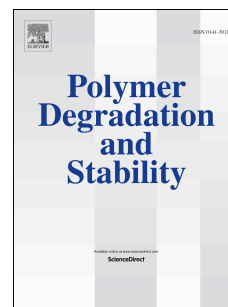


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Controlled degradation of polyisoprene and polybutadiene: a comparative study of two methods

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Keywords:

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Abstract:

Low molar mass carbonyl telechelic *cis*,1-4 polyisoprene (CTPI) and aldehyde telechelic *cis*,1-4 polybutadiene (ATPB) were easily prepared by the controlled degradation of high molar mass 1,4-*cis* polyisoprene (PI) and 1,4-*cis* polybutadiene (PB) in a molar mass range of 5 000 – 80 000 g.mol⁻¹. Two methods are compared: the direct one using only the periodic acid (H₅IO₆) to randomly cleave the chain and a second one where the chain are first epoxidized before being cleaved by the periodic acid. In both cases, a control of the final chain length was observed with nevertheless a better control of the final chain length, dispersity and chain-ends using the 2-steps procedure. Importance of the washing step in order to avoid side reactions on the carbonyl chain-ends is also discussed.

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