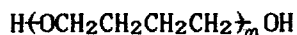


Structure and properties of polyether polyurethaneurea  
 elastomers having the aromatic diamine chain extenders(1)  
 -phase behavior and domain morphology

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Three series of polyether polyurethaneurea(PEUU) elastomers based on polytetramethylene ether glycol(PTMG), 4,4'-diphenylmethane diisocyanate(MDI) and 3 kinds of diamine chain extenders were synthesized. The effect of the hard segment structure, hard segment content and block length on the extent of phase separation and domain morphology was studied by utilizing DSC, dynamic mechanical, stress hysteresis, X-ray, and IR measurements. The degree of phase separation was higher in the samples with PTMG-2000 than PTMG-1000 samples. 3-dimensional hydrogen bonding between hard segment leaded to strong hard domain cohesion and semicrystalline structure. The samples with lower hard segment content and shorter block length at the same hard segment content exhibited more isolated hard domain morphology.

Soft segment: PTMG ( M.W. = 1,000, 2,000 )



Hard segment: MDI/Aromatic diamine

