

Summary: Silica in solution as silicic acid or silicate reacts with molybdate reagent in an acidic environment to form β -molybdosilicic acid. The complex is reduced by ascorbic acid to form molybdenum blue. The absorbance is measured at 660 nm.

Interferences: Add oxalic acid to suppress interference from phosphate. Remove hydrogen sulfide by boiling an acidified sample prior to analysis. Large amounts of iron interfere. Filter or centrifuge turbid samples prior to determination. Samples with background absorbance at the analytical wavelength may interfere. Avoid using borosilicate glassware for sample collection or reagent storage. Use polyethylene containers whenever possible.

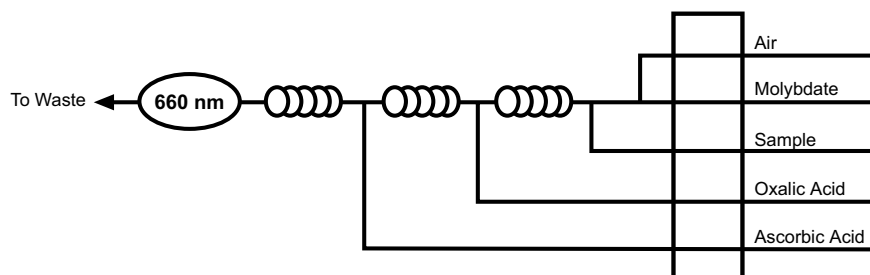
Performance Specifications:

Range:	0.10–60 mg/L Si
Throughput:	40 samples/hour
Precision:	
1.2 mg/L	<1% RSD
50 mg/L	<1% RSD
Method Detection Limit (MDL):	0.014 mg/L Si

Chemicals:

Ammonium Molybdate Tetrahydrate, (NH ₄) ₆ Mo ₇ O ₂₄ •4H ₂ O	Oxalic Acid, C ₂ H ₂ O ₄
Ascorbic Acid, C ₆ H ₈ O ₆	Sodium Hydroxide, NaOH
DOWFAX® 2A1	Sodium Metasilicate Pentahydrate, Na ₂ SiO ₃ •5H ₂ O
(OI Analytical Part #A000080)	Sulfuric Acid, concentrated, H ₂ SO ₄

Basic Flow Diagram:



Selected References: *Methods for Determination of Inorganic Substances in Water and Fluvial Sediments;* I-1700-85; U.S. Geological Survey; 552–554.

Methods for Determination of Inorganic Substances in Water and Fluvial Sediments; I-2700-85; U.S. Geological Survey; 555–558.

Standard Methods for the Examination of Water and Wastewater, 20th ed.; American Public Health Association: Washington, D.C., 1998.

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