

论文

氧化还原低温引发MMA/BA超浓乳液薄层共聚合的研究

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收稿日期 2004-9-11 修回日期 2004-12-20 网络版发布日期 接受日期

摘要 以甲基丙烯酸甲酯-丙烯酸丁酯(MMA-BA)作为混合单体、以乳化剂十二烷基硫酸钠(SDS)和共乳化剂十六烷醇(CA)作为复合乳化剂体系、聚乙烯醇(PVA)为液膜增强剂,制备了稳定的超浓乳液.以过氧化二苯甲酰(BPO)和N,N'-二甲基苯胺(DMA)为氧化还原引发体系,用一种新的超浓乳液薄层技术,在较低温度下引发共聚合.探讨了液膜增强剂种类和聚合环境对聚合稳定性影响;研究了薄层厚度,薄层面积,聚合温度和加热方式对体系(包括单体和水)挥发性和转化率的影响.比较了薄层和试管聚合的速率.用透射电子显微镜观察了水浴与烘箱加热方式下聚合物乳胶粒的形态,得到了在水浴中反应后的聚合物粒子平均粒径和分散度都减小的结果.

关键词 [超浓乳液薄层聚合](#) [氧化还原引发剂](#) [甲基丙烯酸甲酯-丙烯酸丁酯](#) [单体挥发性](#) [单体转化率](#)

分类号

STUDIES ON THIN LAYER COPOLYMERIZATION OF THE CONCENTRATED EMULSION OF MMA-BA INITIATED BY THE REDOX SYSTEM AT LOW TEMPERATURE

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Abstract The stable concentrated emulsions of methyl methacrylate-butyl acrylate(MMA-BA)are prepared using sodium dodecyl sulfate(SDS)and cetly alcohol(CA)as the compound surfactants,polyvinyl alcohol(PVA)as the reinforcer of liquid films. A novel method of polymerization,the thin layer copolymerization of the concentrated emulsion,was carried out with benzoyl peroxide / N,N'-dimethyl aniline(BPO / DMA)as redox initiators at low temperature. Effects of categories of the reinforcer of liquid films and the polymerization environment on polymerization stability were introduced. The effect of the thickness and area of films,the outside temperature,and environment of polymerization on the amount of volatilization were investigated. The conversion comparison of the thin layer polymerization with the tube polymerization and the effect of polymerization environment on the polymerization rate were discussed also. The size and distribution of particle diameter and morphology of latex particles were determined with TEM.

Key words [Concentrated emulsion](#) [Thin layer copolymerization](#) [Redox initiator system](#) [Polymerization stability](#) [Polymerization kinetics](#)

DOI:

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