

GRADIENT AND BLOCK COPOLYMERS FROM METHYLMETHACRYLATE AND VINYLACETATE

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Block copolymers are usually prepared by using a macroinitiator bearing an active center or a chemical group at one or two ends. Polystyryl di-anion and nitroxide terminated polystyrene are examples of prepolymers able to generate block copolymers via activation of their terminal entities. The direct formation of “pure” block copolymers from monomers is impracticable because of the reactivity ratios of monomers is never so different to allow them to react successively. At best, gradient copolymers can be prepared for some monomer pairs using a polymerization process where termination does not make part of the mechanism of chains formation, i.e. *living*.

Free radical polymerization encounter major problem as termination produce dead chains which lost the possibility of further growing. There is however, a very specific case of quasiliving polymerization induced by free radicals where gradient copolymers can be prepared from monomers. We found that the copolymerization of methylmethacrylate and vinyl acetate triggered out with tetraphenylethane derivatives yields polymers comparable to block copolymers produced from a polymethylmethacrylate-initiator and vinyl acetate. We will describe the preparation of those materials and provide with results that assert their structure.