

Abstract Submitted
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Influence of Nanoparticles on the Miscibility in Binary Polymer Blends A Simple Theory VALERIY GINZBURG, Dow Chemical Company — We propose a simple theory describing the influence of nanoparticles on thermodynamics of binary polymer mixture. In particular, we consider the case in which nanoparticles preferentially segregate into one of the polymeric components. Depending on the particle radius R_p and the polymer degree of polymerization N , addition of nanoparticles can either promote or hinder mixing of the polymers. We calculate how the addition of nanoparticles shifts the spinodal of the polymer blend. Results are compared with recent experimental data of Nesterov and Lipatov, and satisfactory qualitative agreement is found.

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