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Coincident Crystallization of PEO-*b*-PCL Copolymers with Similar Block Molecular Weights RYAN VAN HORN, NATASHA BRIGHAM, CHRISTOPHER NARDI, Allegheny College — Poly(ethylene oxide)-*block*-poly(epsilon-caprolactone) (PEO-*b*-PCL) copolymers have garnered much attention for their use in the biomedical field due to their biocompatibility and the degradation of PCL. The applications of this polymer are heavily dependent on the polymer's physical properties, including crystalline content. One complicating factor is the relatively similar transition temperatures for PEO and PCL. We have studied the coincident crystallization behavior of 5k-5k and 10k-10k g/mol samples using FTIR. Both samples were isothermally crystallized at varying temperatures to track the development of crystallinity over time. Experiments showed that the crystallization of both blocks occurred nearly simultaneously over all temperatures. Each block's crystallization behavior was affected by the other block's crystallization.

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