Abstract

The present invention relates to systems and methods for solid freeform fabrication, especially fused deposition modeling, as well as various articles made using the same, where the systems and methods utilize certain thermoplastic polyurethanes which are particularly suited for such processing. The useful thermoplastic polyurethanes are derived from (a) a polyisocyanate component, (b) a polyol component, and (c) an optional chain extender component where the resulting thermoplastic polyurethane has a crystallization temperature above 80°C and retains more than 20% of its shear storage modulus at 100°C relative to its shear storage modulus at 20°C.