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Mechanisms and kinetics of non-isothermal polymerization of N,N′-bismaleimide-4,4′-diphenylmethane with 2-thiobarbituric acid

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Highlights

- Non-isothermal polymerization kinetics for BMI/TBTA system studied.
- Kinetic parameters determined via both model-free and model-fitting methods.
- Polymerization adequately described by reaction first-order model.
- Competition among free radical and (aza) Michael addition reactions characterized.

Abstract

Mechanisms and kinetics of non-isothermal polymerization of N,N′-bismaleimide-4,4′-diphenylmethane (BMI) with 2-thiobarbituric acid (TBTA) were investigated. Competition among free radicals polymerization, Michael addition reaction and aza-Michael