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Preparation and Investigation of Physical, Mechanical and Heat Shrinkability Behavior of Radiation Crosslinked TPU/EVA Blends

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In the present study, thermoplastic polyurethane elastomer (TPU) and Ethylene vinyl acetate (EVA) were blended in different ratios in a Brabender Internal Mixer. The blends were irradiated with High Energy Electron beam irradiation. Gel content of specimens was evaluated via solvent extraction. Cross link density and molecular weight between crosslinks (M_c) of samples were measured by Hot set tests. Dynamic mechanical properties of the blends were investigated and effects of crosslink density on the mechanical properties of samples were studied, as well. Structure-shrinkability behavior of the blends was investigated by thermo mechanical analysis (TMA).