

Ion Exchange equilibria in cationic polyelectrolytes

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A method which allows the evaluation of phenomenological ion exchange constants K_{ex} is proposed and tested in a cationic polyelectrolyte system. Results for nitrate/chloride exchange are nearly constant over the entire concentration range studied. However, for nitrate/bromide exchange, the results depend on the polyelectrolyte concentration, with K_{ex} following the same trend as the mean activity coefficient for the polyion bromide. For polyion fluoride, a conformational change is probably induced as nitrate is added to the solution and the result deviates from the linear relationship predicted by the method. Benzene sulfonate behaves like a hydrophilic anion, whereas tosylate and ethylbenzene sulfonate also induce conformational changes by hydrophobic interactions. These results are supported by viscosity measurements and agree well with those recently reported by Satoh, who considered changes in apparent molar volume. © 1994 John Wiley & Sons, Inc. Copyright © 1994 John Wiley & Sons,