International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.11 No.09, pp 69-76, 2018

A Study on Xylitol Based Copolyester for In vitro Degradation Applications

Deepa K and Jaisankar V*

PG and Research Department of Chemistry, Presidency College, Chennai –600005, Tamil Nadu, India.

Abstract : In this paper, we report on the synthesis and characterization of copolyesters from xylitol, lactic acid and sebacic acid through a catalyst free melt polycondensation method. The synthesized aliphatic random copolyesters were characterized by means of fourier transform infrared (FTIR), viscosity measurements, ^{1}H and ^{13}C nuclear magnetic resonance, differential scanning calorimetry (DSC) and gel permeation chromatography (GPC) studies. The effect of copolymer composition on the physical and thermal properties as well as degradation test was investigated. The mechanical properties evaluated for the polyester films in the tensile mode shows that the polymer has characteristics of elastomers and stiff thermosets. The degradation test was carried out in alkali medium. The phase behaviour of the polymers was studied by differential scanning calorimetry. As all the monomers used in these materials are component of other biomaterials, the synthesised xylitol based triblock copolyesters could be excellent candidates as future biomaterials.

Keywords : Catalyst free melt polycondensation, spectral and degradation studies.

Jaisankar V *et al* /International Journal of ChemTech Research**,** 2018,11(09): 69-76.

DOI= http://dx.doi.org/10.20902/IJCTR.2018.110910

*****