



## Visual Kits

## Methods

Because of its strong oxidizing properties, chlorine is an excellent biocide used to treat potable waters, municipal wastes, and swimming pools. When used to treat potable water, chlorine helps alleviate the adverse effects of iron, manganese, ammonia, and sulfide. The Maximum Residual Disinfectant Level for chlorine is 4 mg/L in drinking water.

### The DPD Method

**References:** USEPA Methods for Chemical Analysis of Water and Wastes, Method 330.5 (1983).  
 APHA Standard Methods, 22<sup>nd</sup> ed., Method 4500-Cl G-2000.



In the USEPA-accepted DPD methodology, free chlorine reacts with DPD to form a pink product. When ammonia or amines are present, some of the chlorine may exist as

combined chlorine. Combined chlorine will not interfere with the free chlorine results, provided the readings are taken at one minute. To determine total chlorine (the sum of free and combined), use the A-2500 Activator Solution (potassium iodide) supplied in the kit. Results are expressed as ppm (mg/L) Cl<sub>2</sub>.

The DPD method is also applicable to the direct determination of hypochlorite concentrations in various cleaning preparations and disinfectants prior to their dilution. DPD reacts with hypochlorite ions to form a pink color. Results are expressed as percent (%) NaOCl.

### The DDPD™ Method

**Reference:** Developed by CHEMetrics, Inc.

The DDPD™ method is derived from the DPD method. Test kits that employ this chemistry are well suited for use where biocides and chromate corrosion inhibitors are used simultaneously. DDPD reacts with free chlorine to form a purple product. When ammonia or amines are present in the sample, some of the chlorine may exist as *combined chlorine*. To determine total chlorine (the sum of free and combined), use the A-2500 Activator Solution (potassium iodide) that is supplied in the kit. Results are expressed as ppm (mg/L) Cl<sub>2</sub>.

Range: 0-0.20 ppm MDL: 0.04 ppm / Method: DDPD	
	Cat#
<b>Chlorine (free &amp; total) ULR CHEMets Kit</b>	<b>K-2511</b>
ULR CHEMets Refill, 30 ampoules	R-2511
Activator Solution Pack, six 10 mL bottles	A-2500 <sup>1</sup>
Comparator, Shelf-life 12 months 0, 0.04, 0.06, 0.08, 0.10, 0.12, 0.16, 0.20 ppm	C-2511
Kit comes in a cardboard box and contains everything needed to perform 30 tests: Refill, Comparator, Activator Solution, 25 mL sample cup and instructions.	

Range: 0-1 & 0-5 ppm MDL: 0.05 ppm / Method: DPD	
	Cat#
<b>Chlorine (free &amp; total) CHEMets Kit</b>	<b>K-2504</b>
CHEMets Refill, 30 ampoules	R-2500
Activator Solution Pack, six 10 mL bottles	A-2500 <sup>1</sup>
Low Range Comparator 0, 0.1, 0.2, 0.3, 0.4, 0.6, 0.8, 1.0 ppm	C-2504
High Range Comparator 0, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 5.0 ppm	C-2506
Kit comes in a plastic case and contains everything needed to perform 30 tests: Refill, Low and High Range Comparators, Activator Solution, 25 mL sample cup, and instructions.	

Range: 0-25 & 0-125 ppm MDL: 2.5 ppm / Method: DPD	
	Cat#
<b>Chlorine (free &amp; total) CHEMets Kit</b>	<b>K-2504D</b>
CHEMets Refill, 30 ampoules	R-2504
Activator Solution Pack, six 10 mL bottles	A-2500 <sup>1</sup>
Low Range Comparator 0, 2.5, 5, 7.5, 10, 15, 20, 25 ppm	C-2504D
High Range Comparator 0, 25, 37.5, 50, 62.5, 75, 87.5, 100, 125 ppm	C-2506D
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, Activator Solution, 25 mL sample cup, 3.0 mL syringe, and instructions.	

