

1933

## The Dipole Moments of Some Substituted Benzaldehydes

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### Recommended Citation

Pearce, J. N. and Berhenke, Luther (1933) "The Dipole Moments of Some Substituted Benzaldehydes," *Proceedings of the Iowa Academy of Science*, 40(1), 93-93.

Available at: <https://scholarworks.uni.edu/pias/vol40/iss1/34>

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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  $3.26 \times 10^{-18}$ ,  $3.70 \times 10^{-18}$  and  $4.62 \times 10^{-18}$  e.s.u., respectively.

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## 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<sub>2</sub>, 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<sub>4</sub> ion. The results are discussed from the standpoint of dipole orientation and ionic charge.

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## 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-