Iron High Range (Fe)

Method - Colorimetric

After adding the sample into the measurement cell, some reagents are added in order to adjust the solution to the desired conditions (pH, valence's elements, etc.). Then, a blank is done to correct any temperature or turbidity disturbance. Subsequently, a last reagent is added, and it reacts with solution developing a color, which is measured using a correct wavelength. Thanks to the photometer used, the result achieves a great accuracy.

Principle of measurement

Any ferric ion is reduced to the ferrous state by means of the hydroxylamine hydrochloride. The ferrous ions react with the 1:10-phenanthroline to form a pink complex when the buffer brings the solution within the range 5 to 7 pH.

Advantages of the method

The method enables iron to be measured at very rather higher levels without resulting in high absorbance values being obtained. The reagents are stable. If total iron has to be measured the stirring time may be increased to ensure that the iron has been completely dissolved by the acidic medium.

Specifications

Range: From 0 to 2.5 ppm / 5 ppm.
Adjustable higher concentrations with internal dilution.
Accuracy: ±2%
Repeatability: ±2%
Resolution: 0,001 ppm
Analysis time: around 15 minutes
Calibration: two point
LED Wavelength: 550 nm

Reagents consumption

- Reagent 1: 2.25 ml / analysis — 1.75L / month
- Reagent 2: 4.55 ml / analysis — 3.30L / month

Monthly consumption calculated assuming 1 analysis per hour.

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