

Chloride - Ferric Thiocyanate Method

Version 9 | Mar 2018

Applications and Industries

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

References

APHA Standard Methods, 22nd 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. Ferric ion reacts with thiocyanate 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®

Shelf Life

When stored in the dark and at room temperature:

Vacu-vials kit: at least 1 year

Accuracy Statement

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

Interference Information

Color and suspended matter may interfere with the photometric measurement. Filtering or centrifuging the sample prior to analysis may be necessary to minimize the interference.

Bromide reads positively 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.

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.

Storage Requirements

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

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