

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.

Azo Dye Formation Method

Reference: APHA Standard Methods, 20th. ed., pp.4-112, Method 4500-NO₂-B (1998). USEPA Methods for Chemical Analysis of Water and Wastes, Method 354.1 (1983).

Test kits containing CHEMets®, VACUettes®, or Vacuials® ampoules are based on a colorimetric chemistry in which nitrite reacts to form a pink 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.

CHEMetrics' method is particularly applicable to systems that contain nitrite corrosion inhibitors in the presence of glycol. 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. Results are expressed as ppm (mg/L) NaNO₂.

Visual Kits

Range: 0-0.4 & 0.4-2 ppm as N
MDL: 0.025 ppm / Method: Azo Dye Formation

	Cat#
CHEMets Kit	K-7002
CHEMets Refill, 30 ampoules	R-7002
Low Range Comparator, Shelf-life 2 years: 0, 0.05, 0.10, 0.15, 0.20, 0.25, 0.30, 0.40 ppm	C-7001
High Range Comparator, Shelf-life 2 years: 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0 ppm	C-7002
Kit comes in a plastic case and contains everything needed to perform 30 tests: Refill, Low and High Range Comparators, 25 mL sample cup, instructions, and MSDS.	

Range: 0-10 & 10-50 ppm as N
MDL: 1.25 ppm / Method: Azo Dye Formation

	Cat#
VACUettes Kit	K-7002D
VACUettes Refill, 30 ampoules	R-7002D
Low Range Comparator, Shelf-life 2 years: 0, 1.25, 2.5, 3.75, 5.0, 6.25, 7.5, 10 ppm	C-7001D
High Range Comparator, Shelf-life 2 years: 10, 15, 20, 25, 30, 35, 40, 45, 50 ppm	C-7002D
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, dilutor snapper cup, micro test tube, instructions, and MSDS.	

Range: 0-20 & 20-100 ppm as N
MDL: 2.5 ppm / Method: Azo Dye Formation

	Cat#
VACUettes Kit	K-7002A
VACUettes Refill, 30 ampoules	R-7002A
Low Range Comparator, Shelf-life 2 years: 0, 2.5, 5, 7.5, 10, 12.5, 15, 20 ppm	C-7001A
High Range Comparator, Shelf-life 2 years: 20, 30, 40, 50, 60, 70, 80, 90, 100 ppm	C-7002A
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, dilutor snapper cup, micro test tube, instructions, and MSDS.	

Range: 0-40 & 40-200 ppm as N
MDL: 5 ppm / Method: Azo Dye Formation

	Cat#
VACUettes Kit	K-7002B
VACUettes Refill, 30 ampoules	R-7002B
Low Range Comparator, Shelf-life 2 years: 0, 5, 10, 15, 20, 25, 30, 40 ppm	C-7001B
High Range Comparator, Shelf-life 2 years: 40, 60, 80, 100, 120, 140, 160, 180, 200 ppm	C-7002B
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, dilutor snapper cup, micro test tube, instructions, and MSDS.	





Instrumental Kits

Range: 0-400 & 400-2000 ppm as N MDL: 50 ppm / Method: Azo Dye Formation	
VACUettes Kit	Cat# K-7002C
VACUettes Refill, 30 ampoules	R-7002C
Low Range Comparator, Shelf-life 2 years: 0, 50, 100, 150, 200, 250, 300, 400 ppm	C-7001C
High Range Comparator, Shelf-life 2 years: 400, 600, 800, 1000, 1200, 1400, 1600, 1800, 2000 ppm	C-7002C
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, dilutor snapper cup, micro test tube, instructions, and MSDS.	

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, thirty valve assemblies, titrettor, 25 mL sample cup, instructions, and MSDS.	

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, thirty valve assemblies, titrettor, 25 mL sample cup, instructions, and MSDS.	

Range: 1250-12,500 ppm as NaNO₂ MDL: 1250 ppm / Method: Ceric Sulfate Titrant with Ferroin Indicator	
Titrets Kit	Cat# K-7080
Increments: 1250, 1375, 1500, 1625, 1750, 1875, 2000, 2250, 2500, 3125, 3750, 4375, 5000, 6250, 8750, 12,500 ppm	
Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, thirty valve assemblies, titrettor, 25 mL sample cup, instructions, and MSDS.	

V-2000 Multi-Analyte Photometer (See page 8 for instrumental features)

Range: 0.080-0.800 ppm as N
Method: Azo Dye Formation

Vacu-vials Kit	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, instructions, calibration table, and MSDS.

Vacu-vials Kits require the use of the V-2000 Photometer or a spectrophotometer capable of accepting a 13 mm diameter round cell. Instrument sold separately.

V-1000 Multi-Analyte Photometer (See page 10 for instrumental features)

Range: 0.080-0.800 ppm as N
Method: Azo Dye Formation

VVR Module	Cat# V-7003
Vacu-vials Refill, 30 ampoules	R-7003
VVR Filter, Shelf-life 2 years	F-7003

Module comes in a cardboard box and contains everything needed to perform 30 tests: Refill, VVR Filter, 25 mL sample cup, instructions, and MSDS.

VVR Modules require the use of the V-1000 Photometer. Instrument sold separately.

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
VVR Zero Ampoule Pack (5 ea)	A-0128
VVR Zero Test Tube Pack (5 ea)	A-0129

If no shelf-life is listed for a product, then the shelf-life is at least 2 years.