

RHEOLOGICAL CHARACTERIZATION OF PA6/SBS BLENDS COMPATIBILIZED BY POSS

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Polyhedral oligomeric silsesquioxanes (POSS) are a new class of nanoparticles that can be polymerized or grafted using standard techniques to yield inorganic-organic hybrid homopolymers and copolymers. POSS cage is comparable to the dimensions of the linear polymer. In this study the POSS particles were grafted with amine groups that can be used as a compatibilizer for the polyamide and SBS blends. The blends were processed in a twin screw-extruder at 260°C, Polyamide and SBS were added together, in the second stage the compatibilizer was added in the extruder to promote the adhesion phases. The blends were characterized in a rheometer parallel plate at 260°C, frequency sweep and strain sweep were done to investigate the blend rheological behavior. It was noted that the addition of compatibilizer increased the elastic and viscous modulus which the author related with the crosslink occurred in the carboxyl group in the polyamide with the amine group in the compatibilizer. The crossover point was changed to high frequency as the amount of compatibilizer increased. The blend morphology changed with the compatibilizer; it was observed the reduction in the dispersed phase, this behavior was attributed to the compatibilizer effect.