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Second Symposium on Cyclopolymerization of Diallylamines: Preface

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Second Symposium on Cyclopolymerization of Diallylamines: Preface

Just over a year ago we held a symposium on cyclopolymerization of diallylamines (J. Macromol. Sci.-Chem. A9(1), 95, 1975). In the Preface to that symposium I foreshadowed this second meeting at which the practical application of polymers derived from diallylamines would be discussed. As things have developed, studies on commercially useful polymers form only part of this symposium, because during the past year our theoretical studies related to the mechanism of cyclopolymerization have also progressed and these aspects will be included in this Symposium. In particular, the use of NMR as a physical method of assigning the structure of polymer units and of the compounds formed under short-stop or chain-transfer conditions has progressed significantly during the last year. As will be seen from the following discussion, this has enabled us to further our understanding of the factors which influence the cyclization to five-membered, and in some cases six-membered structures. These theoretical studies provide the basis for a better understanding of a relative importance of the kinetic and thermodynamic factors in the cyclization step of these polymerizations. Studies of this type provide a framework within which some of the other unusual or unexpected chain polymerizations can be discussed and they are relevant to our general understanding of free-radical reactions, where in a number of instances structures are dictated more by kinetic considerations than was previously realised or accepted.

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