Abstract

The thermal expansion behavior of die drawn polypropylene rods has been measured over the temperature range -50 °C to +100 °C. For high drawn samples the values for the thermal expansion coefficient in the axial direction $\alpha_{||}$ are negative and increase in magnitude with increasing temperature. It is shown that this result is consistent with the presence of an internal shrinkage stress. For low draw samples and most high draw samples after annealing, the value of $\alpha_{||}$ is positive and increases in magnitude with increasing temperature. It is shown that this result can also be explained in terms of an internal shrinkage stress, on the basis of a simple relationship between the axial and radial expansion coefficients.