Eur. Phys. J. B **13**, 201 (2000)

THE EUROPEAN
PHYSICAL JOURNAL B
EDP Sciences

Erratum

Apparent slip at polymer-interface

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Eur. Phys. J. B **2**, 79–92 (1998)

Section 5

One of the goals of this paper was to derive an approximate stress constitutive equation for application to inhomogeneous polymer melts. While convenient, our approach was to force an $N-$mode model into a dynamical equation (Eq. (5.3)) for a stress field with a single relaxation time, which is an inexact description of melt dynamics, even for the homogeneous case.
We note a misprint in equation (5.3), where the term $6\Sigma_{ij}/(\zeta R_{\rm g}^2)$ should appear with a negative sign.
Perhaps more importantly, the stress relaxation term $-6\Sigma_{ij}/(\zeta R_{\rm g}^2)$ was chosen to reproduce the bulk Rouse viscosity, but this term incorrectly describes the normal stress relaxation. It should be replaced by

$$-\left\{\frac{6}{\zeta R_{\rm g}^2}(1-\theta_{ij})+\frac{45b^2}{36^2\zeta R_{\rm g}^4}\theta_{ij}\right\}\Sigma_{ij} \tag{1}$$

where θ_{ij} is a scalar function such that

$$\begin{aligned}\theta_{ij} = 0,\ & i \neq j\\ 1,\ & i = j.\end{aligned}$$

While this change is immaterial for the purposes of the present paper, it can be significant for other applications in which first normal stresses come into play.

Appendix B

The mixing free energy given by equation (B.8) is missing terms that describe the entropy of mixing between A and B polymers. Such terms must be added carefully to be consistent with diagonal terms appearing in the stress constitutive equation, and to generate appropriate diffusion terms in equation (B.11). Details may be found in a subsequent paper (J.L. Goveas, G.H. Fredrickson, J. Rheol. **43** 1261 (1999)).

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