The aim of this research work is to establish a hot embossing process for addition curing vinyl-terminated polydimethylsiloxane (PDMS), which are thermosetting elastomers, based on the existing and widely applied technology for thermoplasts. To our knowledge, no known technologies or processes are commercially available for embossing microstructures and submicron structures on elastomers like silicones in large scale production of films. The predominantly used technologies to make microscale components for microfluidic devices and microstructures on PDMS elastomer is (a) reaction injection molding, (b) ultraviolet lithography, and (c) photolithography. We focus on hot embossing as it is one of the simplest, most cost-effective, and time-saving methods for replicating structures for thermoplasts. Addition curing silicones are shown to possess the ability to capture and retain an imprint made on it, 10–15 min after the gel point at room temperature. This property is exploited in the hot embossing technology.