

FIALab, Inc. is excited to announce our new EPA approved method for Ammonia and Total Kjeldahl Nitrogen (TKN analyses), FIALab 100. This method is included in the EPA Clean Water Act 2021 Methods Update Rule. Our novel method utilizes the o-phthalaldehyde (OPA) method with gas diffusion on a FIAlyzer-1000 platform with in-line fluorescence detection; resulting in a simplified, highly sensitive methodology that is capable of determinations in complex sample matrices. The FIALab 100 method requires only two reagent streams and one carrier stream, allowing for a significant reduction in the overall platform size and an analytical throughput up to 50 samples/hour. A single computer interface, FIASoft, provides real time signal monitoring and controls the entire analytical process from the autosampler through the FIALab 100 methodology, signal monitoring, and signal post processing.

The FIALab 100 in-line gas diffusion methodology results in negligible matrix interferences as the ammonia analyte diffuses through a gas-permeable membrane into the OPA reagent stream where the fluorophore to be monitored is produced. A copper (Cu) catalyst can be used in place of mercury (Hg) for TKN digestions, as any coloration in the sample remains in the sample stream and is excluded from the detector.

Furthermore, fluorescence detection allows for increased sensitivity, with a minimum LOD of 0.012ppm N-NH<sub>4</sub> and a dynamic range up to 10ppm N-NH<sub>4</sub>.

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