

Extensional rheometry of polyethylenes

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Extensional rheometry is a matter of consequence for extensional deformation process such as fiber spinning, film casting and film blowing processes. However it is difficult to measure extensional viscosity because of its nature of free surface. The RME, a commercial Meissner type extensional rheometer, give solutions for some problems of experiments. By the RME, the extensional viscosities have been measured for polyethylenes. Almost polyethylene show shear thinning behavior in the shear rheometry. In the extensional rheometry, however, low density polyethylene (LDPE) shows extension thickening behavior, on the other hand, high density polyethylene shows extension thinning behavior. These different properties with extensional flow will be great apply to the various extensional deformation processes.

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