

Cyclopolymerization Studies of Diallyl- and Tetraallyl-piperizinium Sal

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ABSTRACT

The quaternary ammonium salt 1,1-diallyl-4-formylpiperazinium chloride (I) was synthesized in good yields. Cyclopolymerization of I in the presence of ammonium persulfate in water at 90° afforded water-soluble polymer having excellent rheological properties. The I polymer was converted into a unique dicationic polyelectrolyte and a cationic polymer with a basic nitrogen as well as a quaternary nitrogen. The effect of monomer, initiator, and additive concentration was studied. Cyclopolymerization of I with 1,1,4,4-tetraallylpiperazinium dichloride gave ion-exchange resins with excellent swelling coefficients.