## 32. On the Miscibility of Aqueous Solution of Polyvinyl Alcohol and Polyacrylic Acid or its Salt

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For the purpose of preparation of synthetic fiber from aqueous solutions of mixtures of polyvinyl alcohol and polyacrylic acid or its salt, the miscibility of these polymers has been studied. Various ammounts of hydrochloric acid have been added to the aqueous solution of sodium salt of polyacrylic acid and the miscibility of these solutions with aqueous solution of polyvinyl alcohol has been studied at 40°C. Neither pure sodium salt nor acid has an optimum miscibility. When 3/4 of sodium salt is decomposed to acid, the solution has the best miscibility. Up to 25 wt.% acrylate may be added to 75 wt.% polyvinyl alcohol and the total concentration of the polymers can be made higher than 10%. Such solutions are so clear, homogeneous and stable that they can be conveniently used for spinning.

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## 33. Polymerization of Dipeptide Derivatives

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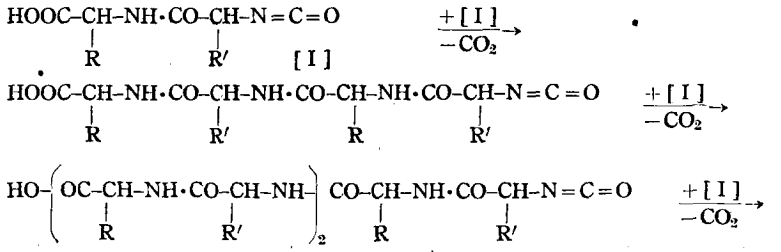
It has been shown by Woodard and Schramm, that N-carboxy-dl-phenylalaninanhydride and N-carboxy-l-leucinanhydride may be copolymerized in benzene. Structure of such copolypeptides is unknown, but may be assumed that the sequence of the two amino acid residues in the chain is a statistical one. For the purpose of synthesis of copolypeptides, in which two amino acid residues have a regular alternative sequence, we have begun researches on the polymerization of the isocyanate derivative of dipeptides (I). The polymerization may be assumed to proceed as follows:



In this preliminary experiments not a dipeptide derivative of two different amino acids but that of the same amino acid have been used.

Dileucin-isocyanate has been dissolved in benzene, refluxed for 48 hrs. for polymerization, then cooled, filtered and evaporated on a glass plate. The polymer has been obtained as a clear brittle film. The viscosity of the polymer in benzene solution has been found at 30°C to be $\eta sp/c = 0.23$ ($c = 0.93$ g/100 cc benzene).

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