

SYNTHESES AND THERMAL PROPERTIES OF POLYQUINOLINES  
AND THEIR COPOLYMERS

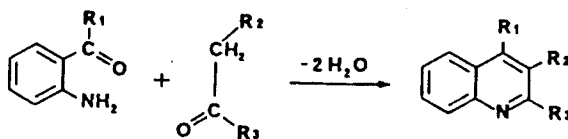
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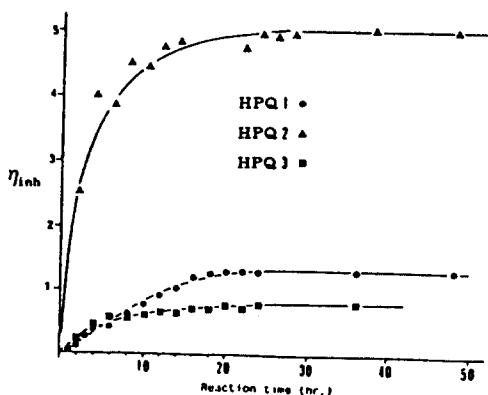
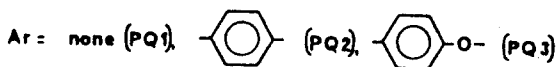
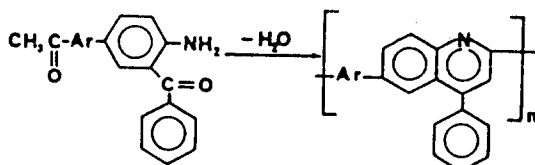
Thermally stable polymers containing quinoline units in the main chain can be synthesized by a polymerization reaction that allows a variety of structural modifications, resulting in a range of chain stiffness that can be altered from a relatively flexible polymer with a low glass transition temperature. Three homopolyquinolines were prepared : poly [4-phenyl-2,6-quinoline] and poly [4-phenyl-2,6-(p-phenylene)-quinoline] which have the chain rigidity, exhibit high glass transition temperature than poly [4-phenyl-2,6-(p-phenoxy)-quinoline] which have good solubilities in common organic solvents. Random copolymers were also prepared which have both the rigid and semirigid quinoline unit. The block copolymers which had been prepared by the method that the oligomers of the rigid polyquinoline and the flexible monomer - or the opposite. All the polyquinolines show excellent stability as determined by thermogravimetry. Activation energies for the initial degradation in random copolymers containing poly [4-phenyl-2,6-(p-phenoxy)-quinoline] (PQ3) segments were governed by that of initial decomposition of PQ3. Copolymers with segments of block showed retained stability against thermal decomposition comparative to random copolymers.

참고 문헌

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FRIEDLÄNDER REACTION



Effects of polymerization time on  $\eta_{inh}$  of homopolymers: (●) HPQ1, (▲) HPQ2, (■) HPQ3.