

## Method Abstract

**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. Ammonia reacts with alkaline phenol and hypochlorite to form indophenol blue in an amount that is proportional to the ammonia concentration. The blue color is intensified with sodium nitroferrocyanide, and the absorbance is measured at 660 nm.

**Interferences:** Eliminate precipitation of calcium and magnesium hydroxides by adding sodium citrate. Filter turbid digestates prior to analysis. Digestates with background absorbance at the analytical wavelength may interfere.

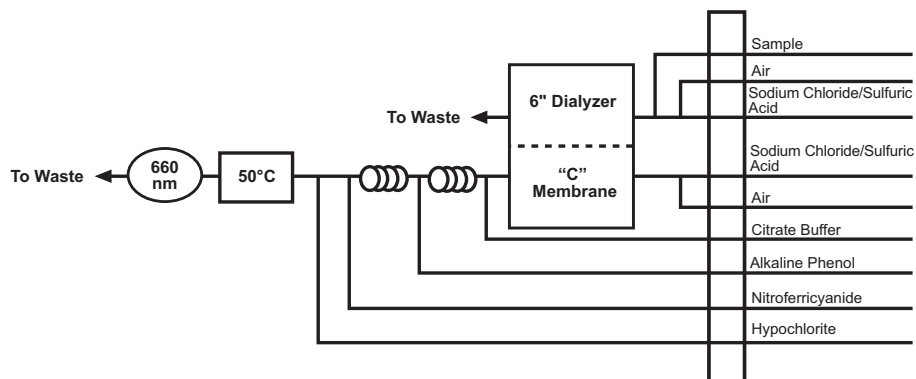
**Performance Specifications:**

Range:	0.20–250 mg/L TKN (Total Kjeldahl Nitrogen)
Throughput:	30 samples/hour
Precision:	
0.20 mg/L	<3% RSD
250 mg/L	<2% RSD
Method Detection Limit (MDL):	0.01 mg/L TKN

**Chemicals:**

Ammonium Sulfate, (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	Sodium Hydroxide, NaOH
Brij®-35, 30% w/v	Sodium Hypochlorite, 5.25% available chlorine (household bleach), NaOCl
(Part #OI Analytical A21-0110-33)	Sodium Nitroferrocyanide Dihydrate, Na <sub>2</sub> Fe(CN) <sub>5</sub> NO•2H <sub>2</sub> O
Potassium Sulfate, K <sub>2</sub> SO <sub>4</sub>	Sulfuric Acid, concentrated, H <sub>2</sub> SO <sub>4</sub>
Phenol, solid or liquified, 88%, C <sub>6</sub> H <sub>5</sub> OH	Teflon® or glass boiling stones
Red Mercuric Oxide, HgO	
Sodium Chloride, NaCl	
Sodium Citrate Dihydrate, C <sub>6</sub> H <sub>5</sub> Na <sub>3</sub> O <sub>7</sub> •2H <sub>2</sub> O	

**Basic Flow Diagram:**



**Selected References:** *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 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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