

Thermal effect on the microhardness of chitosan films

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In this communication we present the results obtained from a study on the effect of thermal treatments of chitosan films with different molecular weights, but with a similar acetylation degree, carried out by microhardness. It was found that the hardness of films prepared from both type of chitosan is similar, of approximately 190 mPa. This suggest that this property is almost independent from the molecular weight in a wide range. The hardness increases notably with a moderate heating (60° C) reaching a constant value of about 450 Mpa after 60 minutes at this temperature. This is attributed to the loss of water and the . formation of new intermacromolecular bonds leading to a more compact network. The increase of hardness is accompanied by an increase in the fragility of the films.