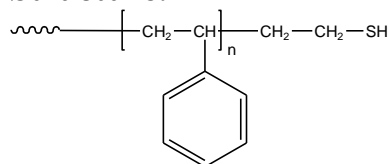


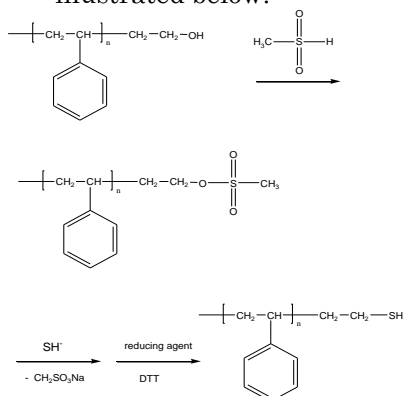
Sample Name:**Thiol Terminated Polystyrene****Sample #: P8724-SSH****Structure:****Composition:**

Mn x 10 ³	PDI
11.5	1.08
SH- Functionality	>95%
T _g (°C)	92

Synthesis Procedure:

SH end functionalized polystyrene can be synthesized quantitatively by 2 different approaches:

1. From hydroxy terminated polymer as illustrated below:



2. From direct termination of anionic living polymerization of styrene by ethylene sulfide or propylene sulfide. Polymerization of styrene by Sec.BuLi in THF at -78 °C and termination by purified ethylene sulfide or propylene sulfide.

Characterization:

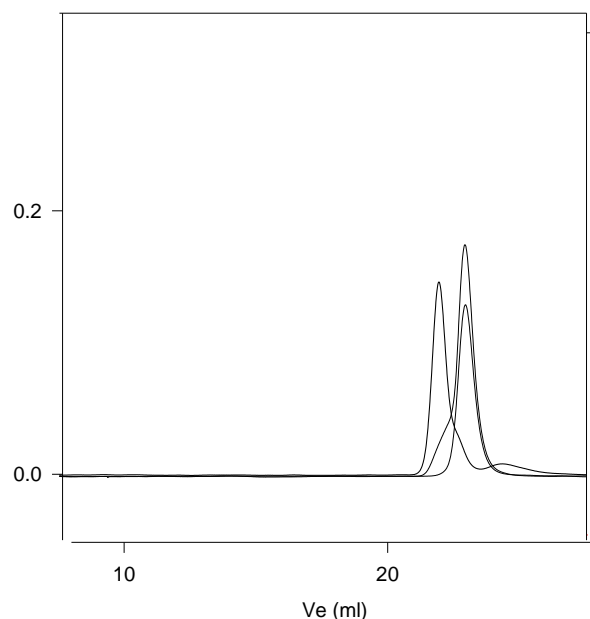
The molecular weight and polydispersity index of the hydroxyl terminated polymer were determined before functionalization with thiol by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. Polymer functionality was verified by oxidation of thiol to disulfide.

Thermal Analysis:

Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T_g) of the sample has been considered.

Solubility:

Polymer is soluble in THF, CHCl₃ and toluene.

SEC of Sample:**P8724-SSH**

Thiol terminated Polystyrene, M_n=11,500, M_w= 12,400 PI=1.08
After Reduction: Polystyrene-SH

After oxidation with iodine indicating the disulfide formation:
SH functionality over 95%

DSC thermogram for the polymer: