

A STUDY OF EFFECT OF COPPER(II)-COMPLEX(CU-BHBH) ON THE PHOTODEGRADATION OF POLYSTYRENE FILMS

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ABSTRACT

This study included photodegradation of polystyrene films after exposing them to light using Schiff's base of Copper-complex. The films were made by mixing with the polymer solution at different weight percentages in the range (0.025%-0.4%) with thickness of ($70 \pm 5 \mu\text{m}$). The specimens were irradiated for different times at wavelength (365nm) at 40°C . The photodegradation of the prepared films with and without additives were followed by FT-IR technique for evaluating both ICO and IOH. Ultraviolet-visible (UV-Vis) was used to calculate the rate of degradation. The results indicated that the synthesized complex has induced the degradation which increases as the concentration of the additives increase which coincides with the resulted Kd increments which followed in presence and without of 0.05% of the added Copper-complex by measuring both the number average molecular weight and the degree of decomposition, besides the chain mean scission (S) and the degradation degree (α). it was found that in the presence of the metal complex led to decrement in the molecular weight (M.W) and chain scission which fit with other researchers.

KEYWORDS: Schiff's Base, Polystyrene, Photodegradation, Copper (II)-Complex