

# DROP TEST

## CALCIUM & TOTAL HARDNESS (1 drop = 2 or 10 ppm)

### COMPONENTS:

1 x 5022	Instruction
1 x 9198B	Sample Tube, Graduated (25 mL) w/ cap & blue dot, plastic
1 x R-0011P-I	Calcium Indicator Powder, 10 g
1 x R-0619B-C	Hardness Buffer, 2 oz w/ light blue cap, DB
1 x R-0620B-I	Hardness Indicator Powder, 10 g w/ blue dot
1 x R-0653-2-C	Calcium Buffer, 2 oz, DB
1 x R-0683-C	Hardness Reagent, 2 oz, DB
1 x R-0806-C	Hardness Reagent, 2 oz, DB

### PROCEDURE:

**CAREFULLY READ AND FOLLOW PRECAUTIONS ON REAGENT LABELS.  
KEEP REAGENTS AWAY FROM CHILDREN.**

NOTE: When dispensing reagents from dropper bottles, **always** hold bottle in a vertical position.

### Calcium Hardness Test

#### For 1 drop = 2 ppm Calcium Carbonate

1. Rinse and fill 25 mL sample tube (#9198B) to 25 mL mark with water to be tested.
2. Add 10 drops R-0653-2 Calcium Buffer. Swirl to mix.
3. Add 1 dipper R-0011P Calcium Indicator Powder. Swirl until dissolved. Sample will turn red (Fig. 1) if calcium hardness is present.
4. Add R-0806 Hardness Reagent dropwise, swirling and counting after each drop, until color changes from red to blue (Fig. 2).
5. Multiply drops of R-0806 Hardness Reagent by 2. Record as parts per million (ppm) calcium hardness as calcium carbonate ( $\text{CaCO}_3$ ).

#### For 1 drop = 10 ppm Calcium Carbonate

1. Rinse and fill 25 mL sample tube (#9198B) to 25 mL mark with water to be tested.
2. Add 10 drops R-0653-2 Calcium Buffer. Swirl to mix.

3. Add 1 dipper R-0011P Calcium Indicator Powder. Swirl until dissolved. Sample will turn red (Fig. 1) if calcium hardness is present.
4. Add R-0683 Hardness Reagent dropwise, swirling and counting after each drop, until color changes from red to blue (Fig. 2).
5. Multiply drops of R-0683 Hardness Reagent by 10. Record as parts per million (ppm) calcium hardness as calcium carbonate ( $\text{CaCO}_3$ ).

### Total Hardness Test

#### For 1 drop = 2 ppm Calcium Carbonate

1. Rinse and fill 25 mL sample tube (#9198B) to 25 mL mark with water to be tested.
2. Add 5 drops R-0619B Hardness Buffer. Swirl to mix.
3. Add 1 dipper R-0620B Hardness Indicator Powder. Swirl until dissolved. Sample will turn red (Fig. 1) if hardness is present.
4. Add R-0806 Hardness Reagent dropwise, swirling and counting after each drop, until color changes from red to blue (Fig. 2).
5. Multiply drops of R-0806 Hardness Reagent by 2. Record as parts per million (ppm) total hardness as calcium carbonate ( $\text{CaCO}_3$ ).

#### For 1 drop = 10 ppm Calcium Carbonate

1. Rinse and fill 25 mL sample tube (#9198B) to 25 mL mark with water to be tested.
2. Add 5 drops R-0619B Hardness Buffer. Swirl to mix.
3. Add 1 dipper R-0620B Hardness Indicator Powder. Swirl until dissolved. Sample will turn red (Fig. 1) if hardness is present.
4. Add R-0683 Hardness Reagent dropwise, swirling and counting after each drop, until color changes from red to blue (Fig. 2).
5. Multiply drops of R-0683 Hardness Reagent by 10. Record as parts per million (ppm) total hardness as calcium carbonate ( $\text{CaCO}_3$ ).



Fig. 1



Fig. 2



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