

Universal Behavior in Star Polystyrene + Methylcyclohexane Systems Near the Critical Point

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The turbidity and coexistence curve of eight-arm star polystyrene in methylcyclohexane is being measured and used to determine the correlation length and coexistence curve amplitudes. The turbidity in this system is determined from the measured ratio of the transmitted to incident light intensities as a function of temperature for this branched polystyrene, with a total molecular weight of 228,000. The coexistence curve is determined from refractive index measurements using an automated measurement of the minimum deviated angle in each phase. We have refractive index data for the same system in both the one- and two-phase regions, and can analyze the resulting coexistence curve using the recent crossover expression developed by Anisimov and Sengers. The values for the critical amplitudes from the two experiments will be related.

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