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Miscible polyethylene glycol-citric acid gels JUSTIN BARONE, USDA/ARS/ANRI/EQL — Polyethylene glycol (PEG) and citric acid (CA) are crystalline solids at room temperature. They are opaque, hard, brittle materials. However, blending the PEG and CA shows that a clear, soft gel is formed at certain concentrations. Rheology, differential scanning calorimetry (DSC), FT-IR, and Raman spectroscopy are used to characterize the behavior of the blends as a function of concentration. The solubility parameters for PEG and CA are the same indicating that complete miscibility is possible. It is found that the PEG and citric acid strongly associate through hydrogen bonding and prevent re-crystallization of either phase.

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