

Abstract Submitted
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Structure And Dynamics Of Semi-crystalline Polyethylene Oxide / Polyvinyl Acetate Blends¹ JAMES RUNT, DANIEL FRAGIADAKIS, Penn State University — The structure and dynamics of semi-crystalline, melt-miscible polyethylene oxide / polyvinyl acetate (PEO/PVAc) blends were investigated using small-angle X-ray scattering and dielectric relaxation spectroscopy. PEO/PVAc blends with selected compositions were crystallized at various temperatures. Small-angle X-ray scattering was used to quantitatively determine the semi-crystalline microstructure, including the location(s) of the non-crystallizable PVAc in the structure. Segmental and local dynamics were studied using broadband dielectric relaxation spectroscopy. We attempt to clarify the origin of an additional relaxation, located at intermediate frequencies between the segmental and local processes, which has been proposed to be related to initial stages of crystallization even in blends lacking macroscopic crystallinity.

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