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THERMAL AGING PROPERTIES AND CHEMICAL RESISTANCE OF BLENDS OF NATURAL RUBBER AND EPOXIDIZED LOW MOLECULAR WEIGHT NATURAL RUBBER

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Abstract

Studies into solvent resistance and aging properties of blends of natural rubber and epoxidized low molecular weight natural rubber were carried out. Vulcanization of the blends using the semi-efficient vulcanization (semi-EV) system was found to have curing advantages over conventional vulcanization (CV) and efficient vulcanization (EV) systems. The rheological properties (cure time, t_{90}, and scorch time, t_2), solvent resistances, and aging properties of the vulcanizates were found to improve as the level of epoxidized low molecular weight natural rubber in the blends increases. The mechanical properties of the blends were also found to be within the accepted level for NR vulcanizates. © 2005 Wiley Periodicals, Inc. J Appl Polym Sci 98: 1733–1739, 2005.

Keywords

blends; mechanical properties; rheology; vulcanization