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

# **Counterlab Rx 2**<sup>™</sup> (using FAS-DPD) 1. Keep reagents out of reach of children.

- Read precautions on all labels.
   Replace reagents once each year.
- Rinse tubes before and after each test.
   Hold dropper bottle vertically when dispensing reagent.
  - eagent. 7. [

6. Turn off SpeedStir and Gepe Slim Lite after use.
7. Do not lose stirring bar when discarding solution.

8. Keep lab clean and dry.

Instr. #5242

## Free & Combined Chlorine Test

- 1. Using SampleSizer **(#6190)**, rinse and fill sample tube (#9198L) to desired mark with water to be tested.
- NOTE: 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.
- Carefully place stirring bar (#6101) in sample tube. Add 2 dippers R-0870. Swirl for 5 seconds. R-0870 will not dissolve completely, but this will not affect test results.
- 3. Wipe dry and place on SpeedStir. Turn on SpeedStir. If free chlorine is present, sample will turn pink.

### NOTE: If pink color disappears, add R-0870 until color turns pink.

- 4. Add R-0871 dropwise, counting after each drop, until color changes from pink to colorles
- 5. Multiply drops in Step 4 by drop equivalence (Step 1). Record as parts per million (ppm free chlorine (Cl.).
- 6. Turn on SpeedStir. Add 5 drops R-0003. If combined chlorine is present, sample will turn pink
- 7. Add R-0871 dropwise, counting after each drop, until color changes from pink to colorles
- 8. Multiply drops in Step 7 by drop equivalence (Step 1). Record as ppm combined chlorine (Cl<sub>2</sub>

#### Total Bromine Test

1. For approximate results as bromine, multiply free chlorine concentration by 2.

#### pH Test

- 1. Using SampleSizer (#6191), rinse and fill sample tube (#9198L) to 44 mL mark with water to be tested.
- 2. Carefully place stirring bar (#6101) in sample tube. Wipe dry and place on SpeedStir. Turn on SpeedStir and Gepe Slim Lite (#9199).
- 3. Add 5 drops R-0004.
- 4. Match color with color standard (#6125T). 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 SpeedStir and Gepe Slim Lite
- 2. Turn on SpeedStir and Gepe Slim Lite. Add R-0005 dropwise. After each drop, count, 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.
- Turn on SpeedStir and Gepe Slim Lite. Add R-0006 dropwise. After each drop, count, and compare with color standards until desired pH is matched. See Treatment Tables in guidebook (#2004B) to continue.

# Total Alkalinity (TA) Test

- 1. Using SampleSizer **(#6190),** rinse and fill sample tube (#9198L) to 25 mL mark with water to be tested.\*
- Carefully place stirring bar (#6101) in sample tube. Wipe dry and place on SpeedStir. Turn on SpeedStir.
- 3. Add 2 drops R-0007.
- 4. Add 5 drops R-0008. Sample will turn green.
- 5. Add R-0009 dropwise, counting after each drop, until color changes from green to red.
- 6. Multiply drops in Step 5 by 10. Record as parts per million (ppm) total alkalinity as calcium carbonate (CaCO<sub>3</sub>).
- \*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 (CH) Test

- Using SampleSizer (#6190), rinse and fill sample tube (#9198L) to 25 mL mark with water to be tested.\*
- 2. Carefully place stirring bar (#6101) in sample tube. Wipe dry and place on SpeedStir. Turn on SpeedStir.
- 3. 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).
- 4. Add 5 drops R-0011L. If calcium hardness is present, sample will turn red.
- 5. Add R-0012 dropwise, counting after each drop, until color changes from red to blue.
- 6. Multiply drops in Step 5 by 10. Record as parts per million (ppm) calcium hardness as calcium carbonate (CaCO<sub>3</sub>).
- \***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

- 1. Rinse and fill CYA cylinder (#4088) to "A" mark with water to be tested.
- Add R-0013 to "B" mark. Move test stick up and down to mix for 30 seconds. WAIT 2 MINUTES. Read before 5 minutes.
- Raise test stick, then slowly lower until black dot on test stick just disappears when viewed from top.
- 4. Read test stick at liquid level. Record as parts per million (ppm) cyanuric acid (CYA).



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