

[-PPO-PDMS-PHS-]_n三元多嵌段共聚物的形态结构和性能

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摘要 利用DMA, TEM和SAXS对以聚苯醚(PPO)为硬段、聚对羟基苯乙烯(PHS)为半硬段和聚二甲基硅氧烷(PDMS)为软段的三元多嵌段共聚物[-PPO-PDMS-PHS-]_n以三种嵌段相容相为连续相, PPO与PHS的相容相和PDMS相为两种分散相, 其tan δ随温度变化曲线在-100℃至200℃一直是一很高的平台, 并具有优异的力学性能, 较好地解决了含有机硅类嵌段共聚物强度低的弱点, 同时又保留了嵌段共聚物微相分离的特性。

关键词 [透射电子显微术](#) [嵌段共聚物](#) [相容性](#) [聚苯醚](#) [力学性能](#) [聚对羟基苯乙烯](#)

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Morphology and properties of [-PPO-PDMS-PHS-]_n segmented ternary copolymers

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Abstract The morphology and properties of [-PPO-PDMS-PHS-]_n segmented ternary copolymers were investigated by DMA, TEM and SAXS techniques. It is shown that the continuous phase of [-PPO-PDMS-PHS-]_n is the compatible phase composed of PDMS, PPO and PHS segments, and that there exist two dispersed phases, i. e. the PDMS phase and a mixed phase of half hard (PHS) and hard (PPO) segments. The tan δ vs. T curve of the segmented ternary copolymer with 66.7% (W/W) PDMS shows a rather high plateau in the temperature range from -120℃ to 200℃, which indicates that the copolymer has the characteristics of microphase separation as well as compatibility of block copolymers, respectively. Meanwhile, it has good tensile properties, which means that [-PPO-PDMS-PHS-]_n has overcome the weakness of low strength of block or segmented copolymers containing PDMS.

Key words [TRANSMISSION ELECTRON MICROSCOPY](#) [BLOCK COPOLYMER](#) [COMPATIBILITY](#) [POLYPHENYLENE OXIDE](#) [MECHANICAL PROPETIES](#)

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