

Richard Hourigan, Inc.

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Instructions

Instruction Number: 5359

DROP TEST
MOLYBDENUM (1 drop = 2, 5, 20 or 50 ppm)

COMPONENTS:

1 x 4029	Pipet, Calibrated 0.5 & 1.0 mL, plastic
2 x 4030	Pipets, Calibrated 0.5 & 1.0 mL, plastic w/cap
1 x 4078	Pipet, Graduated, 3 mL (0.5 mL div.), plastic
1 x 5359	Instruction
3 x 9198	Sample Tubes, Graduated, 25 mL, plastic w/cap
1 x R-0890	Molybdenum Buffer Solution
1 x R-0892	Molybdenum Titrating Solution, DB
1 x R-0900	Molybdenum Indicator Powder
1 x R-0901	Molybdenum Indicator Solvent

TO ORDER REPLACEMENT PARTS AND REAGENTS CALL TOLL-FREE
877-7WATER6 (877-792-8276) or [email us](mailto:info@richardhourigan.com) with your requirements.

PROCEDURE:

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

Molybdenum Indicator Solution Preparation:

For 1 drop = 2, 20, or 50 ppm Mo

Using a 1.0 mL pipet (#4030), add 2.5 mL R-0901 Molybdenum
Indicator Solvent to a clean 25 mL sample tube. Add 5
level dippers R-0900 Molybdenum Indicator Powder. Swirl
until solution turns a clear, red-orange color.
Undissolved crystals will remain in the solvent-powder
mixture.

For 1 drop = 5 ppm Mo

Using a 1.0 mL pipet (#4030), add 1.5 mL R-0901 Molybdenum
Indicator Solvent to a clean 25 mL sample tube. Add 3
level dippers R-0900 Molybdenum Indicator Powder. Swirl
until solution turns a clear, red-orange color.
Undissolved crystals will remain in the solvent-powder
mixture.

For 1 drop = 2 ppm Mo

1. Rinse and fill a clean 25 mL sample tube (#9198) to 25 mL mark with distilled, deionized, or molybdenum-free tap water. This will be the blank.
2. Rinse and fill a second clean 25 mL sample tube to 25 mL mark with water to be tested.
3. Using a 1.0 mL pipet (#4030), add 1.0 mL R-0890 Molybdenum Buffer Solution to each 25 mL sample tube. Swirl to mix.
4. Using a separate 1.0 mL pipet (#4029), add 1.0 mL Molybdenum Indicator Solution (prepared above) to each sample tube, transferring as few undissolved crystals as possible. However, a few crystals that may be transferred will not affect results. Swirl to mix. The blank should turn peach and the sample will turn red-orange to red if molybdenum is present.
5. Add R-0892 Molybdenum Titrating Solution, dropwise, swirling and counting after each drop, to sample tube containing water sample, until sample color matches blank color, or until no further change in color occurs. Always hold bottle in vertical position.
6. Multiply drops of R-0892 Molybdenum Titrating Solution by 2. Record as parts per million (ppm) molybdenum.

NOTE: To convert molybdenum (Mo) readings to molybdate (MoO_4), multiply Mo readings by 1.7; to convert to sodium molybdate dihydrate ($\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$), multiply by 2.52.

For 1 drop = 5 ppm Mo

1. Rinse and fill a clean 25 mL sample tube (#9198) to 10 mL mark with distilled, deionized, or molybdenum-free tap water. This will be the blank
2. Rinse and fill a second clean 25 mL sample tube to 10 mL mark with water to be tested.
3. Using a 1.0 mL pipet (#4030), add 0.5 mL R-0890 Molybdenum Buffer Solution to each 25 mL sample tube. Swirl to mix.
4. Using a separate 1.0 mL pipet (#4029), add 0.5 mL Molybdenum Indicator Solution (prepared above) to each sample tube, transferring as few undissolved crystals as possible. However, a few crystals that may be transferred will not affect results. Swirl to mix. The blank should turn peach and the sample will turn red-orange to red if molybdenum is present.

5. Add R-0892 Molybdenum Titrating Solution, dropwise, swirling and counting after each drop, to sample tube containing water sample, until sample color matches blank color, or until no further change in color occurs. Always hold bottle in vertical position.
6. Multiply drops of R-0892 Molybdenum Titrating Solution by 5. Record as parts per million (ppm) molybdenum.

NOTE: To convert molybdenum (Mo) readings to molybdate (MoO_4), multiply Mo readings by 1.7; to convert to sodium molybdate dihydrate ($\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$), multiply by 2.52.

For 1 drop = 20 or 50 ppm Mo

1. Rinse and fill a clean 25 mL sample tube (#9198) to 25 mL mark with distilled, deionized, or molybdenum-free tap water. This will be the blank.
2. Using a 3 mL pipet (#4078), place water to be tested in a second clean 25 mL sample tube.

NOTE: For 1 drop = 20 ppm, fill pipet to 2.5 mL mark.
For 1 drop = 50 ppm, fill pipet to 1.0 mL mark.

3. Dilute to 25 mL mark with distilled, deionized, or molybdenum-free tap water.
4. Using a 1.0 mL pipet (#4030), add 1.0 mL R-0890 Molybdenum Buffer Solution to each 25 mL sample tube. Swirl to mix.
5. Using a separate 1.0 mL pipet (#4029), add 1.0 mL Molybdenum Indicator Solution (prepared above) to each sample tube, transferring as few undissolved crystals as possible. However, a few crystals that may be transferred will not affect results. Swirl to mix. The blank should turn peach and the sample will turn red-orange to red if molybdenum is present.
6. Add R-0892 Molybdenum Titrating Solution dropwise, swirling and counting after each drop, to sample tube containing water sample, until sample color matches blank color, or until no further change in color occurs. Always hold bottle in vertical position.
7. For 2.5 mL sample, multiply drops of R-0892 Molybdenum Titrating Solution by 20. Record as parts per million (ppm) molybdenum.

For 1.0 mL sample, multiply drops R-0892 Molybdenum Titrating Solution by 50. Record as ppm

molybdenum.

NOTE: To convert molybdenum (Mo) readings to molybdate (MoO₄), multiply Mo readings by 1.7; to convert to sodium molybdate dihydrate (Na₂MoO₄·2H₂O), multiply by 2.52.

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