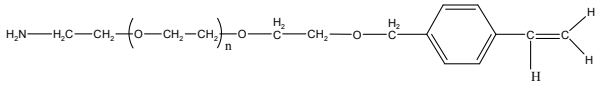
Sample Name: α-Amino ω-Vinyl Benzyl Terminated Poly(ethylene glycol)

Sample #: P9398A-Styreomer-NH2

Structure:

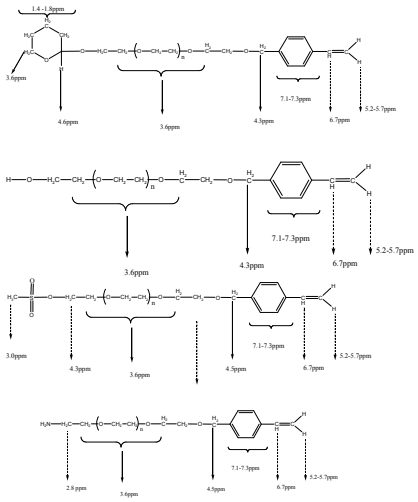


Composition:

Mn x 10^3	PDI
5.5	1.10
Vinyl Benzyl Functionality	> 95%
Amino Functionality	>98% by titration

Synthesis Procedure:

α-Amino-ω-vinyl benzyl Terminated Poly(ethylene glycol) (Styreomer™) was prepared by anionic living polymerization of ethylene oxide using potassium salt of OH protected initiator, followed by modification of OH end groups to amino end groups.



Characterization:

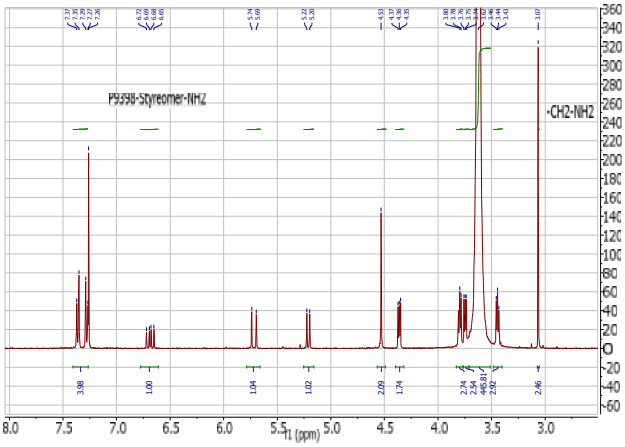
The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. Polymer functionality verified by ^{1}H-NMR spectroscopy or FT-IR.: Mesylate absorbance at 1170 disappear completely indicating formation of NH2. This is confirmed by titration.

Purification of the obtained polymer:

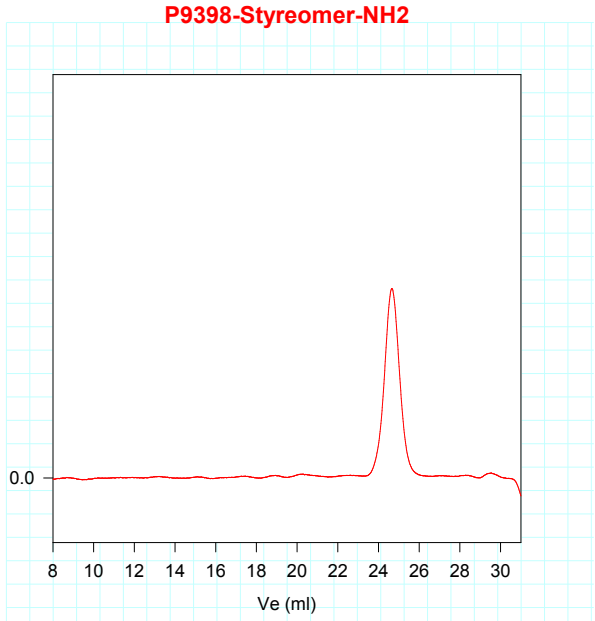
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in de-ionized distilled water to remove the any insoluble organic catalyst side product.
2. Polymer extracted from water with dichloromethane.
3. Polymer solution in dichloromethane was dried over anhydrous sodium sulfate.
4. Solution filtered and than passed through a column packed with basic Al_2O_3.
5. Solution concentrated on rota-evaporator
6. Solution precipitated in cold diethyl ether.
7. Dried under vacuum for 48h at 38°C.

^{1}H NMR of amino terminated Styreomer:



SEC of Sample:



Size exclusion chromatography of vinyl benzyl terminated poly(ethylene glycol)

M_n=5500, M_w=6000, PI=1.10, Functionality > 95%