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Dynamics of Poly(ethylene glycol) Based Gels Created in situ with Polyisocyanates[1] DANIEL KING, RALPH COLBY, Pennsylvania State University — Low-Tg amorphous polyesters condensed from poly(ethylene glycol) and isophthalate were prepared having alcohol end groups and purified. These diol polymers were then end-linked using polyisocyanates as the crosslinking agent because of their high reactivities with alcohol end groups and lack of a condensation byproduct. Gels with varying concentrations of crosslinkers were created to prepare samples above and near the gel point. The diol polymers and polyisocyanates were mixed and loaded into the rheometer at ambient temperature, and then cured at 60C to create gels. Linear viscoelastic measurements determined the modulus of these gels, which was correlated with the gel fraction determined by solvent extraction of the soluble portion.

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