

**303 - Radiation-grafting of thermo- and pH-sensitive poly(N-vinylcaprolactam-co-acrylic acid) on silicone rubber and polypropylene films**

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This work focuses on the effect of gamma-ray radiation conditions on the stimuli-responsiveness of polypropylene (PP) films and silicone (SR) rubber substrates grafted with N-vinylcaprolactam (NVCL) and acrylic acid (AAc). PP films and SR rubber were weighed and placed into glass ampoules and exposed to Co-60 gamma-source (Gammabeam 651 PT, MDS Nordion) in the presence of air at room temperature, at dose rate around 12 kGy/h and dose between 5 and 70 kGy. Solutions of NVCL and AAc (1/1, v/v), 50 % monomer concentration (v/v) in toluene were added to samples, the ampoules were degassed by repeated freeze-thaw cycles (5 times per 20 min) and sealed. The ampoules were heated at 60 and 70 °C at reaction time per 12 h. To extract the residual monomer and homopolymer formed during the grafting, the samples were soaked in ethanol for 24 h and then in distilled water, followed by drying under vacuum to constant weight. Samples were characterized by FTIR-ATR, DSC, swelling, LCST, and pH critical point.

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