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Thermal Degradation Studies Of Copolymer Resin Derived From 8-Hydroxyquinoline, Hexamethylene Diamine With Formaldehyde.

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ABSTRACT

The copolymer (8-HQHMDAF) was synthesized by condensation of 8-hydroxyquinoline, hexamethylene diamine with formaldehyde in the presence of 2M HCL as a catalyst at $124 \pm 2^\circ\text{C}$ for 5 hrs in (1:1:2) molar proportion of reactants. The terpolymer resin composition has been determined on the basis of elemental analysis. The number average molecular weight of this resin was determined by non-aqueous conductometric titration. Thermogravimetric analysis of copolymer resin in present study has been carried out by non-isothermal thermogravimetric analysis technique in which sample is Thermal study of the resins was carried out to determine their mode of decomposition and relative thermal stabilities. The thermal activation energy determined with the help of these methods was in good agreement with each other. The copolymer (8-HQHMDAF) was characterized by FT-IR, $^1\text{H-NMR}$ Spectroscopy. SEM was used to establish the surface morphology and nature of the copolymer.

Keywords: Synthesis, condensation, thermogravimetric analysis, activation energy, resin.

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