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Assessing the Application of the Flory Interaction Parameter MICHAEL TAMBASCO, JANE LIPSON, Dartmouth College, JULIA HIGGINS, Imperial College — The Flory-Huggins interaction parameter is the most commonly implemented tool for describing binary interactions of polymer blends, yet to what extent does this widespread method of analysis yield valuable thermodynamic insight? Making use of an alternate simple theory, we follow a different, less ambiguous route, with the goal of achieving richer connections between the microscopic theoretical description and macroscopic thermodynamic behavior. To this end we analyze experimental data, including results from neutron scattering experiments, cloud point curves and solubility analysis, with the goal of understanding the effects of deuteration as well as the consequences of altering molecular weight, composition and pressure.

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