

Methods

Nitrite, an intermediate in the nitrogen cycle, is formed during the decomposition of organic matter but readily oxidizes to form nitrate. These processes occur in wastewater treatment plants, water distribution systems, and natural waters. Nitrites are useful as corrosion inhibitors, preservatives, pigments, and in manufacturing many organic preservative chemicals. A Maximum Contaminant Level of 1 mg/L has been established by the USEPA for nitrite-nitrogen in drinking water.

Azo Dye Formation Method

References: APHA Standard Methods, 22nd ed., Method 4500-NO₂⁻ B - 2000. USEPA Methods for Chemical Analysis of Water and Wastes, Method 354.1 (1983).

Nitrite diazotizes with a primary aromatic amine in an acidic solution to produce a highly colored azo dye. The intensity of the color is directly proportional to the concentration of nitrite in the sample. Nitrate will not interfere. Results are expressed as ppm (mg/L) NO₂-N.

The Ceric Sulfate Titrimetric Method

Reference: Developed by CHEMetrics, Inc.

Ceric sulfate is the titrant and ferroin is the end point indicator. The method is free from glycol interference in samples that contain up to 75% glycol, making it particularly applicable to systems that contain nitrite corrosion inhibitors. Results are expressed as ppm (mg/L) NaNO₂.



Visual Kits

Range: 0-2.2 ppm as N
MDL: 0.25 ppm / Method: Azo Dye Formation

	Cat#
CHEMets Kit	K-7004
CHEMets Refill, 30 ampoules, Shelf-life 12 months	R-7002
Comparator, Shelf-life 12 months 0, 0.25, 0.5, 0.75, 1.0, 1.3, 1.6, 1.8, 2.2 ppm	C-7004
Kit comes in a plastic case and contains everything needed to perform 30 tests: Refill, Comparator, 25 mL sample cup and instructions.	

Range: 0-70 ppm as N
MDL: 5 ppm / Method: Azo Dye Formation

	Cat#
VACUettes Kit	K-7004D
VACUettes Refill, 30 ampoules, Shelf-life 12 months	R-7002D
Comparator, Shelf-life 12 months 0, 5, 10, 20, 30, 40, 50, 60, 70 ppm	C-7004D
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Comparator, dilutor snapper cup, micro test tube and instructions.	

Range: 0-150 ppm as N
MDL: 12.5 ppm / Method: Azo Dye Formation

	Cat#
VACUettes Kit	K-7004A
VACUettes Refill, 30 ampoules, Shelf-life 12 months	R-7002A
Comparator, Shelf-life 12 months 0, 12.5, 25, 40, 70, 90, 110, 130, 150 ppm	C-7004A
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Comparator, dilutor snapper cup, micro test tube and instructions.	

Range: 0-260 ppm as N
MDL: 25 ppm / Method: Azo Dye Formation

	Cat#
VACUettes Kit	K-7004B
VACUettes Refill, 30 ampoules, Shelf-life 12 months	R-7002B
Comparator, Shelf-life 12 months 0, 25, 50, 90, 110, 150, 180, 220, 260 ppm	C-7004B
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Comparator, dilutor snapper cup, micro test tube and instructions.	

 Instrumental Kit

Range: 0-2600 ppm as N
MDL: 250 ppm / Method: Azo Dye Formation

VACUettes Kit	Cat# K-7004C
VACUettes Refill, 30 ampoules, Shelf-life 12 months	R-7002C
Comparator, Shelf-life 12 months 0, 250, 500, 900, 1300, 1700, 1900, 2200, 2600 ppm	C-7004C
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Comparator, dilutor snapper cup, micro test tube and instructions.	

Range: 250-2500 ppm as NaNO₂
MDL: 250 ppm / Method: Ceric Sulfate Titrant with Ferroin Indicator

Titrets Kit	Cat# K-7025
Increments: 250, 275, 300, 325, 350, 375, 400, 450, 500, 625, 750, 875, 1000, 1250, 1750, 2500 ppm	
Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules with valve assemblies, titrettor, 25 mL sample cup and instructions.	

Range: 500-5000 ppm as NaNO₂
MDL: 500 ppm / Method: Ceric Sulfate Titrant with Ferroin Indicator

Titrets Kit	Cat# K-7050
Increments: 500, 550, 600, 650, 700, 750, 800, 900, 1000, 1250, 1500, 1750, 2000, 2500, 3500, 5000 ppm	
Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules with valve assemblies, titrettor, 25 mL sample cup and instructions.	

Multi-Analyte Photometers
V-2000 / V-3000 Series
(See page 14 for instrumental features)

Range: 0-0.800 ppm as N
Method: Azo Dye Formation

Vacu-vials Kit , Shelf-life 12 months	Cat# K-7003
Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, 25 mL sample cup, ampoule blank and instructions.	

Vacu-vials Kits require the use of a CHEMetrics Direct-Readout Photometer (photometers sold separately) or a spectrophotometer capable of accepting a 13 mm diameter round cell. See page 14 for details.

Kit Components common to Nitrite

Description	Cat#
Sample Cup Pack, 25 mL (6 ea)	A-0013
Micro Test Tube Pack (10 ea)	A-0015
Dilutor Snapper Cup Pack (6 ea)	A-0018
Ampoule Blank Pack (5 ea)	A-0023
Titrettor Pack (1 ea)	A-0053

*Instructions and MSDS(s) are posted on our website.
If no shelf-life is listed for a product, then the shelf-life is at least 2 years.*

