Instructions

Instruction Number: 5256

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                 DROP TEST
           HIGH QAC/HIGH POLYQUAT
      (1 drop = 3.5 or 9 ppm polyquat,
        1 drop = 10 or 25 ppm QAC)
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COMPONENTS:

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 1 x 5256        Instruction
 1 x 9012        Pipet, Calibrated 0.5 & 1.0 mL, plastic
                 w/brown cap
 1 x 9198BR      Sample Tubes, Graduated, 25 mL, plastic
                 w/cap and brown dot
 1 x R-0638BR-C  Phenolphthalein Indicator (brown cap), 2 oz, DB
 1 x R-0736BR-C  Sulfuric Acid .6N (brown cap), 2 oz, DB
 1 x R-0881-A    Toluidine Blue O Indicator, .75 oz, DB
 1 x R-0884-C    QAC Titrating Solution, 2 oz, DB
 1 x R-0950-C    Complexing Reagent, 2 oz
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TO ORDER REPLACEMENT PARTS AND REAGENTS CALL TOLL-FREE
877-7WATER6 (877-792-8376) or email us with your requirements.

PROCEDURE:

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

For 1 drop = 10 ppm QAC or 3.5 ppm polyquat

NOTE: Run a blank using water containing no QAC or
       polyquat. Record drops of R-0884 QAC Titrating
       Solution used.

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

2. Using a 1.0 mL pipet (#9012), add 1.0 mL R-0950
    Complexing Reagent. Swirl to mix.

NOTE: If sample water contains a hardness
       concentration above 500 ppm, add 2.0 mL (2 x 1.0
       mL) R-0950 Complexing Reagent.

3. Add 1 drop R-0638BR Phenolphthalein Indicator. Swirl
    to mix. If colorless, proceed to Step 4. If pink,
    add R-0736BR Sulfuric Acid .6N dropwise, swirling
    after each drop, until color changes from pink to

colorless.

4. Add 3 drops R-0881 Toluidine Blue O Indicator.
    Swirl to mix. Sample should be light blue.

5. Add R-0884 QAC Titrating Solution dropwise,
    swirling and counting after each drop, until color
    changes from light blue to violet-pink. Always
    hold bottle in vertical position.

NOTE: Further addition of R-0884 QAC Titrating
       Solution should produce no color change.

6. Subtract drops of R-0884 QAC Titrating Solution
    used in blank from drops used in sample (Step 5).
    Multiply by 10. Record as parts per million (ppm)
    QAC as n-alkyl(60% C14, 30% C16, 5% C12, 5% C18)
    dimethylbenzylammonium chloride/n-alkyl(68% C12,
    32% C14)dimethylethylbenzylammonium chloride. For
    results as polyquat, multiply by 3.5. Record as
    ppm polyquat as poly[oxyethylene(dimethyliminio)
    ethylene(dimethyliminio)ethylene dichloride].

NOTE: Equivalences for quaternary ammonium compounds
       and polyquats other than those listed must be
       determined by titration with a known standard.

For 1 drop = 25 ppm QAC or 9 ppm polyquat

NOTE: Run a blank using water containing no QAC or
       polyquat. Record drops of R-0884 QAC Titrating
       Solution used.

1. Rinse and fill 25 mL sample tube (#9198BR) to 10 mL
    mark with water to be tested.

2. Using a 1.0 mL pipet (#9012), add 0.5 mL R-0950
    Complexing Reagent. Swirl to mix.

NOTE: If sample water contains a hardness
       concentration above 500 ppm, add 1.0 mL R-0950
       Complexing Reagent.

3. Add 1 drop R-0638BR Phenolphthalein Indicator. Swirl
    to mix. If colorless, proceed to Step 4. If pink,
    add R-0736BR Sulfuric Acid .6N dropwise, swirling
    after each drop, until color changes from pink to
    colorless.

4. Add 1 drop R-0881 Toluidine Blue O Indicator.
    Swirl to mix. Sample should be light blue.

5. Add R-0884 QAC Titrating Solution dropwise,
    swirling and counting after each drop, until color
    changes from light blue to violet-pink. Always
    hold bottle in vertical position.

NOTE: Further addition of R-0884 QAC Titrating
        Solution should produce no color change.

6. Subtract drops of R-0884 QAC Titrating Solution
    used in blank from drops used in sample (Step 5).
    Multiply by 25. Record as parts per million (ppm)
    QAC as n-alkyl(60% C14, 30% C16, 5% C12, 5% C18)
    dimethylbenzylammonium chloride/n-alkyl(68% C12,
    32% C14)dimethylethylbenzylammonium chloride. For
    results as polyquat, multiply by 9. Record as ppm
    polyquat as poly[oxyethylene(dimethyliminio)
    ethylene(dimethyliminio)ethylene dichloride].

NOTE: Equivalences for quaternary ammonium compounds
        and polyquats other than those listed must be
        determined by titration with a known standard.

03/09