

WATER

Focusing on solutions to meet your needs.

Timberline Instruments
1880 S. Flatiron Ct., Unit G
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800-777-5996

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EPA Approved Method

Timberline Ammonia & Nitrate Analyzer



The Model TL-2800 Ammonia and Nitrate Analyzer is a laboratory instrument designed for automated analysis of ammonia and nitrate/nitrite in drinking water, surface water, and other aqueous samples.

Our patented gas diffusion / conductivity principle provides results **unaffected by turbidity or color**. **Ultra-sensitive detection** is easily achieved with a high sensitivity membrane.

Standard Methods, 4500-N D -
Conductometric Determination of Inorganic Nitrogen

EPA Approved Method for Clean Water Act Applications
- "Determination of Inorganic Ammonia by Continuous
Flow Gas Diffusion and Conductivity Cell Analysis"
Timberline Method Ammonia-001

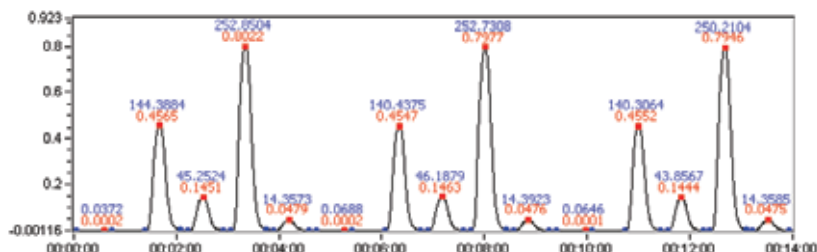


Theory of Operation:

An 8-roller peristaltic pump directs sample, caustic, and absorbing solutions into a tubular diffusion membrane assembly. Within the assembly, sample is mixed with the caustic solution resulting in a mixture with a pH of 11 or higher. At this pH level, virtually all ammonium ions present in the sample are converted to dissolved ammonia gas.

As the sample & caustic mixture flows over the tubular membrane, dissolved ammonia gas diffuses through the membrane wall and is absorbed by a buffered solution at pH 6.5 flowing on the inside. The measured change in electrical conductance of the absorbing solution is proportional to the concentration of ammonium ion present in the sample.

Passing the sample/caustic mixture through an optional zinc reduction cartridge reduces nitrate and nitrite ions to ammonium ions, allowing measurement of the total inorganic nitrogen concentration.



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Why choose Timberline?



Integral Membrane Separation & Conductivity Detection

Results are unaffected by turbidity or color of the sample. Significantly reduces interferences.

Low Maintenance

Samples are introduced via peristaltic pump with timed injection. The absence of sample injection valves reduces the need for filtration and prevents costly repairs and maintenance issues associated with premature valve failure.

High Sample Throughput

A 1.5-2.5 minute analysis time allows for rapid determination, reducing the total cost per sample.

Minimal Reagent Requirements Minimal Disposal Issues

Only three reagents are required for operation.

- Dilute Borate Buffer
- Dilute Sodium Hydroxide
- Deionized Water

Activated zinc cartridges are used for nitrate analysis.

Integrated Data Acquisition Hardware

Data acquisition hardware runs with an onboard Microsoft® Windows 10 operating system, allowing for easy connection to networks, printers or external USB drives.

Intuitive Software

The Microsoft® Windows based data acquisition software provides complete automation of the instrument and sampling system, while the intuitive graphical user interface makes it very easy to learn and implement.

High Sensitivity

Ultra sensitive detection down to 10 ppb.

Analytical Specifications:

Analysis Time

One sample every 1.5-2.5 minutes

Dynamic Range

Standard Sensitivity - 50 ppb to 500 ppm
High Sensitivity - 10 ppb to 10 ppm

Precision and Accuracy

(Ammonia) $\pm 5\%$ of the amount present
(Nitrate/Nitrite) $\pm 10\%$ of the amount present

Calibration Frequency

Once per day