

Chlorine Dioxide

Method

Chlorine dioxide is used as an oxidizing microbiocide in industrial cooling water treatment, the dairy industry, the meat industry, and many other food and beverage industry applications. It is used as a bleaching agent in the pulp and paper industry, and as a disinfectant in municipal water treatment. Industrial waste treatment facilities use chlorine dioxide because of its selectivity for certain compounds, including phenols, sulfides, cyanides, thiosulfates, and mercaptans. The oil and gas industry uses chlorine dioxide for downhole applications and as a stimulation enhancement additive. The Maximum Residual Disinfectant Level for chlorine dioxide is 0.8 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, 20th ed., Method 4500-ClO₂ D-1993 and 23rd ed., Method 4500-Cl G-2000.

In the standard DPD methodology, chlorine dioxide reacts with DPD (N, N-diethyl-p-phenylenediamine) to form a pink product. Interference from free Cl₂ is prevented (up to 6 ppm Cl₂) by the addition of glycine to the sample. Results are expressed as ppm (mg/L) ClO₂.

Visual Kit

Range: 0-2 & 0-10 ppm MDL: 0.1 ppm / Method: DPD	
CHEMets Kit	Cat# K-2705
CHEMets Refill, 30 ampoules	R-2705
Neutralizer Solution Pack, six 10 mL bottles, Shelf life 8 months	A-2700 ¹
Low Range Comparator 0, 0.2, 0.4, 0.6, 0.8, 1.2, 1.6, 2.0 ppm	C-2702
High Range Comparator 0, 2, 3, 4, 5, 6, 7, 8, 10 ppm	C-2710
Kit comes in a plastic case and contains everything needed to perform 30 tests: Refill, Low and High Range Comparators, Neutralizer Solution, 25 mL sample cup and instructions.	

Instrumental Kits

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

Range: 0-11.0 ppm Method: DPD	
Vacu-vials Kit , Shelf life 8 months	Cat# K-2703
Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, Neutralizer 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 16 for instrumental features)

Range: 0-11.0 ppm Method: DPD	
SAM Kit	Cat# I-2005
Vacu-vials Kit, 30 ampoules, Neutralizer Solution, 25 mL sample cup, ampoule blank and instructions. Shelf life 8 months.	K-2703
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.	

Components and Accessories	
Description	Cat#
Sample Cup Pack, 25 mL (6 ea)	A-0013
Ampoule Blank Pack (5 ea)	A-0023
* Sample Zeroing Accessory Pack	A-0025

¹The accessory pack supplies enough solution to perform at least 200 tests.
* For use when testing colored or turbid samples. See page 13 for details.
Instructions and SDSs are posted on our website.
If no shelf life is listed for a product, then the shelf life is at least 1 year.

Chromate (hexavalent)

Method

Hexavalent chromium salts are used in numerous industrial processes. They are also used extensively as corrosion inhibitors in open and closed cooling water systems.

The Diphenylcarbazide Method

References: APHA Standard Methods, 23rd ed., Method 3500-Cr B-2009. ASTM D 1687-02, Chromium in Water, Test Method A.

With the chromate test method, hexavalent chromium reacts with diphenylcarbazide under acid conditions to form a red-violet color. Results are expressed as ppm (mg/L) CrO₄.

Visual Kits

Range: 0-1 & 1-10 ppm MDL: 0.05 ppm / Method: Diphenylcarbazide	
CHEMets Kit	Cat# K-2810
CHEMets Refill, 30 ampoules	R-2810
Acidifier Solution Pack, six 10 mL bottles	A-2800 ¹
Low Range Comparator 0, 0.1, 0.2, 0.3, 0.4, 0.6, 0.8, 1.0 ppm	C-2801
High Range Comparator 1, 2, 3, 4, 5, 6, 7, 8, 10 ppm	C-2810
Kit comes in a plastic case and contains everything needed to perform 30 tests: Refill, Low and High Range Comparators, Acidifier Solution, 25 mL sample cup and instructions.	

Instrumental Kit

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

Range: 0-3.50 ppm Method: Diphenylcarbazide	
Vacu-vials Kit	Cat# K-2803
Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, Acidifier 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.

Components and Accessories	
Description	Cat#
Sample Cup Pack, 25 mL (6 ea)	A-0013
Ampoule Blank Pack (5 ea)	A-0023
* Sample Zeroing Accessory Pack	A-0503

* For use when testing colored or turbid samples. See page 13 for details.
Instructions and SDSs are posted on our website.
If no shelf life is listed for a product, then the shelf life is at least 1 year.



WARNING! This product can expose you to chemicals including ethylene glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.