

pH- and Thermoresponsive Properties of Poly(N-vinylcaprolactam) - Acrylic Acid Copolymers

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Abstract: pH- and thermoresponsive copolymers based on poly(N-vinylcaprolactam) with small amounts of acrylic acid were synthesized by free radical copolymerization. The copolymers have been characterized by GPC, IR spectroscopy and titration. Copolymers with different molecular weights were prepared by changing the solvent. The phase separation behaviour of these copolymers was studied in water and buffered solutions at different pH values and temperatures by means of FT-ATR-IR and cloud point measurements by the turbidimetric method. The copolymers showed a pH and molecular weight dependent phase separation behaviour in water.
