Guidebook (#2004B) amplifies these instructions and should be read to use this product properly.

POOL & SPA WATER TESTS

1. Keep test kit out of reach of children.
2. Read precautions on all labels.
3. Store test kit in cool, dark place.
4. Replace reagents once each year.
5. Do not dispose of solutions in pool or spa.
6. Rinse cells / tubes before and after each test.
7. Obtain samples 18" (45 cm) below water surface.
8. Hold dropper bottle vertically when dispensing reagent.

Instr. #5510

Free, Combined & Total Chlorine Test

1. Rinse and fill test cells to mark with water to be tested.

NOTE: For low chlorine Slide™ (#9082), 0-3.0 ppm, use 11.5 mL test cells (#4024). For high chlorine Slide™ (#9083), 1.0-10 ppm, use 5 mL test cells (#4025).

2. Wipe dry and place in three center slots of comparator base WITH FROSTED SIDE FACING OPERATOR.
3. Add 5 drops R-0001 DPD Reagent #1 and 5 drops R-0002 DPD Reagent #2 to center test cell. Cap and invert to mix.
4. Wipe dry and place in center slot of comparator base.
5. Match color with color standard. Record as parts per million (ppm) free chlorine (Cl_2).
6. Add 5 drops R-0003 DPD Reagent #3. Cap and invert to mix.
7. Wipe dry and place in center slot of comparator base.
8. Match color immediately. Record as ppm total chlorine (Cl_2).
9. Subtract free chlorine (FC) from total chlorine (TC). Record as ppm combined chlorine (CC) as Cl_2.
   Formula: TC - FC = CC.

Total Bromine Test

1. Rinse and fill test cells to mark with water to be tested.

NOTE: For low bromine Slide™ (#9079), 0-3.0 ppm, use 11.5 mL test cells (#4024). For high bromine Slide™ (#9236), 2.0-10 ppm, use 5 mL test cells (#4025).

2. Wipe dry and place in three center slots of comparator base WITH FROSTED SIDE FACING OPERATOR.
3. Add 5 drops R-0001 DPD Reagent #1 and 5 drops R-0002 DPD Reagent #2 to center test cell. Cap and invert to mix.
4. Wipe dry and place in center slot of comparator base.
5. Match color with color standard. Record as parts per million (ppm) total bromine (Br_2).

pH Test

1. Rinse and fill 11.5 mL test cells (#4024) to 11.5 mL mark with water to be tested.
2. Wipe dry and place in three center slots of comparator base WITH FROSTED SIDE FACING OPERATOR.
3. Using a 1.0 mL pipet (#4030), add 0.5 mL R-1003J pH Indicator to center test cell. Cap and invert to mix.
4. Wipe dry and place in center slot of comparator base.
5. Match color with color standard. Record as pH units and save sample if pH needs adjustment. If sample color is between two values, pH is average of the two. To LOWER pH: See Acid Demand Test. To RAISE pH: See Base Demand Test.

Acid Demand Test

1. Use treated sample from pH test.
2. Add R-0853 Acid Demand Reagent dropwise. After each drop, count, cap and invert to mix, and compare with color standards until desired pH is matched. See Treatment Tables to continue.

Base Demand Test

1. Use treated sample from pH test.
2. Add R-0862 Base Demand Reagent dropwise. After each drop, count, cap and invert to mix, and compare with color standards until desired pH is matched. See Treatment Tables to continue.

NOTE: pH Indicator, Acid Demand Reagent, and Base Demand Reagent used for Midget™ and Slide™ comparators are not interchangeable with 2000 Series™ comparators. That is, reagents R-0004, R-0005, and R-0006 cannot be substituted for reagents R-1003J, R-0853, and R-0862.

Total Alkalinity (TA) Test

1. Rinse and fill sample tube (#9198) to 25 mL mark with water to be tested.*
2. Add 2 drops R-0007 Thiosulfate N/10. Swirl to mix.
3. Add 5 drops R-0008 Total Alkalinity Indicator. Swirl to mix. Sample will turn green.
4. Add R-0009 Sulfuric Acid .12N dropwise, swirling and counting after each drop, until color changes from green to red.
5. Multiply drops in Step 4 by 10. Record as parts per million (ppm) total alkalinity as calcium carbonate ($CaCO_3$).

* ***When high TA is anticipated***: Use 10 mL sample, 1 drop R-0007, 3 drops R-0008, and multiply drops in Step 4 by 25.

Calcium Hardness (CH) Test

1. Rinse and fill sample tube (#9198) to 25 mL mark with water to be tested.*
2. Add 20 drops R-0010 Calcium Buffer. Swirl to mix.
3. Add 5 drops R-0011L Calcium Indicator Liquid. Swirl to mix. If calcium hardness is present, sample will turn red.
4. Add R-0012 Hardness Reagent dropwise, swirling and counting after each drop, until color changes from red to blue.
5. Multiply drops in Step 4 by 10. Record as parts per million (ppm) calcium hardness as calcium carbonate ($CaCO_3$).

