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Iron Determination by Colorimetric Method Using O-Phenanthroline

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Abstract

Fe^{2+} reaction with 1, 10-Phenanthroline determined the quantity of soluble iron (II) in the sample to transform a weakly colored iron into an intensely colored complex which could be used in the analysis. The substance absorbed certain wavelengths when a light from the source with a certain intensity and frequency range was passed to this intensely colored complex. The intensity of a solution's color is proportional to the absorbing species concentration and the absorption is proportional to the substance concentration. A separate concentration of standards was prepared and absorbance in 511 nm, the largest wavelength, was determined using Colorimeter. Using the same standard technique and reagents, a blank and three unknown samples were also prepared. A calibration curve was built following Beer's Law. The iron concentration was verified using the equation of the calibration curve and the absorption under the same experimental conditions of three unknowns.

Author Keywords

Colorimeter, 1,10 phenanthroline, standard solutions, calibration, wavelength

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