



## **MOLYBDENUM**

**1200 COLORIMETER, 0-30 ppm**

CODE 3676-01

<b>QUANTITY</b>	<b>CONTENTS</b>	<b>CODE</b>
60 mL	*Mo Buffer	*3997-H
2 x 30 mL	*Molybdenum Oxidizing Reagent	*6485-G
2.5 g	*Molybdenum Indicator Powder	*6486-S
1	Colorimeter Tubes 10 mL, w/cap, set of 6	0290-6
1	Spoon, 0.05g, plastic	0696
1	Pipets, 1.0 mL, plastic, w/cap	0372
1	Pipet, 1.0 mL	0354
1	Water Sample Collecting Bottle	0688
1	1200 Colorimeter for Molybdenum	26729

\*WARNING: Reagents marked with an \* are considered to be potential health hazards. To view or print a Material Safety Data Sheet (MSDS) for these reagents go to [www.lamotte.com](http://www.lamotte.com). To obtain a printed copy, contact LaMotte by e-mail, phone or fax.

To order individual reagents or test kit components, use the specified code number.

NOTE: After use, return \*MO Buffer (3997) to zipper top storage bag to reduce exposure to corrosive reagent.


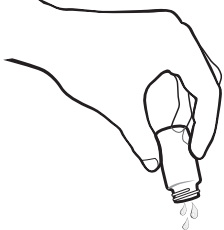


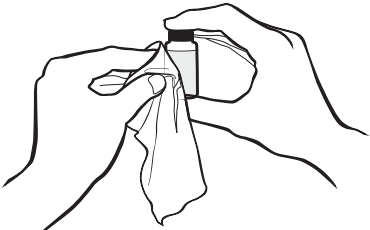
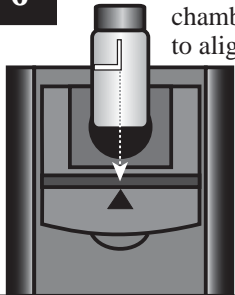

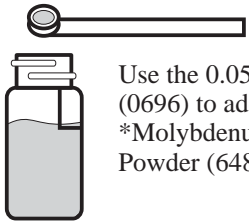
### **INTRODUCTION**

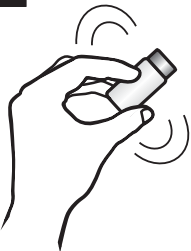
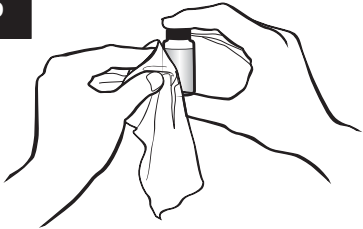
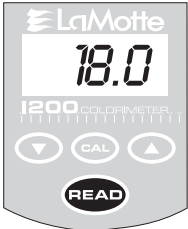
Molybdenum occurs naturally in the earth's crust as molybdenite and wolfenite, and is an important element in many biochemical reactions, including nitrogen fixation. In industrial processes, such as the operation of boilers and cooling towers, molybdenum, in the form of sodium molybdate, is used as an environmentally safe corrosion inhibitor.

## MOLYBDENUM PROCEDURE - Thioglycolate Method

Read the 1200 Colorimeter Manual before proceeding. Carefully wipe tubes dry before inserting into the colorimeter chamber

### MOLYBDENUM

<p><b>1</b></p>  <p>Fill the Water Sample Collecting Bottle (0688) with sample water. This will be used to dispense sample water for the tests.</p>	<p><b>2</b></p>  <p>Rinse and fill a colorimeter tube (0290) to the 10mL line with sample water.</p>
<p><b>3</b></p>  <p>Use the 1.0 mL pipet (0372) to add 1mL of *Mo Buffer (3997). Cap and mix.</p>	<p><b>4</b></p>  <p>Use the 1.0 mL pipet (0354) to add 1mL of *Molybdenum Oxidizing Reagent (6485). Cap and mix.</p>
<p><b>5</b></p>  <p>Wipe the tube dry.</p>	<p><b>6</b></p>  <p>Insert the tube into the chamber, being sure to align the index line with the arrow on the meter. Close the lid. This tube is the sample blank.</p>
<p><b>7</b></p>  <p>Push the READ button to turn the meter on. Press the ZERO button and hold it for 2 seconds until is displayed. Release the button to take a blank reading (0.0 ppm).</p>	<p><b>8</b></p>  <p>Use the 0.05 spoon (0696) to add 0.05g of *Molybdenum Indicator Powder (6486).</p>

<p><b>5</b></p>  <p>Cap and mix until the powder dissolves. Solution will turn yellow if molybdenum is present.</p>	<p><b>6</b></p>  <p>Wipe the tube dry.</p>
<p><b>7</b></p>  <p>Align the index line with the arrow on the meter, insert tube into chamber. Close the lid. Push the button. Record results as ppm Molybdenum.</p>	<p><b>NOTE:</b> If the molybdenum reading exceeds 50 ppm, repeat procedure on diluted sample, and multiply the result by the appropriate dilution factor. See 1200 Colorimeter Instruction Manual for procedure.</p>

## **MOLYBDENUM TEST METHOD SPECIFICATIONS**

### **APPLICATION**

Boiler and cooling water

### **RANGE**

0 to 30 ppm Molybdenum

### **METHOD**

Calcium thioglycolate reacts with molybdenum to give a yellow color with an intensity proportional to the amount of molybdenum present.

### **HANDLING & PRESERVATION**

Molybdenum samples may be stored in either plastic or glass containers.

### **INTERFERENCES**

Nickel levels less than 50 ppm do not interfere; aluminum levels less than 10 ppm do not interfere; chromate, at higher concentrations, interferes due to the intense yellow color. Ferrous iron levels below 50 ppm do not interfere, but low levels of ferric iron will cause a large blank. Highly buffered samples may exceed the capacity of the system possibly producing inaccurate results. Add an extra 1.0 mL of \*Mo Buffer (3997) to adjust the pH of the sample to approximately 4.5. Multiply the result in ppm by 1.08.

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