



Technical Data Sheet

Hydrogen Peroxide DPD Method

Applications and Industries: Drinking water, seawater, aseptic packaging; Food and beverage industry. Not recommended for wastewater analysis.

References: APHA Standard Methods, 22nd ed., Method 4500-Cl G - 2000; USEPA Methods for Chemical Analysis of Water and Wastes, Method 330.5 (1983); D.F. Boltz and J.A. Howell, eds., Colorimetric Determination of Nonmetals, 2nd ed., Vol. 8, p. 303 (1978).

Chemistry: The sample is treated with an excess of potassium iodide. In the presence of a molybdate catalyst, hydrogen peroxide oxidizes the iodide to iodine. The iodine then oxidizes DPD (N,N-diethyl-p-phenylenediamine) to form a pink colored species in direct proportion to the hydrogen peroxide concentration. Results are expressed as ppm (mg/L) H₂O₂.

Sample Handling: Hydrogen peroxide is not stable in aqueous solution; the hydrogen peroxide content of aqueous samples, particularly when the concentration is low, will decrease rapidly. Agitation or exposure to sunlight or other strong light will accelerate the reduction of hydrogen peroxide in solution. Analysis should be performed immediately after sample collection, and excessive agitation and exposure to light should be avoided.

Interference Information:

Various oxidizing agents, including halogens (chlorine, bromine, iodine), ozone, peracetic acid, and chloramines, as well as various halogenating agents will react with the chemistry to cause false high test results.

Chromate may interfere.

Permanganate, Mn⁺⁷, interferes positively.

Cupric copper may interfere positively.

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

These products are not applicable for wastewater analysis.

Safety Information: Safety Data Sheets (SDS) are available upon request and at 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 comparator and the accessory solutions have 2-year shelf lives. Instrumental colorimetric: The Vacu-vials kit has a shelf life of 2 years.

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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