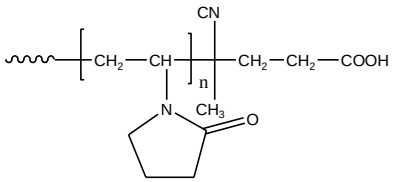
Sample Name:
Poly(N-vinyl pyrrolidone), α-carboxy-terminated

Sample #: **P7110-6-NVPCOOH**

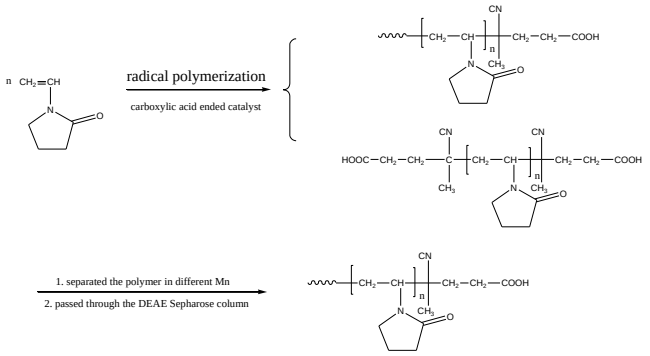
Structure:



Composition:

Mn x 10^3	PDI
5.7	1.7

Synthesis Procedure:
Monocarboxy terminated poly(N-vinylpyrrolidone) was prepared by radical polymerization of N-vinylpyrrolidinone using 4,4'-azobis (4-cyanovaleric acid as a catalyst. The obtained polymer was fractionated and from each fraction the mono carboxylic acid fraction was separated from its α-ω di carboxylic acid by passing the polymer solution in ethanol through a column packed with DEAE Sepharose resin. The polymer is obtained by precipitation from cold diethyl ether. The scheme of the reaction is illustrated below:

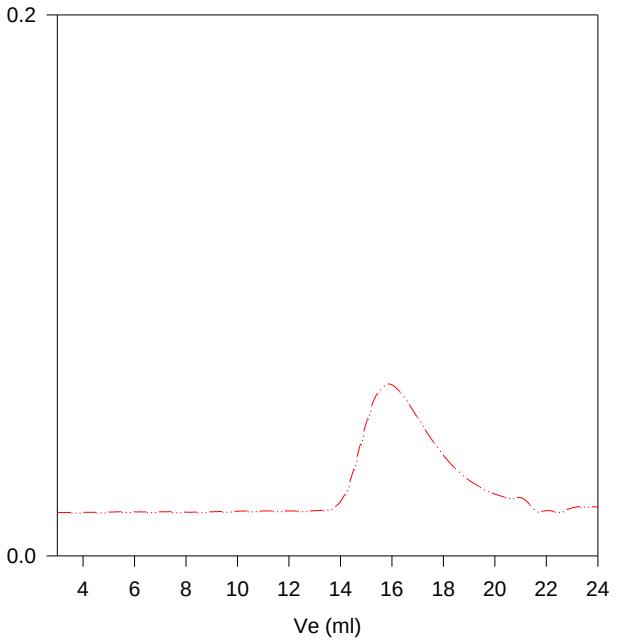


Characterization:
The molecular weight of the polymer was determined by acid base titration and polydispersity was determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector in DMF containg 0.01M LiBr salt.

Solubility:
Polymer is soluble in chloroform, THF, DMF, ethanol and water, and precipitate out from hexanes and ether.

SEC profile of the Sample:

P7110-6 NVPCOOH



Size exclusion chromatography in DMF at 40 °C:
Eluent containing 0.01 M LiBr

Monocarboxylic acid ended poly(N-vinylpyrrolidone), M_n=5700, M_w=9700, PI=1.7. (Mn obtained by titration)