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Characterizationof Reclaim rubber and Reclaim rubber/Natural rubber blend

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Abstract: The applicability of reclaim rubber (RR) and a blend of reclaimrubber and natural rubber composite (RR/NR) has been tested using various characterization techniques. Using FTIR, complete vibrational band analysis of RR and blend of RR/NR composite are made available which confirms their chemical structure and the functional moieties present in them. The present work analyses the dielectric constant of rubber materials by using the method proposed by Robert and Von-Hippel. Dielectric constant values have also been evaluated to substantiate the insulating nature of RR and RR/NR blend over a range of frequency and temperature using impedance analyzer. The polarizability value was calculated from penn analysis and Claussius-Mossotti relation. The thermal stability of RR and RR/NR blend was compared from Thermogravimetric (TG) curves and the activation energy, frequency factor and other activation kinetic parameters were calculated using Coats-Redfern method. The major thermal transitions were detected from Differential thermal (DT) curves.
Keywords:FTIR;Reclaim rubber;RR/NR blend;dielectric constant;activation energy.

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