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Exploring the Effects of Deuteration on Polymer Blends MICHAEL TAMBASCO, JANE LIPSON, Dartmouth College, JULIA HIGGINS, Imperial College — Deuterium labeling is a requirement of neutron scattering experiments, but the extent to which the H-D switch affects the thermodynamic properties of the mixture under investigation has not been widely examined. In order to explore this, we apply a simple lattice theory to the analysis of a fairly complete set of experimental data on blends of polystyrene(PS)/polybutadiene(PB), in which all permutations of PS, dPS, PB, and dPB are of interest. Available data include cloud point curves, neutron scattering intensities, and pressure-volume-temperature surfaces. In this talk we discuss what we have learned regarding the consequences of deuterium substitution on the properties of this blend, and draw some broader conclusions.

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