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Temperature dependence of the Mark-Houvink-Kuhn-Sakurada exponent for lysozyme in aqueous solutions Karol Monkos

The viscosity of lysozyme aqueous solutions was obtained as a function of temperature and of protein concentration. The measurements were conducted at temperatures ranging from 5 to 55° C and viscosity-temperature dependence was discussed on the basis of the Vogel-Tammann-Fulcher's equation. Viscosity-concentration dependence, in turn, was discussed on the basis of Mooney's formula. A master curve relating the specific viscosity *eta*_{sp} to the reduced concentration [*eta*]c, over the whole range of temperatures, was obtained. The existence of three ranges of concentrations: diluted, semi-diluted and concentrated, on the log-log plot of the *eta*_{sp} versus [*eta*]c, was shown. By applying Lefebvre's formula for the relative viscosity in the semi-dilute regime, the Mark-Houvink-Kuhn-Sakurada exponent – over the whole range of temperatures – was evaluated.