Nitrite – NED Method

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Applications and Industries

Industrial wastewater influent and effluent, industrial process waters, boiler water, cooling water, surface and ground water.

References

APHA Standard Methods 23rd ed., Method 4500-NO_2-B – 2000
USEPA Methods for Chemical Analysis of Water and Wastes, Method 354.1 (1983).

Chemistry

In an acidic solution, nitrite diazotizes sulfanilic acid (a primary aromatic amine), then couples with N-(1-naphthyl) ethylenediamine dihydrochloride (NED) to produce an intense reddish-purple colored dye. The resulting color intensity is proportional to the nitrite concentration in the sample. Results are expressed as ppm (mg/L) nitrite-nitrogen (NO_2-N). To convert results to ppm NO_2, multiply by 3.3.

Available Analysis Systems

Visual colorimetric: CHEMets®, HR CHEMets®
Instrumental colorimetric: Vacu-vials®

Storage Requirements

Products should be stored in the dark and at room temperature.

Safety Information

Safety Data Sheets (SDS) are available upon request and at www.sdsfetch.com. Read SDS before using these products. Breaking the tip of an ampoule in air rather than water may cause the glass ampoule to shatter. Wear safety glasses and protective gloves.

Interference Information

- **Ammonia** (NH_3): No bias up to 100 ppm
- **Chlorine** (Cl_2): Counteracts nitrite 1 part per 5 parts chlorine
- **Chlorides** (Cl-): Induces slight positive bias
- **Ferric iron** (Fe^{3+}): Negative bias
- **Ferrous Iron** (Fe^{2+}): Up to 100 ppm has no effect.
- **Cupric copper** (Cu^{2+}): Negative bias
- **Chromate** (CrO_4^{2-}) interferes by causing the formation of a yellow color.
- **Nitrate** (NO_3^-) up to 100 ppm does not interfere.
- **Alkalinity**: Up to approximately 400 ppm $CaCO_3$ can be tolerated. For samples with higher alkalinity, adjust the pH to approximately 5 prior to analysis.
- **Hardness**: No effect at 1600 ppm $CaCO_3$ for Calcium or Magnesium
- **Phosphate** (PO_4^{3-}): No bias detected at 1000 ppm.
- **Sulfate** (SO_4^{2-}): No bias detected at 1600 ppm
- Sample color or turbidity may make a color match difficult during visual colorimetric testing and may cause a false positive result with instrumental colorimetric tests. **CHEMetrics' Sample Zeroing Accessory Pack (A-0025)** can be used to correct for potential errors during instrumental analysis.

Accuracy Statement

Statements of accuracy are based on laboratory tests performed under ideal testing conditions using standards of known concentration prepared in deionized water.

CHEMets® kits: ± 1 color standard increment

Vacu-vials® kit, K-7013:

≤ 0.006 ppm at 0 ppm
± 0.006 ppm at 0.020 ppm
± 0.038 ppm at 0.190 ppm
± 0.056 ppm at 0.560 ppm