

Comparison of polystyrene between emulsion polymerization and dispersion polymerization using linear type macromonomer as a reactive stabilizer

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Bifunctional linear-type vinyl urethane macromonomer(L-VUM) was synthesized and applied to the dispersion polymerization and emulsion polymerization of styrene in ethanol. The structure of L-VUM macromonomer was confirmed by ^1H NMR and FT-IR. Macromonomer was used to molecular weight of 40000 as a reactive stabilizer in emulsion polymerization and dispersion polymerization. The particle size of dispersion polymerization is $2.6\mu\text{m}$ and the particle size of emulsion polymerization is 200nm. Particles are successfully polymerized by two types of polymerization method.