Range: 0-50 & 0-250 ppm MDL: 5 ppm / Method: DPD	
	Cat#
<b>Chlorine (free &amp; total) CHEMets Kit</b>	<b>K-2504A</b>
CHEMets Refill, 30 ampoules	R-2504
Activator Solution Pack, six 10 mL bottles	A-2500 <sup>1</sup>
Low Range Comparator 0, 5, 10, 15, 20, 30, 40, 50 ppm	C-2504A
High Range Comparator 0, 50, 75, 100, 125, 150, 175, 200, 250 ppm	C-2506A
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, Activator Solution, 25 mL sample cup, 1.0 mL syringe and instructions.	

\*Accepted for drinking and wastewater using CHEMetrics instrumental DPD Vacu-vials products. Please contact us for a copy of the USEPA acceptance letter.



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Range: 0-0.20 ppm MDL: 0.04 ppm / Method: DDPD	
	Cat#
<b>Chlorine (free &amp; total) ULR CHEMets Kit</b>	<b>K-2511</b>
ULR CHEMets Refill, 30 ampoules	R-2511
Activator Solution Pack, six 10 mL bottles	A-2500 <sup>1</sup>
Comparator, Shelf-life 12 months 0, 0.04, 0.06, 0.08, 0.10, 0.12, 0.16, 0.20 ppm	C-2511
Kit comes in a cardboard box and contains everything needed to perform 30 tests: Refill, Comparator, Activator Solution, 25 mL sample cup and instructions.	

Range: 0-1 & 0-5 ppm MDL: 0.05 ppm / Method: DPD	
	Cat#
<b>Chlorine (free &amp; total) CHEMets Kit</b>	<b>K-2504</b>
CHEMets Refill, 30 ampoules	R-2500
Activator Solution Pack, six 10 mL bottles	A-2500 <sup>1</sup>
Low Range Comparator 0, 0.1, 0.2, 0.3, 0.4, 0.6, 0.8, 1.0 ppm	C-2504
High Range Comparator 0, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 5.0 ppm	C-2506
Kit comes in a plastic case and contains everything needed to perform 30 tests: Refill, Low and High Range Comparators, Activator Solution, 25 mL sample cup, and instructions.	

Range: 0-25 & 0-125 ppm MDL: 2.5 ppm / Method: DPD	
	Cat#
<b>Chlorine (free &amp; total) CHEMets Kit</b>	<b>K-2504D</b>
CHEMets Refill, 30 ampoules	R-2504
Activator Solution Pack, six 10 mL bottles	A-2500 <sup>1</sup>
Low Range Comparator 0, 2.5, 5, 7.5, 10, 15, 20, 25 ppm	C-2504D
High Range Comparator 0, 25, 37.5, 50, 62.5, 75, 87.5, 100, 125 ppm	C-2506D
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, Activator Solution, 25 mL sample cup, 3.0 mL syringe, and instructions.	

Range: 0-50 & 0-250 ppm MDL: 5 ppm / Method: DPD	
	Cat#
<b>Chlorine (free &amp; total) CHEMets Kit</b>	<b>K-2504A</b>
CHEMets Refill, 30 ampoules	R-2504
Activator Solution Pack, six 10 mL bottles	A-2500 <sup>1</sup>
Low Range Comparator 0, 5, 10, 15, 20, 30, 40, 50 ppm	C-2504A
High Range Comparator 0, 50, 75, 100, 125, 150, 175, 200, 250 ppm	C-2506A
Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, Activator Solution, 25 mL sample cup, 1.0 mL syringe and instructions.	

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## Instrumental Kits

### Multi-Analyte Photometers

V-2000 / V-3000 Series

(See page 14 for instrumental features)

Range: 0-5.00 ppm  
Method: DPD

	Cat#
<b>Chlorine (free) Vacu-vials Kit (USEPA-accepted)</b>	<b>K-2523</b>

Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, 25 mL sample cup, ampoule blank and instructions.

