

Distinguishing strain hardening behavior of polymer melts with Fourier-transform Rheology

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It is well known that strain hardening, believed to be enhanced by LCB (long chain branching) in conventional polymers or alternatively, by the presence of a very high molecular weight fraction in linear polymers such as HDPE, is a determining factor in process such as film-blowing, melt-spinning, blow-molding, foaming and thermoforming, where extensional deformations are dominant. Thus, the elongational experiments usually are used to check the possibility of strain hardening of polymer melts. In this study, instead of elongational experiments, using the FT rheology method, we discriminated the strain hardening with no strain hardening of polymer melts.