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The Influence of Strong Electrolytes upon the Rate of Inversion of Sucrose at 25°

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THE DIPOLE MOMENTS OF SOME SUBSTITUTED BENZALDEHYDES

J. N. Pearce and Luther Berhenke

The dielectric constants, indices of refraction and the densities of solutions of p-tolualdehyde, p-anisaldehyde and p-hydroxybenzaldehyde have been determined at 25°. The molar polarization and the dipole moments have been calculated; the values of the latter are 3.26×10^{-18}, 3.70×10^{-18} and 4.62×10^{-18} e.s.u., respectively.

THE INFLUENCE OF STRONG ELECTROLYTES UPON THE RATE OF INVERSION OF SUCROSE AT 25°

J. N. Pearce and Margaret Thomas

The rate of inversion of sucrose by hydrochloric acid in some typical salt solutions was studied at 25°. In every case the molalities of the sucrose and of the acid were fixed at 0.1 m and 1.0 m, respectively; the concentration of the salts ranging from 0.05 m to 1.0 m. For each salt the inversion coefficient varies rectilinearly with the molality. The order of decreasing influence upon the coefficient is $BaCl_2$, NaCl, KCl. The order is exactly reversed when considered with respect to ionic strength. The velocity is decreased by potassium sulfate, due to the formation of the HSO_4 ion. The results are discussed from the standpoint of dipole orientation and ionic charge.

A STUDY OF THE BOILING POINT ELEVATION IN SOLUTIONS OF POTASSIUM IODIDE IN ETHYL ALCOHOL

J. N. Pearce and M. L. McDowell

A study has been made of the elevation of the boiling point of ethyl alcohol by potassium iodide. A differential method has been employed and the temperature variations were measured by a sensitive thermoelement. The experimental boiling point elevation-