

Proceedings of the Iowa Academy of Science

Volume 41 | Annual Issue

Article 39

1934

The Dipole Moments of Certain Organic Compounds

J. N. Pearce
State University of Iowa

L. F. Berhenke
State University of Iowa

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Recommended Citation

Pearce, J. N. and Berhenke, L. F. (1934) "The Dipole Moments of Certain Organic Compounds,"
Proceedings of the Iowa Academy of Science, 41(1), 141-142.
Available at: <https://scholarworks.uni.edu/pias/vol41/iss1/39>

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complexity of the adsorbed vapor molecules; further it is found to decrease with increase in the value of the van der Waals constant, b .

The heats of adsorption ΔH , calculated from the adsorption isosteres were found to be: acetone -10690 cal., methyl-ethyl ketone -11225 cal., diethyl ketone -11820 cal., ethyl formate -13140 cal., methyl acetate -11520 cal., ethyl acetate -11920 cal., n-propyl acetate -13200 cal., methyl propionate -14030 cal. As is generally found, the heats of adsorption for the ketones, thus calculated, are lower than those which have been determined experimentally.

DEPARTMENT OF CHEMISTRY,
STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

SOME OBSERVATIONS OF THE BOILING POINTS OF TERNARY LIQUID MIXTURES

JOHN DUNHAM AND W. C. OELKE

An exposition of an apparatus for the determination of the boiling points of liquid mixtures under constant pressure, and the results of preliminary investigations upon ternary mixtures of some common organic liquids.

GRINNELL COLLEGE,
GRINNELL, IOWA.

THE USE OF ELECTRON TUBES AS SUPER- SENSITIVE RELAYS

W. C. OELKE

A brief discussion of the use of electron tubes in relay circuits controlling physical apparatus. The construction and operation of several relay units were shown.

GRINNELL COLLEGE,
GRINNELL, IOWA.

THE DIPOLE MOMENTS OF CERTAIN ORGANIC COMPOUNDS

J. N. PEARCE AND L. F. BERHENKE

The dielectric constants and densities of dilute solutions of p-brombenzaldehyde, p-tolualdehyde, p-hydroxybenzaldehyde and

p-anisaldehyde in dioxane were measured at 25°. From the total polarization and the molecular refractivities the dipole moments were calculated to be 2.20, 3.27, 4.18 and 3.70×10^{-18} e.s.u., respectively. The angle between the aldehyde group moment direction and the line through the 1, 4 C atoms of the benzene nucleus is calculated to be 51°. The angles between the directions of the OH and CHO group moments, and between the CH_3O and CHO group moments are 50° and 49°, respectively. The angle between the plane passing through the 1, 4 C atoms and those in which the moment vectors lie are 45° and 37°, respectively, for p-hydroxybenzaldehyde and p-anisaldehyde.

DEPARTMENT OF CHEMISTRY,
STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.