

## Method Abstract

**Summary:** Ammonia reacts with alkaline phenol and hypochlorite to form indophenol blue in an amount that is proportional to the ammonia concentration. The blue color intensifies with sodium nitroferricyanide. Measure the absorbance at 660 nm.

**Interferences:** Filter turbid samples prior to analysis. Eliminate precipitation of calcium and magnesium hydroxides by adding ethylenediaminetetraacetic acid (EDTA). Samples with background absorbance at the analytical wavelength may interfere. Color intensity is sensitive to pH. Standardize samples at pH 5–7 prior to analysis.

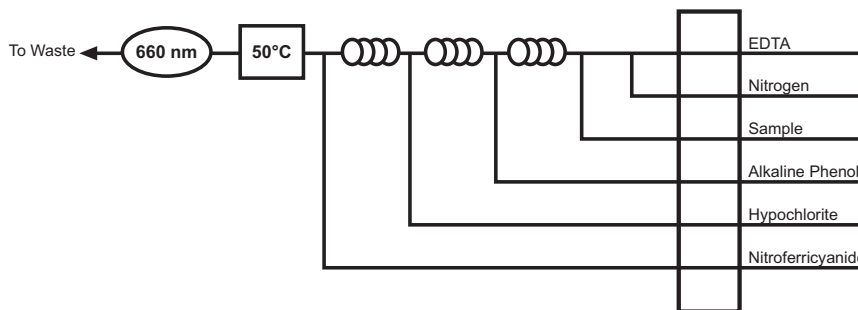
**Performance Specifications:**

Range	0.01–25 mg/L ammonia as nitrogen (N)
Throughput	51 samples/hour
Precision at 0.05 mg/L	<1% RSD
Method Detection Limit (MDL)	0.002 mg/L

**Chemicals:**

Ammonium sulfate, (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	Kleenflow Basic (OI Analytical PN A001252)
Brij <sup>®</sup> -35, 30% w/v (OI Analytical PN A21-0110-33)	Phenol, solid or liquified, 88%, C <sub>6</sub> H <sub>5</sub> OH
Chloroform, CHCl <sub>3</sub>	Sodium hydroxide, NaOH
EDTA, dihydrate, C <sub>10</sub> H <sub>14</sub> N <sub>2</sub> Na <sub>2</sub> O <sub>8</sub> •2H <sub>2</sub> O	Sodium hypochlorite, 5.25% available chlorine (household bleach), NaOCl
Cupric sulfate, pentahydrate, CuSO <sub>4</sub> •5H <sub>2</sub> O	Sodium nitroferricyanide dihydrate, Na <sub>2</sub> Fe(CN) <sub>5</sub> NO•2H <sub>2</sub> O
Kleenflow <sup>™</sup> Acidic (OI Analytical PN A001251)	Sulfuric acid, concentrated, H <sub>2</sub> SO <sub>4</sub>

**Basic Flow Diagram:**



**Note:** This method complies with USEPA Method 350.1.

**Selected References:** Nitrogen, Ammonia. *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 350.1.

Patton, C.J.; Crouch, S.R. *Analytical Chemistry* **1977**, 49(3), 464–469.

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

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