European Polymer Journal 44 (2008) 1843–1848

Contents lists available at ScienceDirect

European Polymer Journal

journal homepage: www.elsevier.com/locate/europolj

# Solvent effects on the copolymerization kinetics of ionic (AMPS) and non-ionic (HEAm) acrylamide derivatives

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ARTICLE INFO

*Article history:*
Received 20 December 2007
Received in revised form 4 March 2008
Accepted 7 March 2008
Available online 25 March 2008

*Keywords:*
Copolymerization
2-Acrylamido-2-methyl-1-propanesulfonic acid
2-Hydroxyethylacrylamide
Reactivity ratio

ABSTRACT

The free-radical copolymerization of two *N*-substituted acrylamide monomers, the ionic AMPS (2-acrylamido-2-methyl-1-propanesulfonic acid) and the non-ionic HEAm (2-hydroxyethylacrylamide) is presented. Despite bearing similar polymerizable functionalities, HEAm is more reactive toward free-radical addition than AMPS in water. In a mixed aqueous solvent containing salt, (0.5 M $LiNO_3$, 50 wt%) and ethanol (50 wt%), the reactivity ratio was found to be $r_{AMPS} = 0.53$ and $r_{HEAm} = 1.06$ indicating that copolymers with a nearly random distribution of sulfonic and hydroxy functionalities can be prepared.