #1 tablet.
3. Cap the vial and shake vigorously to dissolve tablet.
4. Compare color in vial with bromine standards to determine Total Active Bromine.

Do not perform following tests if total available chlorine exceeds 3 ppm or if total active bromine exceeds 6.0 ppm.

DIRECTIONS

Testing Tips

Draw water samples from a depth of about 18" (45 cm)

4-in-1 Plus-DPD

This test kit instruction card has permanent adhesive. Remove the backing and mount inside the test kit cover or other convenient location.

pH LEVEL

1. Fill large vial to top (solid) line.
2. Add 1 drop of solution 4 (Neutralizer) and mix by swirling.
3. Add 5 drops of solution 2 (pH Indicator) and mix by swirling.
4. Compare color with pH color standards.

ACID DEMAND If pH above 7.6

1. Use sample from pH test.
2. Counting each drop, add Solution 3 (acid demand) and swirl until color matches approximately 7.4.
3. Refer to Acid Demand Chart for proper amount of dry acid needed for your pool.

TOTAL ALKALINITY

1. Fill large vial to lower dash line.
2. Add 1 drop of solution 4 (Neutralizer) and mix by swirling.
3. Add 1 drop of solution 5B (Alkalinity Increaser) and mix by swirling.
4. Add Solution 3 (Alkalinity Titrant) until color changes to clear, light yellow or light green. While adding Solution 3 count each drop and swirl.
5. Multiply drops of Solution 3 used by 10 to determine total alkalinity in ppm.

Refer to Test Kit Booklet for more detailed information about these tests.

HS025TR1
11/99

UK POOL STORE

