



# Technical Data Sheet

## Chlorine Dioxide DPD Method

**Applications and Industries:** Industrial cooling water, municipal water treatment systems; Food and beverage industry, pulp and paper industry, poultry industry

**References:** APHA Standard Methods, 20<sup>th</sup> ed. Method 4500-ClO<sub>2</sub>D - 1993 and 22<sup>nd</sup> ed. Method 4500-Cl G - 2000. USEPA Methods for Chemical Analysis of Water and Wastes, Method 330.5 (1983)

**Chemistry:** Chlorine dioxide oxidizes DPD (N,N-diethyl-p-phenylenediamine) to form a pink colored species in direct proportion to the chlorine dioxide concentration. Results are expressed as ppm (mg/L) ClO<sub>2</sub>.

**Sampling Information:** Chlorine dioxide is not stable in aqueous solution. Exposure of samples to excessive light or agitation should be minimized, and analysis should be performed immediately after sample collection.

### Interference Information:

Interference from up to 6 ppm free chlorine is prevented by the addition of glycine to the sample.

Various other oxidizing agents, including bromine, iodine, ozone and peracetic acid, and various halogenating agents will react with the chemistry to cause false high test results.

Halogens and chlorine dioxide itself at concentrations significantly above the test range may prevent proper color development, causing a false low result.

Chromate may interfere.

Permanganate, Mn<sup>+7</sup>, interferes positively.

Manganese (II), Mn<sup>+2</sup>, does not interfere at up to at least 4 ppm.

Cupric copper may interfere positively.

Nitrite at concentrations up to at least 5 ppm does not interfere.

Ferric iron and hydrogen peroxide at concentrations comparable to the test range do not interfere with this chemistry.

Samples with extreme pHs or that are highly buffered should be adjusted to pHs of approximately 6 - 7 prior to analysis.

**Safety Information:** Safety Data Sheets (SDS) are available upon request and at [www.chemetrics.com](http://www.chemetrics.com). Read SDS before using these products. Breaking the tip of an ampoule in air rather than water may cause the glass ampoule to shatter. Wear safety glasses and protective gloves.

**Available Analysis Systems:** Visual colorimetric: CHEMets®. Instrumental colorimetric: Vacu-vials®.

**Storage Requirements:** Products should be stored in the dark and at room temperature.

**Shelf Life:** *When stored in the dark and at room temperature:* Visual colorimetric: The CHEMets refill has a shelf life of 4 years. The color comparators have shelf lives of 2 years and the accessory solution has an 8-month shelf life. Instrumental colorimetric: The Vacu-vials kit has a shelf life of 8 months.

**Accuracy:** CHEMets kit: ± 1 color standard increment; Vacu-vials kit: + 10% error at 75% of full range, ± 20% error at 25% of full range, ± 30% error at CHEMetrics' Practical Detection Limit (PDL).

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