

## DROP TEST

### CALCIUM, TOTAL & MAGNESIUM HARDNESS (1 drop = 10 ppm)

**COMPONENTS:**

1 x 5095	Instruction
1 x 9198	Sample Tube, Graduated (25 mL) w/ cap, plastic
1 x R-0010-C	Calcium Buffer, 2 oz, DB
1 x R-0011L-C	Calcium Indicator Liquid, 2 oz, DB
1 x R-0012-C	Hardness Reagent, 2 oz, DB
1 x R-0854-C	Total Hardness Reagent, 2 oz, DB

**TO ORDER REPLACEMENT PARTS AND REAGENTS CALL TOLL-FREE  
800-TEST KIT (800-837-8548).**

**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.

**Total Hardness Test**

1. Rinse and fill 25 mL sample tube (#9198) to 25 mL mark with water to be tested.
2. Add 10 drops R-0854 Total Hardness Reagent. Swirl to mix. Sample will turn red (Fig. 1) if total hardness is present.
3. Add R-0012 Hardness Reagent dropwise, swirling and counting after each drop, until color changes from red to blue (Fig. 2).
4. Multiply drops of R-0012 Hardness Reagent by 10. Record as parts per million (ppm) total hardness as calcium carbonate ( $\text{CaCO}_3$ ).

**Calcium Hardness Test**

1. Rinse and fill 25 mL 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. Sample will turn red if calcium hardness is present (Fig. 1).
4. Add R-0012 Hardness Reagent dropwise, swirling and counting after each drop, until color changes from red to blue (Fig. 2).
5. Multiply drops of R-0012 Hardness Reagent by 10. Record as parts per million (ppm) calcium hardness as calcium carbonate ( $\text{CaCO}_3$ ).

**Magnesium Hardness Test**

1. Subtract calcium hardness (CH) from total hardness (TH). Record as parts per million (ppm) magnesium hardness (MH) as calcium carbonate ( $\text{CaCO}_3$ ).

$$\text{Formula: TH} - \text{CH} = \text{MH}$$



Fig. 1



Fig. 2



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