



Reinforcement of Natural Rubber Latex Films with Surface Modified Silica

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Abstract

The surface of silica particles was modified by treating with a polymer containing both hydrophilic and hydrophobic monomer units. Surface modification involved esterification of the surface hydroxyl groups with the carboxyl groups of the hydrophilic units of the polymer. Conversion of surface -OH groups to surface ester groups was confirmed by Fourier Transform Infrared Spectroscopy (FTIR). Tensile properties of natural rubber latex films containing modified silica fillers were compared with those of films containing unmodified filler and the outstanding reinforcing ability of surface modified filler was clearly evident.