

Methods

Hydrogen peroxide is a strong oxidizing agent with a variety of uses. Applications include the treating of industrial effluents and domestic waste and serving as a disinfectant in aseptic packaging.

The Ferric Thiocyanate Method

Reference: D. F. Boltz and J. A. Howell, eds., *Colorimetric Determination of Nonmetals*, 2nd ed., Vol. 8, p. 304 (1978).

The ferric thiocyanate method consists of ammonium thiocyanate and ferrous iron in acid solution. Hydrogen peroxide oxidizes ferrous iron to the ferric state, resulting in the formation of a red thiocyanate complex. Chlorine will not interfere with this method. Ferric iron will interfere. Results are expressed as ppm (mg/L) H₂O₂.

The DDPD Method

Reference: Developed by CHEMetrics, Inc.

With the DDPD Method, hydrogen peroxide reacts with DDPD in the presence of ammonium molybdate to form a purple product. Results are expressed as ppm (mg/L) H₂O₂.

The Ceric Sulfate Titrimetric Method

Reference: Developed by CHEMetrics, Inc.

CHEMetrics developed a titrimetric method using ceric sulfate as the titrant and ferroin as the end point indicator. A color change from green to orange signals the end of the titration. Results are expressed as percent (%) H₂O₂.



Visual Kits

Range: 0-0.10 ppm
MDL: 0.02 ppm / Method: DDPD

	Cat#
ULR CHEMets Kit	K-5511
ULR CHEMets Refill, 30 ampoules	R-5511
Activator Solution Pack, six 10 mL bottles, Shelf-life 2 years	A-2500 ¹
Activator Solution Pack, six 10 mL bottles, Shelf-life 2 years	A-5500 ¹
Comparator, Shelf-life 2 years: 0, 0.02, 0.03, 0.04, 0.05, 0.06, 0.08, 0.10 ppm	C-5511

Kit comes in a plastic case and contains everything needed to perform 30 tests: Refill, Comparator, Activator Solutions, 25 mL sample cup, instructions, and MSDS.

Range: 0-0.50 ppm
MDL: 0.025 ppm / Method: DDPD

	Cat#
CHEMets Kit	K-5504
CHEMets Refill, 30 ampoules	R-5504
Activator Solution Pack, six 10 mL bottles, Shelf-life 2 years	A-2500 ¹
Activator Solution Pack, six 10 mL bottles, Shelf-life 2 years	A-5500 ¹
Comparator, Shelf-life 2 years: 0, 0.05, 0.10, 0.15, 0.20, 0.25, 0.30, 0.50 ppm	C-5504

Kit comes in a plastic case and contains everything needed to perform 30 tests: Refill, Comparator, Activator Solutions, 25 mL sample cup, instructions, and MSDS.

Range: 0-1 & 1-10 ppm
MDL: 0.05 ppm / Method: Ferric Thiocyanate

	Cat#
CHEMets Kit	K-5510
CHEMets Refill, 30 ampoules	R-5510
Low Range Comparator, Shelf-life 2 years: 0, 0.1, 0.2, 0.3, 0.4, 0.6, 0.8, 1.0 ppm	C-5501
High Range Comparator, Shelf-life 2 years: 1, 2, 3, 4, 5, 6, 7, 8, 10 ppm	C-5510

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: 0-25 & 25-250 ppm
MDL: 2.5 ppm / Method: Ferric Thiocyanate

	Cat#
VACUettes Kit	K-5510D
VACUettes Refill, 30 ampoules	R-5510D
Low Range Comparator, Shelf-life 2 years: 0, 2.5, 5, 7.5, 10, 15, 20, 25 ppm	C-5501D
High Range Comparator, Shelf-life 2 years: 25, 50, 75, 100, 125, 150, 175, 200, 250 ppm	C-5510D

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: 0-50 & 50-500 ppm
MDL: 5 ppm / Method: Ferric Thiocyanate

	Cat#
VACUettes Kit	K-5510A
VACUettes Refill, 30 ampoules	R-5510A
Low Range Comparator, Shelf-life 2 years: 0, 5, 10, 15, 20, 30, 40, 50 ppm	C-5501A
High Range Comparator, Shelf-life 2 years: 50, 100, 150, 200, 250, 300, 350, 400, 500 ppm	C-5510A

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.



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

Range: 0.20-2.00 ppm
Method: DDPD

Vacu-vials Kit	Cat# K-5503
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Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, Activator Solutions, 25 mL sample cup, ampoule blank, instructions, calibration table, and MSDS.

Range: V-2000: 0.15-6.00 ppm /Spec: 0.15-4.00
Method: Ferric Thiocyanate

Vacu-vials Kit	Cat# K-5543
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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: 0.20-2.00 ppm
Method: DDPD

VVR Module	Cat# V-5503
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Vacu-vials Refill, 30 ampoules	R-5503
Activator Solution Pack, six 10 mL bottles, Shelf-life 2 years	A-2500 ¹
Activator Solution Pack, six 10 mL bottles, Shelf-life 2 years	A-5500 ¹
VVR Filter, Shelf-life 2 years	F-5503

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

Range: 0.15-4.00 ppm
Method: Ferric Thiocyanate

VVR Module	Cat# V-5543
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Vacu-vials Refill, 30 ampoules	R-5543
VVR Filter, Shelf-life 2 years	F-5543

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.

Range: 0-100 & 100-1000 ppm MDL: 10 ppm / Method: Ferric Thiocyanate	
VACUettes Kit	Cat# K-5510B
VACUettes Refill, 30 ampoules	R-5510B
Low Range Comparator, Shelf-life 2 years: 0, 10, 20, 30, 40, 60, 80, 100 ppm	C-5501B
High Range Comparator, Shelf-life 2 years: 100, 200, 300, 400, 500, 600, 700, 800, 1000 ppm	C-5510B
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: 0-1000 & 1000-10,000 ppm MDL: 100 ppm / Method: Ferric Thiocyanate	
VACUettes Kit	Cat# K-5510C
VACUettes Refill, 30 ampoules	R-5510C
Low Range Comparator, Shelf-life 2 years: 0, 100, 200, 300, 400, 600, 800, 1000 ppm	C-5501C
High Range Comparator, Shelf-life 2 years: 1000, 2000, 3000, 4000, 5000, 6000, 7000, 8000, 10,000 ppm	C-5510C
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: 2-20% MDL: 2.0% Method: Ceric Sulfate Titrant with Ferroin Indicator	
Titrets Kit	Cat# K-5530
Increments: 2.0, 2.2, 2.4, 2.6, 2.8, 3.0, 3.2, 3.6, 4.0, 5.0, 6.0, 7.0, 8.0, 10, 14, 20%	
Kit comes in a cardboard box and contains everything needed to perform 30 tests (except distilled water): thirty ampoules, thirty valve assemblies, dropper, titretor, 50 mL sample cup, instructions, and MSDS.	

Kit Components common to Hydrogen Peroxide	
Description	Cat#
Sample Cup Pack, 25 mL (6 ea)	A-0013
Mico Text Tube Pack (10 ea)	A-0015
Dilutor Snapper Cup Pack (6 ea)	A-0018
Ampoule Blank Pack (5 ea)	A-0023
Dropper Pack, 0.25 mL (10 ea)	A-0029
Titrettor Pack (1 ea)	A-0053
Sample Cup & Cap Pack, 50 mL (6 ea)	A-0058
VVR Zero Ampoule Pack (5 ea)	A-0128
VVR Zero Test Tube Pack (5 ea)	A-0129

¹The accessory pack supplies enough solution to perform at least 200 tests.

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