INTRODUCTION

Carraher and co-workers synthesized a number of Group (IV) A and B and (V) A containing polymers employing salts of dicarboxylic acids and a variety of interfacial techniques (for instance 1-8).

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R_2MX_2 + O-C-R'\text{C} - O\rightarrow (\text{M-O-C-R'}\text{C-O})
\]

The products derived from Group (IV) A organometallics were low molecular weight chains with degrees of polymerization generally within the range of 5 to 50.\(^1,6-8\) Products derived from Group (IV) B organometallics were generally high polymers with degrees of polymerization greater than one hundred.\(^1,6-8\) Nonphosphorus-containing aromatic polyanhydrides\(^3\) have been formed by converting the diacids to mixed anhydrides\(^2\) of acetic acid and then heating the mixed anhydrides and eliminating acetic anhydride.\(^9\)
Low molecular weight polyanhydrides (4) were obtained by Yoda and Miyake from the reaction of terephthalic acid in pyridine with adipyl and sebacyl chloride in ether or benzene at 25-30°C for four hours. In similar studies poorer yields were obtained when employing aliphatic diacids and terephthaloyl chloride.  

Matsuda and co-workers produced products of form from the interfacial polycondensation of isophthaloyl chloride in chloroform with 1,2-bis-(4-carboxyphenoxy) ethane in aqueous sodium hydroxide.

Numerous phosphorus-containing polymers have been synthesized, based on the Lewis acid-base reaction concept (for instance). Millich and Carraher recently reviewed these syntheses, emphasizing polymerizations employing the interfacial condensation technique. For the synthesis of polyphosphonate and polyphosphate esters and amides Carraher, Millich and others have reported that hydrolysis of the acid chloride typically limits the product yield and molecular weight. The synthesis of polyesters.