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A Measurement of the Magnitude of the Electrokinetic Current in Liquid Flow through a Single Capillary

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DISSOCIATION PRESSURES OF SOME POTASSIUM POLYHALIDES

JACOB CORNOG AND ELDON BAUER

Potassium dichloro iodide ($\text{K}_2\text{I}_2\text{Cl}_2$ or $\text{KCl}\cdot\text{ICl}$, m. p. 195°) and potassium trichloro di-iodide ($\text{K}_2\text{I}_2\text{Cl}_3$, m. p. 45°) have been prepared and their dissociation pressures measured.

Both of these are new compounds. The potassium dichloro iodide (m. p. 60°) described by Wells and Wheeler (also by Ephraim) has been found to have the formula $\text{K}_2\text{I}_2\text{Cl}_2\cdot\text{H}_2\text{O}$.

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A MEASUREMENT OF THE MAGNITUDE OF THE ELECTROKINETIC CURRENT IN LIQUID FLOW THROUGH A SINGLE CAPILLARY.

W. G. EVERSOLE AND W. W. BOARDMAN

The potential difference, E , between the two ends of a capillary, through which a steady flow of liquid was maintained, was measured by means of unpolarizable electrodes connected to a potentiometer circuit, and at the same time shunted through a known resistance, R . The value of R was varied from 1 to 98000 megohms. For each value of R there was a corresponding value of E , and a current, I ($=E/R$), through the resistance. The electrokinetic current, I_e , was obtained by extrapolating the plot of E/R versus R to the limit $R=0$.

The value of the electrokinetic potential, ζ , can be calculated from I_e by means of the Helmholtz-Smoluchowski equation,

$$\zeta = \frac{4 \eta l}{r^2 DP} I_e,$$

without the use of conductivity data.

The specific surface conductivity can also be evaluated from the same data if the specific conductivity of the liquid in bulk is known.

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