

Abstract Submitted
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What Drives Blend Miscibility?¹ RONALD WHITE, JANE LIPSON,
Dartmouth College — With no mixture data available, can one predict phase behavior in polymeric systems based on pure component information only? Due to the very weak entropic drive for large molecules to mix, predicting and understanding miscibility behavior is indeed very difficult. However, while not perfect, some *a priori* insight is attainable when pure component properties are analyzed within the framework of a theoretical model. A theory provides a platform, allowing one to define quantities and other measures that may not always be directly measurable, but, are physically appealing and insightful none-the-less. Are there properties that can explain for example, why a polymer like polyisobutylene (PIB) exhibits such different phase behavior compared to other polyolefins? Applying our simple lattice-based equation of state, we have recently analyzed a large number of different polymers. In this talk we will present insights from trends and patterns we have observed.

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Ronald White
Dartmouth College

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