



Technical Data Sheet

Manganese Periodate Method

Applications and Industries: Drinking water, natural waters, treated wastewater effluent

References: APHA Standard Methods, 14th ed., Method 314 C (1975).

Chemistry: Soluble manganese is oxidized by periodate in a slightly acidic solution to form permanganate ion. The resulting pink color is proportional to the manganese concentration in the sample. Results are expressed as ppm (mg/L) Mn.

Interference Information:

This chemistry measures soluble manganese but does not differentiate the various valence states.

Oxidizable substances, including organic materials, may interfere negatively.

Reducing agents such as sulfide, thiosulfate, sulfite, and ferrous iron may prevent the oxidation step, causing low test results.

Calcium at greater than 700 mg/L, chloride at greater than 70,000 mg/L, and magnesium greater than 100,000 mg/L may interfere.

Colored or turbid samples may make a visual color match difficult or cause a false positive result during instrumental analysis.

Highly buffered samples or extreme sample pH may exceed the buffering capacity of the reagent. For such samples, pH should be adjusted to 4-5 prior to analysis.

Manganese may precipitate above pH 6.

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®, VACUettes®. 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 and VACUettes refills have shelf lives of 4 years. The accessory solution has a 2-year shelf life and the color comparators have shelf lives of 12 months. Instrumental colorimetric: The Vacu-vials kit has a shelf life of 2 years.

Accuracy: CHEMets and VACUettes kits: ± 1 color standard increment; Vacu-vials kit: $\pm 10\%$ error at 22.5 ppm, $\pm 20\%$ error at 7.5 ppm, and $\pm 30\%$ error at 2.0 ppm.