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Model for the shear viscosity of suspensions of star polymers and other soft particles CARLOS MENDOZA, Materials Research Institute, UNAM — We propose a model to describe the concentration dependence of the viscosity of soft particles. We incorporate in a very simple way the softness of the particles into expressions originally developed for rigid spheres. This is done by introducing a concentration-dependent critical packing, which is the packing at which the suspension looses fluidity. The resultant expression reproduces with high accuracy the experimental results for suspensions of star polymers in good solvents. The model allows to explain a weak increase of the viscosity observed in the case of diblock copolymer stars suggesting that the reason for this peculiar behavior is mainly a consequence of the softness of the particles. In the semi-dilute regime, suspensions of star polymers are modeled using the Daoud-Cotton picture to complete the description in the whole concentration regime.

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