

Chloride - Ferric Thiocyanate Method

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Applications and Industries

Drinking water, surface and saline waters, domestic and industrial wastewater.

References

APHA Standard Methods, 23rd ed., Method 4500-Cl⁻ E - 1997
D. Zall, D. Fisher, M. Garner, "Photometric Determination of Chlorides in Water," *Analytical Chemistry*, Vol. 28, No. 11, pp. 1665-1668, November 1956.

J. O'Brien, "Automatic Analysis of Chlorides in Sewage," *Wastes Engineering*, pp. 670-672, December 1962.

Chemistry

Chloride reacts with mercuric thiocyanate to liberate thiocyanate ion which then reacts with ferric ion to produce an orange-brown complex in proportion to the chloride concentration. Results are expressed as ppm (mg/L) Cl⁻.

Available Analysis Systems

Instrumental colorimetric: Vacu-vials®

Storage Requirements

Products should be stored in the dark and at room temperature.

Safety Information

Safety Data Sheets (SDS) are available upon request and at www.sdsfetch.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.

Note: This product contains mercury and must be disposed of according to local, state and federal laws.

Interference Information

- Sample color and suspended matter (turbidity) may cause a false positive result with the photometric measurement. Filtering or centrifuging the sample prior to analysis may be necessary to minimize the interference. Alternatively, CHEMetrics' Sample Zeroing Accessory Pack can be used to correct for potential errors.
- Bromide reads positively (develops color) with this chemistry.
- Relatively low levels of fluorides, nitrates, nitrites, sulfates and phosphates should not interfere. However, high concentrations of sulfates and phosphates may bleach the color, causing low test results.
- Reducing agents, including thiosulfate, sulfite, and sulfide, will likely interfere.
- Chlorine interferes positively.
- Cyanide is expected to interfere.
- Glycol interferes by enhancing color development, causing a false positive result.
- Ethyl and isopropyl alcohols, tartaric acid, and acetone cause an off, yellow-brown color.

Accuracy Statement

Statements of accuracy are based on laboratory tests performed under ideal testing conditions using standards of known concentration prepared in deionized water.

Vacu-vials® kit:

- ≤ 1.3 ppm at 0 ppm
- ± 1.5 ppm at 5.0 ppm
- ± 2.5 ppm at 10.0 ppm
- ± 4.5 ppm at 30.0 ppm