

Abstract Submitted
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The Viscoelastic Bulk Modulus: Effect of Crosslink Density JIAXI

GUO, SINDEE SIMON, Department of Chemical Engineering, Texas Tech University — The pressure relaxation response is measured at various temperatures in the glass transition region for two polycyanurate networks of differing crosslink density using a pressurizable dilatometer. Master curves are formed by the time-temperature superposition theory using vertical shifts to account for the temperature dependence of the bulk moduli. The results show that the pressure relaxation response has a small dependence on the crosslink density of the polycyanurate. However, the horizontal and vertical shift factors show a similar dependence on temperature when plotted as the departure from T_g , i.e. as $T-T_g$. The horizontal shift factors also agree well with those from the shear viscoelastic response. The relaxation spectra obtained from the pressure relaxation measurements will also be compared to those from shear stress relaxation experiments, and the validity of Leaderman's hypothesis that the bulk and shear responses arise from different molecular mechanisms will be discussed.

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