

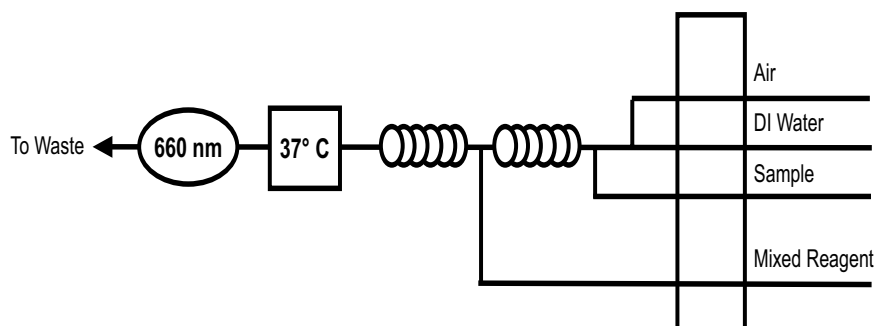
Summary: Orthophosphate reacts with molybdenum (VI) and antimony (III) in an acidic medium to form an antimony-phosphomolybdate complex. This complex is subsequently reduced with ascorbic acid to form a blue color, and the absorbance is measured at 660 nm.

Interferences: Turbid samples may interfere with the photometric detector's ability to measure the true absorbance of the sample. Turbid samples should be filtered prior to analysis to reduce the possibility of such bias. Iron, copper, and other metals may interfere with the accurate analysis of orthophosphate by binding with the orthophosphate in the sample, thus blocking the color formation reaction. Ethylene diaminetetraacetic acid (EDTA) is used in the buffer solution to eliminate this interference.

Performance Specifications:	Range:	0.01–1.0 mg/L P
	Rate:	80 samples/hr
	Precision (0.2 mg/L):	<1.0% RSD
	Precision (0.8 mg/L):	<0.5% RSD
	Method Detection Limit (MDL):	0.001 mg/L P

Chemicals:	Ammonium Molybdate, $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4\text{H}_2\text{O}$	Dowfax® 2A1 (Part #A000080)
	Antimony Potassium Tartrate, $\text{K}(\text{SbO})\text{C}_4\text{H}_4\text{O}_6 \cdot \frac{1}{2}\text{H}_2\text{O}$	Sulfuric Acid, concentrated, H_2SO_4
	Ascorbic Acid, $\text{C}_6\text{H}_8\text{O}_6$	Potassium Dihydrogen Phosphate, KH_2PO_4
	Deionized Water (ASTM Type I or II)	

Basic Flow Diagram:



Note: This method complies with USEPA Method 365.1.

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, 4–137.

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