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Development of new aliphatic biocompatible polymers from PEG 400 for their applications

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This paper describes about novel aliphatic biocompatible polymers prepared from polyethyleneglycol (PEG 400) moieties by melt condensation of 1,12-decanediol, 1,10-decanediol, 1,8-octanediol and dodecanedioic acid. The structural elucidation and its properties of the polymers obtained were thoroughly investigated by various techniques such as differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), and nuclear magnetic resonance (NMR). The polycondensation reaction was carried by the presence of titanium(IV) isopropoxide as catalyst. Also these polymers were characterized by IR spectroscopy. The inherent viscosities and the solubilities of the synthesized copolymers were analysed with their corresponding results.

Keywords: Polycondensation, PEG 400, solubility, viscosity.