

Mixture Viscosity Variation during High Performance Liquid Chromatograph Gradient Elution

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The variation of composition of eluants in High Performance Liquid Chromatograph (HPLC) has profound effects on adsorption properties of solutes onto the adsorbents and separation characteristics of solutes. The composition variation also significantly affects rheological behavior of the carrier fluid. As the layers of eluants of different composition flow through the packed bed of particles, rheological behavior depends also on the mixing and dispersion of different layers. This dispersion phenomena can show up both in pressure profile and light absorption profile. Temperature dependences of binary and tertiary system viscosity are studied. We discuss the relation between the pressure profile and HPLC column particles, absorption curves and the aggregation structure characteristics and also diagnosis of column.