Range: 0-5.00 ppm  
Method: DPD

	Cat#
<b>Chlorine (free &amp; total) Vacu-vials Kit (USEPA-accepted)</b>	<b>K-2513</b>

Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, Activator Solution, 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.*

### SAM Single Analyte Photometer

(See page 17 for instrumental features)

Range: 0-5.00 ppm  
Method: DPD

	Cat#
<b>Chlorine (free &amp; total) SAM Kit</b>	<b>I-2001</b>

Vacu-vials Kit, 30 ampoules, Activator Solution, 25 mL sample cup, ampoule blank and instructions.

SAM Kit comes in a plastic case and contains everything needed to perform 30 tests: Vacu-vials Kit, SAM Photometer, light shield, 4 AAA batteries, screwdriver, and instructions.

<sup>1</sup>The accessory pack supplies enough solution to perform at least 200 tests. The Activator Solution, A-2500, is used to determine Total Chlorine.

#### Kit Components common to Chlorine

Description	Cat#
Sample Cup Pack, 25 mL (6 ea)	A-0013
Ampoule Blank Pack (5 ea)	A-0023
Syringe Pack, 1.0 mL (6 ea)	A-0027
Syringe Pack, 3.0 mL (6 ea)	A-0063
Pipette Tips Pack (30 ea)	A-0171
MiniPet®, 25 µL (1 ea)	A-0191
MiniPet®, 50 µL (1 ea)	A-0193
MiniPet®, 200 µL (1 ea)	A-0194
Sample Prep Cup Pack (6 ea)	A-0200

Instructions and SDSs are posted on our website.

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

Range: 0-100 & 0-500 ppm  
MDL: 10 ppm / Method: DPD

	Cat#
<b>Chlorine (free &amp; total) CHEMets Kit</b>	<b>K-2504B</b>
CHEMets Refill, 30 ampoules and 30 pipette tips	R-2509
Activator Solution Pack, six 10 mL bottles	A-2500 <sup>1</sup>
Low Range Comparator 0, 10, 20, 30, 40, 60, 80, 100 ppm	C-2504B
High Range Comparator 0, 100, 150, 200, 250, 300, 350, 400, 500 ppm	C-2506B

Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, Activator Solution, 25 mL sample cup, 200 µL MiniPet®, and instructions.

Range: 0-400 & 0-2000 ppm  
MDL: 400 ppm / Method: DPD

	Cat#
<b>Chlorine (free &amp; total) CHEMets Kit</b>	<b>K-2504C</b>
CHEMets Refill, 30 ampoules and 30 pipette tips	R-2509
Activator Solution Pack, six 10 mL bottles	A-2500 <sup>1</sup>
Low Range Comparator 0, 40, 80, 120, 160, 240, 320, 400 ppm	C-2504C
High Range Comparator 0, 400, 600, 800, 1000, 1200, 1400, 1600, 2000 ppm	C-2506C

Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Low and High Range Comparators, Activator Solution, 25 mL sample cup, 50 µL MiniPet®, and instructions.

Range: 0-1.55%  
MDL: 0.3% / Method: DPD

	Cat#
<b>Chlorine (hypochlorite) CHEMets Kit</b>	<b>K-5808</b>
CHEMets Refill, 30 ampoules and 30 pipette tips	R-5808
Comparator 0, 0.3, 0.47, 0.63, 0.78, 0.95, 1.1, 1.25, 1.55%	C-5808

Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Comparator, 25 mL sample cup, sample prep cup, 3.0 mL syringe, 200 µL MiniPet®, and instructions.

Range: 0-12.5%  
MDL: 2.5% / Method: DPD

	Cat#
<b>Chlorine (hypochlorite) CHEMets Kit</b>	<b>K-5816</b>
CHEMets Refill, 30 ampoules and 30 pipette tips	R-5808
Comparator 0, 2.5, 3.8, 5, 6.3, 7.5, 8.8, 10, 12.5%	C-5816

Kit comes in a plastic case and contains everything needed to perform 30 tests (except distilled water): Refill, Comparator, 25 mL sample cup, sample prep cup, 3.0 mL syringe, 25 µL MiniPet®, and instructions.

MiniPet® is a registered trademark of Tricontinent Scientific, Inc.