* ***When high CH is anticipated***: Use 10 mL sample, 10 drops R-0010, 3 drops R-0011L, and multiply drops in Step 4 by 25.

Total Hardness (TH) Test

1. Rinse and fill sample tube (#9198) to 25 mL mark with water to be tested.
2. Add 10 drops R-0854 Total Hardness Reagent. Swirl to mix. If total hardness is present, sample will turn red.
3. Add R-0012 Hardness Reagent dropwise, swirling and counting after each drop, until color changes from red to blue.
4. Multiply drops in Step 3 by 10. Record as parts per million (ppm) total hardness as calcium carbonate ($CaCO_3$).

Magnesium Hardness (MH) Test

1. Subtract calcium hardness (CH) from total hardness (TH). Record as ppm magnesium hardness (MH) as calcium carbonate ($CaCO_3$).
   Formula: TH - CH = MH.

Cyanuric Acid (CYA) Test

1. Rinse and fill bottle (#9194) to 15 mL mark with water to be tested.
2. Add R-0013 Cyanuric Acid Reagent to neck. Cap and mix for 30 seconds.
3. Slowly transfer cloudy solution to test tube (#9193) until black dot on bottom just disappears when viewed from top.
4. Read test tube at liquid level. Record reading as parts per million (ppm) cyanuric acid (CYA).

Copper Test

1. Rinse and fill 11.5 mL test cells (#4024) to 11.5 mL mark with water to be tested.
2. Wipe dry and place in three center slots of comparator base WITH FROSTED SIDE FACING OPERATOR.
3. Using a 1.0 mL pipet (#4030), add 0.5 mL R-0860 Copper Reagent #1 to center test cell. Using a separate 1.0 mL pipet, add 0.5 mL R-0861 Copper Reagent #2. Cap and invert to mix.
4. Wipe dry and place in center slot of comparator base. WAIT 5 MINUTES.
5. Match color with color standard. Record as parts per million (ppm) copper (Cu).

Iron Test

1. Rinse and fill 11.5 mL test cells (#4024) to 11.5 mL mark with water to be tested.
2. Wipe dry and place in three center slots of comparator base WITH FROSTED SIDE FACING OPERATOR.
3. Using a 1.0 mL pipet (#4030), add 0.5 mL R-0851 Iron Reagent #1 to center test cell. Cap and invert to mix. WAIT 2 MINUTES.
4. Using a separate 1.0 mL pipet, add 1.0 mL R-0852 Iron Reagent #2. Cap and invert to mix.
5. Wipe dry and place in center slot of comparator base.
6. Match color with color standard. Record as parts per million (ppm) iron (Fe).

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SLIDE™ COMPARATOR SYSTEM
GENERAL INSTRUCTIONS

Taylor Slide™ comparators offer systems for colorimetrically determining solute levels in industrial, natural, and recreational waters. In each test, a liquid sample is treated with reagents causing a color to develop. The treated sample is then placed in the comparator base and compared to the liquid-color standards in the Slide. A color match is made and the concentration of the substance is read from the values on the Slide.

The unique Taylor colorimetric system compensates for cloudy or colored samples by using three cells. Two untreated samples are positioned on both sides of the treated sample, providing a more accurate color match.

To ensure accurate results, the following should be observed:

1. **Use the proper test cell.** There are two different test cells used in the Slide comparator system: the 11.5 mL test cell (#4024), used in most tests; and the 5 mL test cell (#4025), used in tests requiring shorter viewpaths. Both test cells are used in the Enslow Base (#9189). Glass 5 mL test tubes (#4023) are used in the pH base (#9190).
2. **Always place the test cells with the frosted side facing the operator.** This is required for proper light diffusion.
3. **Use three test cells (test tubes) for each test.** Two should be filled to the mark with the untreated sample and placed on both sides of the center compartment of the comparator base. The third test cell (test tube) is used for treating the sample with reagents and is placed in the center compartment of the comparator base.
4. **Align the appropriate Slide on the comparator base for a color match.** To determine the concentration of solute in the sample, move the Slide until a color match is obtained. The Slide is in proper alignment for a color match when a white line on the Slide is directly above the white line on the comparator base.
5. **Use a proper light source.** Hold the comparator system up to natural daylight or, preferably, use a daylight simulator (#9199). Artificial light (incandescent or fluorescent) should not be used.

IMPORTANT

1. Guidebook (#2004B) amplifies these instructions.
2. Keep test kit out of reach of children.
3. Read precautions on all labels.
4. Store test kit in cool, dark place.
5. Replace reagents at least once each year.
6. Rinse test cells (test tubes) before and after each test.
7. Obtain samples 18” (45 cm) below water surface.
8. Hold dropper bottles vertically when dispensing reagents.
9. Do not dispose of solutions in pool or spa.
10. Replace caps on all reagents after use.

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