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# Evaluation of the Effect of Mixing Time in the Microstructure and Conductivity of BR/EPDM/CB Blends by Dynamical Analysis

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## Abstract

Mixing time is a critical parameter in the processing of conductive carbon black (CB) filled elastomers. It has a direct influence over the principal factor related to the conductivity in these systems: the state of filler dispersion. Dynamical mechanical analysis (DMA) gives an insight about the modification of the microstructure along the mixing time by following changes in the value of $(G'_o - G'_\infty)$, where $G'_o$ and $G'_\infty$ are the storage modulus at zero and infinite amplitude of deformation, respectively. The dependence of the storage modulus as a function of the amplitude (Payne effect) at long mixing time suggests the formation of *networking*, which is not altered beyond 7 minutes. The value $(G'_o - G'_\infty)$ was graphed vs conductivity in order to find a balance point between conductivity and mechanical loss or hysteresis.