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Correlation in SANS χ upon heating and pressurization for a diblock copolymer¹ JUNHAN CHO, JUMI LEE, Dankook University, DU YEOL RYU, Yonsei University — The response of phase behavior to pressure for an A-*b*-B diblock copolymer in the disordered state has been studied by small-angle neutron scattering (SANS). Deuterated polystyrene-*b*-poly(*n*-propyl methacrylate) (dPS-*b*-PPrMA) copolymer, which possesses ordering transition upon heating and baroplasticity (suppressed demixing by pressurization), was taken as our model system. It was shown that effective Flory-Huggins parameter χ_F from scattering intensity profiles upon heating and pressurization forms a characteristic curve that is a function of pressure increment ΔP ($\equiv P - P_0$) divided by temperature dependent bulk modulus B_0 at a reference pressure P_0 . Each isotherm of χ_F is superposed into the curve by a scale factor τ determined by B_0 . The scattering intensity maxima I_{max} , which is governed by χ_F , were also shown to reveal a similar superposition.

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