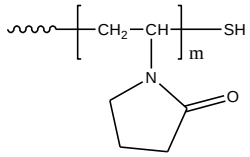
Sample Name: **α-Thiol terminated Poly (N-vinylpyrrolidone) (75%)**

Sample #: **P7339A-NVPSH**

Structure:

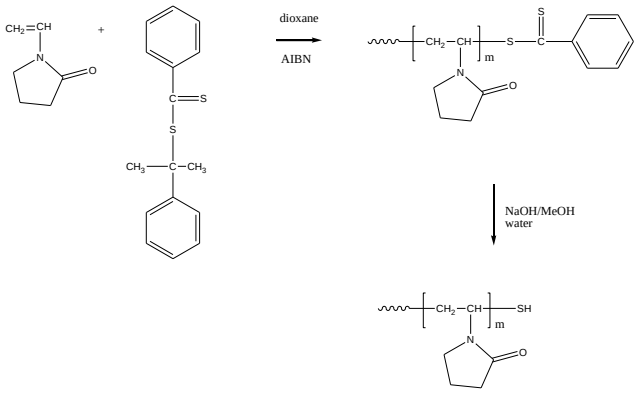


Composition:

Mn x 10^3	PDI
1.4	1.2
SH functionality: 75%	

Synthesis Procedure:

The polymer was prepared by reversible addition-fragmentation chain transfer polymerization (RAFT) of N-vinyl pyrrolidone with AIBN as initiator and cumyl dithiobenzoate as chain-transfer agent, followed by hydrolysis. The scheme of the reaction is illustrated below:



Characterization:

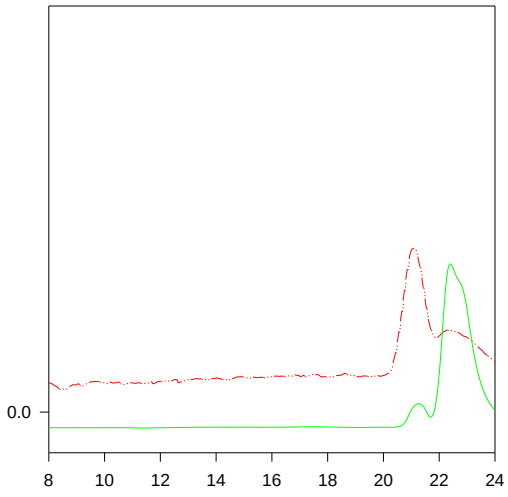
The molecular weight was calculated from elemental analysis and polydispersity was determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector and DMF containing 0.05M LiBr salt as eluent.

Solubility:

The polymer is soluble in water methanol, ethanol, DMF, and dioxane, not soluble in hexane.

SEC profile of the Sample:

P7339A-NVPSH



Size exclusion chromatography(DMF eluent 0.05M LiBr):

After oxidation in DMF with I as oxidation agent, PNVP-S-S-PNVP area oxided : area unoxided = 6:4 , 75% of the polymers are terminated with thiol

Thiol ended Poly(N-vinylpyrrolidone), Mn=1400, Mw=1700, PI=1.2
The Mn was calculated from elemental analysis,
elemental analysis result is showed as following:

%C	%H	%N	%S
59.22	7.86	10.60	1.62