

عنوان مقاله:

Water activity Determination Of Binary and Ternary Aqueous Polymer-Polymer Solutions

محل انتشار:

دومین کنفرانس بین المللی یافته های نوین پژوهشی در شیمی و مهندسی شیمی (سال: 1395)

تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:

Precise water activity measurements at $T = 308.15$ K were carried out on several binary (water + polymer) and ternary {water + polymer (1) + polymer (2)} systems using the vapor pressure osmometry (VPO) technique. Polymers were polyethylene glycol 400 (PEG400), polyethylene glycol 6000 (PEG6000), polypropylene glycol 400 (PPG400), polyvinylpyrrolidone (PVP) and dextran (DEX). The water activity results obtained were used to calculate the vapor pressure of solutions as a function of concentration. It was found that, for the polymer concentration range studied here, the values of the water activity obtained for the binary (water + polymer) solutions decrease in the order DEX > PVP > PEG6000 > PPG400 > PEG400. Furthermore, water activities of solutions of each polymer in the aqueous solutions of (5, 10, 15 and 20) % (w/w) other polymers investigated were also measured at 308.15 K. The ability of polymer (1) in decreasing the water activity of binary {water + polymer (2)} solutions was discussed on the basis of the polymer – water and polymer (1) - polymer (2) interactions.

کلمات کلیدی:

water activity; vapor pressure osmometry; polymer solution

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