

Название публикации:

Influence of the Solvent on the Formation of CNR/BNR Polymer Blends

Авторы:

Karпова, SG [1] ; Milyushkina, EG [2] ; Lusova, LR [2] ; Naumova, YA [2] ; Popov, AA [3]

[1] Russian Acad Sci, Emanuel Inst Biochem Phys, Moscow 119991, Russia

[2] Moscow Technol Univ, Inst Fine Chem Technol, Moscow 119571, Russia

[3] Plekhanov Russian Econ Univ, Moscow 117997, Russia

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Аннотация:

Structural dynamic analysis combining IR spectroscopy, DSC, and EPR spectroscopy is applied to studying films based on chlorinated natural rubber (CNR), butadiene nitrile rubber (BNR), and blends thereof. The influence of various solvents, such as methyl ethyl ketone (MEK), ethyl acetate (EA), methyl acetate (MA), and acetone (A), on the structure and molecular dynamics (τ) of CNR/BNR polymer films is examined. The strongest changes in the molecular mobility (τ) and the glass transition temperature (T_{gt}) relative to those of the starting materials are observed for the 50: 50% CNR/BNR blends prepared using all the solvents (except for acetone, the maximum values of τ for which is observed at a ratio of CNR: BNR = 80: 20%), which can be explained by the inversion of phases in the blends. Annealing at 140A degrees C causes an increase in the correlation time of the probe, and, consequently, a decrease in the molecular mobility, which is due to the intermolecular crosslinking of the components.

Ключевые слова:

solvent; glass transition temperature; molecular mobility; blend composition; structure