O·I·Analytical

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 is intensified with sodium nitroferricyanide, and the absorbance is measured at 660 nm.

Interferences:

Eliminate precipitation of calcium and magnesium hydroxides by adding sodium citrate. Filter turbid samples prior to analysis. Samples with background absorbance at the analytical wavelength may interfere.

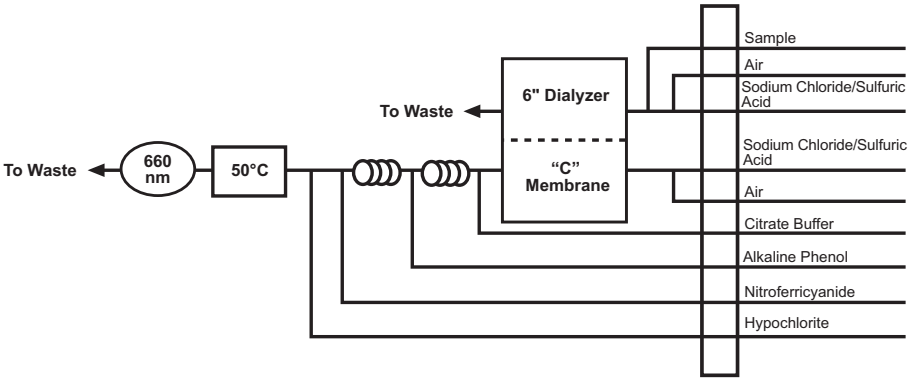
Performance Specifications:

Range:	0.20–250 mg/L ammonia as nitrogen (N)
Throughput:	30 samples/hour
Precision:	
0.20 mg/L	<3% RSD
250 mg/L	<2% RSD
Method Detection Limit (MDL):	0.01 mg/L N

Chemicals:

Ammonium Sulfate, $(NH_4)_2SO_4$
Brij®-35, 30% w/v
(OI Analytical Part #A21-0110-33)
Phenol, solid or liquified, 88%, C_6H_5OH
Sodium Chloride, NaCl
Sodium Citrate Dihydrate, $C_6H_5Na_3O_7•2H_2O$
Sodium Hydroxide, NaOH
Sodium Hypochlorite, 5.25% available chlorine (household bleach), NaOCl
Sodium Nitroferricyanide Dihydrate, $Na_2Fe(CN)_5NO•2H_2O$
Sulfuric Acid, concentrated, H_2SO_4

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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