

# Molybdenum 3.3

Range(s): 0-3.30 ppm Mo, 0-5.50 ppm  $\text{MoO}_4^{2-}$ , 0-7.10 ppm  $\text{Na}_2\text{MoO}_4$



## Procedure

1. Turn on the Colorimeter.
2. Select a test menu (ALL TESTS, RECENT TESTS, or FAVORITES) containing Molybdenum 3.3 using ◀▶.
3. Select Molybdenum 3.3 using ▲▼; then press ENTER Ⓞ.
4. Select a chemical form (Mo,  $\text{MoO}_4$ , or  $\text{Na}_2\text{MoO}_4$ ) for expression of test results using ▲▼.
5. Rinse and fill 25 mm sample cell to 10 mL mark with sample.
6. Add 0.5 mL Molybdenum 3.3 - Reagent A; then cap and swirl to mix thoroughly.
7. Insert sample cell into sample cell compartment. Align marks per User's Manual.
8. Select ZERO using ◀▶; then press ENTER Ⓞ. Zero will be displayed.
9. Remove sample cell from sample cell compartment; then remove cap.
10. Add 0.5 mL Molybdenum 3.3 - Reagent B; then cap and swirl to mix thoroughly.
11. Insert sample cell into sample cell compartment. Align marks.
12. Select TIMER using ◀▶; then press ENTER Ⓞ.
13. Select START using ◀▶; then press ENTER Ⓞ. (A 2-minute [02:00] countdown will begin.) Immediately select AUTO using ◀▶; then press ENTER Ⓞ.
14. When the timer beeps, the instrument will read the sample and the result will be displayed.

## Interferences

Bromine > 6 ppm – negative interference

To remove interference: Add 1 drop Thiosulfate N/10 (R-0697) to sample cell prior to testing.

Chlorine > 6 ppm – negative interference

To remove interference: Add 1 drop Thiosulfate N/10 (R-0697) to sample cell prior to testing.

Iron, Ferric > 7 ppm – positive interference

To remove interference: Add 1 drop EDTA Solution (R-0814) to sample cell prior to testing.

Iron, Ferrous > 7 ppm – positive interference

To remove interference: Add 1 drop EDTA Solution (R-0814) to sample cell prior to testing.

Nitrite > 100 ppm – negative interference

To remove interference: Treat a 25 mL sample with 0.1 g Sulfamic Acid Powder (R-0837). Swirl the sample to dissolve the Sulfamic Acid Powder and evolve nitrogen. After 5 minutes, add Sodium Hydroxide Reagent (R-0740) to adjust pH to 4-8. Take a 10 mL portion and follow test procedure above.

The following analytes were tested to the levels listed and found not to cause any interference up to the specified values:

Alkalinity, Total ( $\text{CaCO}_3$ ) – 1000 ppm  
Azole (BT) – 5 ppm  
Azole (TT) – 5 ppm

Chloride – 1000 ppm

Copper – 5 ppm

Fluoride – 10 ppm

Hardness, Calcium ( $\text{CaCO}_3$ ) – 1000 ppm

Nitrate – 2000 ppm

Phosphate – 20 ppm

Phosphonate – 25 ppm

Polymer – 20 ppm

Polyphosphate – 6 ppm

Silica – 150 ppm

Sulfate – 1000 ppm

Sulfite – 100 ppm

Zinc – 5 ppm

**Test Method**

Ternary Complex

Under slightly acidic conditions, pyrocatechol violet produces a blue-colored complex with molybdate that is proportional to the molybdenum concentration in a sample.

**Estimated  
Detection Limit**

0.03 ppm Mo

**Precision**

Using a single lot of each reagent and a standard solution of 2.0 ppm Mo, an individual analyst obtained a standard deviation with the instrument of  $\pm 0.01$  ppm Mo.

**Application**

Industrial Water and Wastewater

**Ordering Info****Reagent Pack**

K-8003 Molybdenum 3.3

Formulated for exclusive use with Taylor's TTi<sup>®</sup> Colorimeter.

**Reagent Pack Components**

R-8003A Molybdenum 3.3 - Reagent A

R-8003B Molybdenum 3.3 - Reagent B

**Optional Reagents & Accessories**

R-0697 Thiosulfate N/10

R-0740 Sodium Hydroxide Reagent

R-0814 EDTA Solution

R-0837 Sulfamic Acid Powder