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DETERMINATION OF THE BINDING CONSTANT OF TRIS-(4,7- DIMETHYL-1,10-PHENANTHROLINE) IRON (II) PERCHLORATE WITH SODIUM DODECYL SULPHATE

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ABSTRACT

The binding constants were carried out using a unicam UV- Visible spectrophotometer at 25^{o}C and data were analysed by double reciprocal plots. Absorbances were taken at fixed concentration of the metal complex (1.80 x 10^{-5} mol dm^{-3}) and the concentration of sodium dodecyl sulphate (SDS) was far less than the critical micelle concentration. The binding study was also carried out in alkaline, acidic, benzoate ion and urea at fixed concentration range, 5.00 x 10^{-6} – 3.00 x 10^{-5} mol dm^{-3}. Binding between tris-4,7- dimethyl (1,10 – phenanthroline) perclorate and sodium dodecyl sulphate was accelerated at low $[H^+]$ until a maximum at $[H^+]$ = 1.00 x 10^{-4} mol dm^{-3} before it started to decrease at higher acid concentrations. However, the binding process was enhanced in the presence of hydroxyl ion, benzoate ion and urea.

KEYWORDS: Sodium Hydroxide (NaOH), Sodium Benzoate (C_6H_5COONa), Sulphuric Acid (H_2SO_4)