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Determination of Stability Constant of 1:1 Complex Formed By Fe (III) With 5-Nitrosalicylic Acid By Graphical Methods Using Spectrophotometric Data

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ABSTRACT

The composition and stability constant of the complex formed by Fe (III) with 5-nitrosalicylic acid was studied in the acid range of the pH. In this acid range of pH (1-3) only 1:1 complex is formed. For the determination of stability constant, a number of graphical methods, reported in the literature, were used for the determination of value of stability constant. These five methods give different values of stability constant. On close examination of these methods it was revealed that in order to evolve the linear equations authors have omitted certain terms in the expression of stability constant that is why there is discrepancy in the results. Retaining all the terms, a method of successive approximations was used for the determining the stability constant of 1:1 complex formed by Fe ((III) with 5-nitrosalicylic acid at pH 2.4 and ionic strength 0.1 using the same data. This method gave the value of log K as 5.09.

Keywords: Ferric chloride, 5-Nitrosalicylic acid, Stability constant, Graphical methods.
