

Abstract Submitted  
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**Influence of Soft Segment Composition on Phase Separated  
Microstructure of PDMS-Based Multiblock Polyurethane Copolymers.**

TAEYI CHOI, Penn State University, JADWIGA WEKSLER, AJAY PADSALGIKAR, AorTech Biomaterials, JAMES RUNT, Penn State University — Multiblock polyurethane (PU) copolymers with polydimethylsiloxane (PDMS) based soft segments possess intriguing microphase separation behavior and excellent biocompatibility. In this study we investigate the microphase-separated structure of PDMS-PU with various well-defined soft segment compositions, which is closely connected to the structural and surface properties of these copolymers. The PDMS-PU are shown to exhibit a three phase, core-shell like morphology. Intra- and intercomponent hydrogen bonding was explored using FTIR spectroscopy and quantitative analysis of hard/soft segment mixing was determined by small-angle X-ray scattering. The presentation will focus on the latest findings, particularly the role of PDMS in controlling the details of the microphase-separated texture.

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