DEHA - Ceric Sulfate Method

Version 3 / May 2023

Applications and Industries

boiler water

References

Developed by CHEMetrics

Chemistry

Sample is treated with an excess of ferric iron. DEHA (N,N-diethylhydroxylamine) reacts quantitatively with the ferric iron by reducing it to the ferrous state. The resulting ferrous iron is titrated with ceric sulfate. Ferroin is the endpoint indicator. Test results are expressed as ppm (mg/L) DEHA.

Available Analysis Systems

Titrimetric: Titrets®

Storage Requirements

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

Shelf Life

When stored in the dark and at room temperature:

Titrets kit: at least 1 year

Accuracy Statement

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

Due to the non-linear nature of the test scale, the accuracy of this test varies with the location of the test result on the scale. At twice the minimum concentration for the kit range, the accuracy is ± 10% error.

Interference Information

- Ferrous iron interferes positively if present at any level.
- Reducing agents that reduce ferric iron to ferrous will cause false positive test results.
- Sample constituents that are oxidized by ceric sulfate, including hydrogen peroxide and nitrite, will interfere positively.
- Other oxygen scavengers may interfere positively.
- Chromate may interfere by masking the endpoint.
- Copper is not expected to interfere.

Interpretation of Results

At the endpoint of this titration, the color of the solution in the test ampoule changes from green to brownish-orange. If the Titret ampoule is filled with sample but the color of the solution remains green (i.e. does not change to brownish-orange), the DEHA concentration is below the test range. If the solution in the ampoule changes to brownish-orange immediately upon introduction of the first small dose of sample, the DEHA concentration is above the test range.

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 when a valve assembly is not attached may cause the glass ampoule to shatter. Wear safety glasses and protective gloves.