Counterlab Rx 2™

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

1. Keep reagents out of reach of children.
2. Read precautions on all labels.
3. Replace reagents once each year.
4. Rinse tubes before and after each test.
5. Hold dropper bottle vertically when dispensing reagent.
6. Turn off SpeedStir and Daylight Comparator Lamp after use.
7. Do not lose stirring bar when discarding solution.
8. Keep lab clean and dry.
9. Replace reagent caps after use.

Instr. #5246

Free, Combined & Total Chlorine Test

L-0205

1. Rinse small comparator tube then fill to 9 mL mark with sample water.
2. Turn on Daylight Comparator Lamp. Add 5 drops R-0001 and 5 drops R-0002. Cap and invert to mix.
3. Match color with color standard.* Record as parts per million (ppm) free chlorine (FC).
4. Add 5 drops R-0003. Cap and invert to mix.
5. Match color immediately. Record as ppm total chlorine (TC).
6. Subtract FC from TC to determine combined chlorine (CC). Formula: TC - FC = CC. Record as ppm combined chlorine.

Total Bromine Test

1. Rinse small comparator tube then fill to 9 mL mark with sample water.
2. Turn on Daylight Comparator Lamp. Add 5 drops R-0001 and 5 drops R-0002. Cap and invert to mix.
3. Match color with color standard.* Record as parts per million (ppm) total bromine.

***If color is off scale:** Dilute sample water 1:1 with tap water and repeat test. Multiply reading by 2 for approximate sanitizer level. If color is still off scale: Dilute the sample water 1:4 with tap water and repeat test. Multiply reading by 5 for approximate sanitizer level.

OR

L-0206

1. Remove comparator adapter (#6582).
2. Rinse sample tube (#9198) then fill with sample water. Insert SampleSizer (#6190) to achieve appropriate sample size based on desired drop equivalence (see below).

Drop equivalence:

For normal levels, use 25 mL sample where 1 drop = 0.2 ppm.

For high levels, use 10 mL sample where 1 drop = 0.5 ppm.

3. Carefully place stirring bar in sample tube. Add 2 dippers R-0870.
4. Wipe dry and place on SpeedStir. Turn on SpeedStir. If free chlorine is present, sample will turn pink.

NOTE: R-0870 may not dissolve completely, but this will not affect test results. If pink color disappears, add R-0870 until color stays pink.

5. Add R-0871 dropwise, counting after each drop, until color changes from pink to colorless.
6. Multiply drops in Step 4 by drop equivalence (Step 1). Record as parts per million (ppm) free chlorine.
7. Add 5 drops R-0003. If combined chlorine is present, sample will turn pink.
8. Add R-0871 dropwise, counting after each drop, until color changes from pink to colorless.
9. Multiply drops in Step 7 by drop equivalence (Step 1). Record as ppm combined chlorine.

Total Bromine Test

1. For approximate results as bromine, multiply free chlorine reading (Step 5) by 2.

pH Test

L-0205 & L-0206

1. Rinse large comparator tube then fill with sample water. Insert SampleSizer (#6191) to achieve 44 mL sample.
2. Turn on Daylight Comparator Lamp. Add 5 drops R-0004.
3. Cap and invert to mix.
4. 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. Turn on Daylight Comparator Lamp. Add R-0005 dropwise. After each drop, count, invert to mix, and compare with color standards until desired pH is matched. See Treatment Tables in guidebook (#2004B) to continue.

Base Demand Test

1. Use treated sample from pH test.
2. Turn on Daylight Comparator Lamp. Add R-0006 dropwise. After each drop, count, invert to mix, and compare with color standards until desired pH is matched. See Treatment Tables in guidebook (#2004B) to continue.

Total Alkalinity Test

L-0205 & L-0206

1. Remove comparator adapter (#6582).
2. Rinse sample tube (#9198) then fill with sample water. Insert SampleSizer (#6190) to achieve 25 mL sample.*
3. Carefully place stirring bar in sample tube. Wipe dry and place on SpeedStir. Turn on SpeedStir.
4. Add 2 drops R-0007.
5. Add 5 drops R-0008. Sample will turn green.
6. Add R-0009 dropwise, counting after each drop, until color changes from green to red.
7. Multiply drops in Step 6 by 10. Record as parts per million (ppm) total alkalinity as calcium carbonate (CaCO3).

***When high TA is anticipated:** Use 10 mL sample, 1 drop R-0007, 3 drops R-0008, and multiply drops in Step 6 by 25.

Calcium Hardness Test

L-0205 & L-0206

1. Remove comparator adapter (#6582).
2. Rinse sample tube (#9198) then fill with sample water. Insert SampleSizer (#6190) to achieve 25 mL sample.*
3. Carefully place stirring bar in sample tube. Wipe dry and place on SpeedStir. Turn on SpeedStir.
4. Add 20 drops R-0010.

NOTE: To save time, in place of 20 drops, add 1.0 mL R-0010 using 1.0 mL pipet (#9007).

5. Add 5 drops R-0011L. If calcium hardness is present, sample will turn red.
6. Add R-0012 dropwise, counting after each drop, until color changes from red to blue.
7. Multiply drops in Step 6 by 10. Record as parts per million (ppm) calcium hardness as calcium carbonate (CaCO3).

***When high CH is anticipated:** Use 10 mL sample, 10 drops R-0010 (or 0.5 mL R-0010), 3 drops R-0011L, and multiply drops in Step 6 by 25.

Cyanuric Acid (CYA) Test

L-0205 & L-0206

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. Sample will turn cloudy if cyanuric acid is present.
3. Viewing from top, slowly transfer cloudy solution to graduated test tube (#9193) until black dot on bottom of test tube just disappears.
4. Read graduated test tube at liquid level. Record reading as parts per million (ppm) cyanuric acid (CYA).

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