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Interpretation of small angle neutron scattering measurements for LDOT-type styrenic block copolymers[1] JUNHAN CHO, INHO LEE, GANGYOUNG LEE, Dankook University, DONGHYUN LEE, Pohang University of Science and Technology, DOYEOL RYU, Yonsei University, JINKON KIM, Pohang University of Science and Technology — We investigate the scattering behavior of some LDOT-type styrenic block copolymers measured by small angle neutron scattering (SANS). The absolute scattering intensities and the resultant correlation lengths for the disordered samples are obtained as a function of temperature and pressure. The experimental scattering behavior is then analyzed by using random-phase approximation (RPA) analysis in connection with a molecular model for perturbed hard chains. With a proper choice of requisite molecular parameters, the scattering properties for the copolymers are predicted to be compared with those measured by SANS. Effective Flory-type interaction is obtained and discussed with regard to its role in the scattering behavior for the copolymers.

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