

**Summary:** The sample is digested prior to analysis in the presence of sulfuric acid, potassium sulfate, and a mercury catalyst at a final temperature of 380°C. Free ammonia and organic nitrogen compounds are converted to ammonium sulfate under these conditions. Nitrogenous compounds of some industrial wastes, such as amines, nitro compounds, hydrazones, oximes, semicarbazones, and some tertiary amines, may not be converted. The ammonium reacts with salicylate and hypochlorite in a buffered alkaline solution in the presence of sodium nitroferricyanide (pH 12.8–13) to form the salicylic acid analog of indophenol blue. The blue-green color produced is measured at 660 nm.

**Interferences:** Precipitation of calcium and magnesium hydroxides is eliminated by potassium sodium tartrate in the working buffer. Filter or centrifuge turbid digestates prior to the analysis. Digestates with background absorbances at the analytical wavelength may interfere with the analysis.

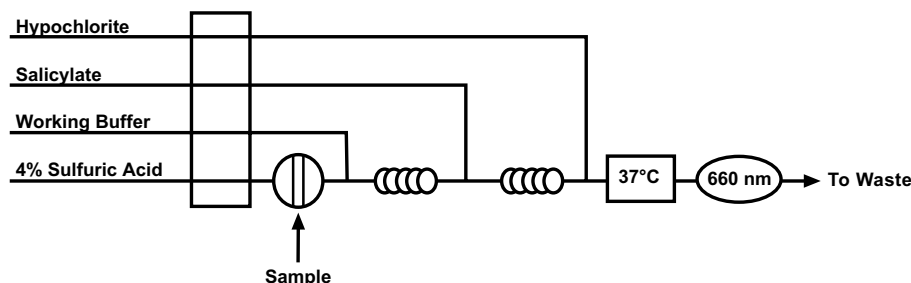
**Performance Specifications:**

Range:	0.05–20 mg/L
Throughput:	55 samples/hour
Precision:	
2.0 mg/L	<1% RSD
16.0 mg/L	<1% RSD
Method Detection Limit (MDL):	0.013 mg/L

**Chemicals:**

Ammonium Sulfate, (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	Sodium Hypochlorite, 5.25% available chlorine (household bleach), NaOCl
Brij®-35, 30% w/v (OI Analytical Part #A21-0110-33)	Sodium Nitroferricyanide Dihydrate, Na <sub>2</sub> Fe(CN) <sub>5</sub> NO•2H <sub>2</sub> O
Chloroform, CHCl <sub>3</sub>	Sodium Phosphate Dibasic Anhydrous, Na <sub>2</sub> HPO <sub>4</sub>
Potassium Sodium Tartrate Tetrahydrate, KNaC <sub>4</sub> H <sub>4</sub> O <sub>6</sub> •4H <sub>2</sub> O	Sodium Salicylate, NaC <sub>7</sub> H <sub>5</sub> O <sub>3</sub>
Potassium Sulfate, K <sub>2</sub> SO <sub>4</sub>	Sulfuric Acid, concentrated, H <sub>2</sub> SO <sub>4</sub>
Red Mercuric Oxide, HgO	Teflon® or glass boiling stones
Sodium Hydroxide, NaOH	

**Basic Flow Diagram:**



**Note:** This method complies with USEPA Method 351.2.

**Selected References:** *Methods for the 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 351.2.

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

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