"DENSITY, VISCOSITY, REFRACTIVE INDEX AND DIFFUSION COEFFICIENTS OF AQUEOUS ADIPIC ACID SOLUTIONS AT 25° C"

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DECLARATION

This thesis is my original work and has not been prensented in any other university.

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ABSTRACT

Density, viscosity, refractive index and diffusion coefficient measurements have been undertaken in aqueous adipic acid solutions at 25°C. The study has produced equations to describe the concentration dependence of density, viscosity and refractive index in aqueous solution at 25°C. Partial molal volume, $\overline{V}$, has been found to be 115.929 $cm^3\ mol^{-1}$. Refractive index measurements have yielded the molar refraction of the acid $[R]_D$, which was found to be 30.147 using a sodium D light.

The differential diffusion coefficients at various concentrations have also been determined. At infinite dilution, the D value was found to be $3.5854 \times 10^{-5}\ cm^2\ sec^{-1}$. The limiting equivalent conductivity of the adipate ion was found to be 83.3806 ohm $cm^2 mol^{-1}$.