

Summary: Orthophosphate reacts with molybdenum (VI) and antimony (III) in an acid medium to form an antimonyphosphomolybdate complex. This complex is subsequently reduced with ascorbic acid to form a blue color and the absorbance is measured at 880 nm.

Interferences: Ferric iron up to 40 mg/L, copper up to 10 mg/L, and silica up to 10 mg/L do not interfere. Samples with background absorbance at the analytical wavelength may interfere. Filter turbid samples prior to analysis.

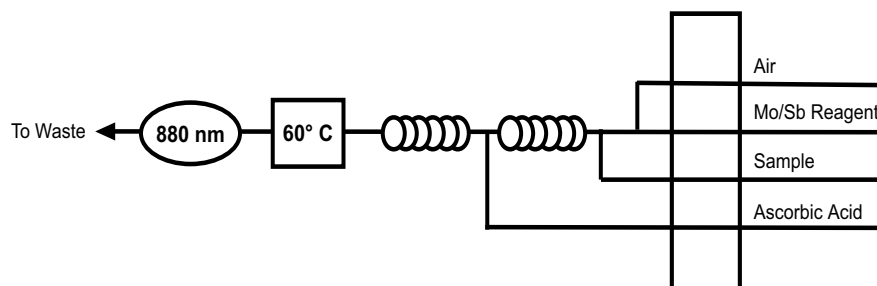
Performance Specifications:

Range:	1.0 ppb–1.0 ppm
Rate:	60 samples/hour
Precision:	
0.100 mg/L	4.2% RSD
1,000 mg/L	0.6% RSD
Method Detection Limit (MDL):	0.266 ppb

Chemicals:

Ammonium Molybdate Tetrahydrate, (NH ₄) ₆ Mo ₇ O ₂₄ •4H ₂ O	Deionized Water, ASTM Type I or II
Antimony Potassium Tartrate, K(SbO)C ₄ H ₄ O ₆ •½H ₂ O	Dowfax 2 [®] A1, Part #000080
Ascorbic Acid, C ₆ H ₈ O ₆	Potassium Dihydrogen Phosphate, KH ₂ PO ₄
	Sulfuric Acid, concentrated, H ₂ SO ₄

Basic Flow Diagram:



Selected References: Phosphorus, All Forms. *Methods for Chemical Analysis of Water and Wastewater*; EPA-600/4-79-020; U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory: Cincinnati, OH, 1984; Method 365.1.

Standard Methods for the Examination of Water and Wastewater, 17th ed.; American Public Health Association: Washington, D.C., 1989; 4–178.

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