Technical Data Sheet

Ozone
DPD Method

Applications and Industries: Potable water, pools and spas; Food and beverage industry, pharmaceutical industry; NOT applicable for seawater

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

Chemistry: The sample is treated with an excess of potassium iodide. Ozone oxidizes the iodide to iodine, and the iodine then oxidizes DPD (N,N-diethyl-p-phenylenediamine) to form a pink colored species in direct proportion to the ozone concentration. Results are expressed as ppm (mg/L) O_3.

Interference Information:
Various oxidizing agents, including halogens (chlorine, bromine, iodine), chloramines, and peracetic acid, and various halogenating agents will react with the chemistry to cause false high test results.
Ferric iron and hydrogen peroxide at levels comparable to the ozone level do not interfere with this chemistry.
Chromate may interfere.
Permanganate, Mn^{+7}, interferes positively.
Manganese (II), Mn^{+2}, 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.
These test kits are not applicable for the analysis of seawater.

Analyte-Specific Information: Because ozone decays rapidly in water, analysis should be performed immediately upon sample collection. Similarly, manipulation of the sample during collection should be minimized to avoid dissipation of ozone from the sample. Residual ozone is most stable in clean waters with pHs of less than 6, and is particularly unstable in samples with pHs above 7, as ozone instantaneously reacts with (i.e. is consumed by) hydroxide ion.

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 comparators and accessory solution have 2-year shelf lives. Instrumental colorimetric: The Vacu-vials test kit has a 2-year shelf life.

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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