

## DROP TEST

PHOSPHONATE EQUIVALENCE (PPM) ATMP (1.0);  $\text{Na}_5\text{ATMP}$  (1.3); HEDP (0.9);  $\text{K}_6\text{HDTMP}$  (1.2); DTPMP (1.45),  $\text{Na}_5\text{DTPMP}$  (1.7)

## COMPONENTS:

1 x 5051	Instruction
1 x 9198P	Sample Tube, Graduated, 25 mL, plastic w/cap and purple dot
1 x 9315	Test Paper, pH, 1.8-3.8
1 x R-0686P-C	Sulfuric Acid N (purple cap), 2 oz, DB
1 x R-0697-C	Thiosulfate N/10, 2 oz, DB
1 x R-0802P-I	XO Indicator Powder, 10 g
1 x R-0803-C	Phosphonate Titrating Solution, 2 oz, DB
1 x R-0805-C	Fluoride Masking Agent, 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: Iron can cause negative interference at a level greater than 5 ppm.

Orthophosphate and polyphosphate can cause positive interference at all levels.

NOTE: Run a blank using tap water. Normal blank requires about 2 drops of R-0803 Phosphonate Titrating Solution to reach endpoint.

1. Rinse and fill 25 mL sample tube (#9198P) to 25 mL mark with water to be tested (Fig. 1).

2. Add:

- 1 drop R-0697 Thiosulfate N/10
- 10 drops R-0805 Fluoride Masking Agent
- 1 level dipper R-0802P XO Indicator Powder
- Swirl to mix.

3. Adjust pH between 2.6 and 3.0:

Add 1 drop R-0686P Sulfuric Acid N. Swirl to mix. Dip test paper (#9315) into sample, in direction of arrow, for 3 seconds, with all color zones immersed. Match indicator zone (unnumbered square between 2.7 and 3.0 color standards) with color scale. Read printed pH value. If necessary, continue adding R-0686P Sulfuric Acid N dropwise, swirling and checking pH with a new test paper after each drop, until a pH between 2.6 and 3.0 is obtained. Sample should be yellow (Fig. 2).

4. Add R-0803 Phosphonate Titrating Solution dropwise, swirling and counting after each drop, until color changes from yellow to purple-pink (Fig. 3). Always hold bottle in vertical position.

5. Subtract drops of R-0803 Phosphonate Titrating Solution in blank from drops in sample (Step 4). Multiply by appropriate conversion factor (see CONVERSION FACTORS). Record as parts per million (ppm) phosphonate.

## CONVERSION FACTORS:

To express phosphonate as:

Multiply drops by:

Aminotri(methylenephosphonic acid) (ATMP) ..... 1.0

Aminotri(methylenephosphonic acid),  
pentasodium salt ( $\text{Na}_5\text{ATMP}$ ) ..... 1.3

1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP) ..... 0.9

Hexamethylenediaminetetra (methylenephosphonic acid),  
hexapotassium salt ( $\text{K}_6\text{HDTMP}$ ) ..... 1.2

Diethylenetriaminepenta (methylenephosphonic acid)  
(DTPMP) ..... 1.45

Diethylenetriaminepenta (methylenephosphonic acid),  
pentasodium salt ( $\text{Na}_5\text{DTPMP}$ ) ..... 1.7



Fig. 1



Fig. 2

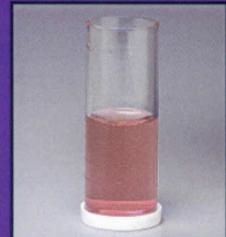


Fig. 3



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