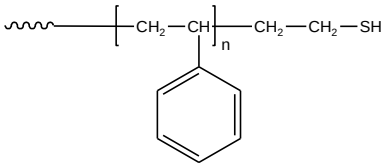
Sample Name:
Thiol Terminated Polystyrene
Sample #: P8661-SSH
Structure:

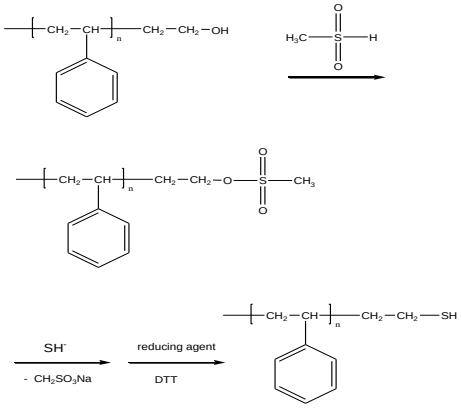


Composition:

Mn × 10^3	PDI
25.0	1.07
SH- Functionality	>90%
T_g (°C)	100

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

1. From hydroxy terminated polymer as illustrated below:



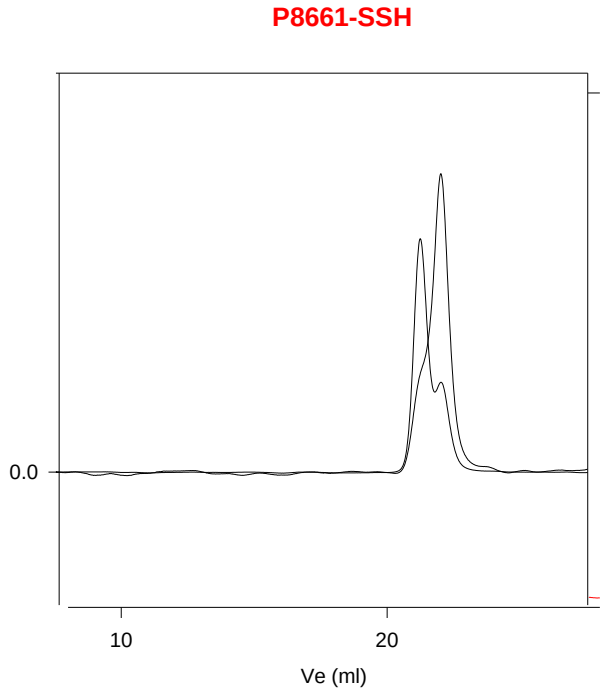
2. From direct termination of anionic living polymerization of styrene by ethylene sulfide or propylene sulfide. Polymerization of styrene by Sec.BuLi in THF at -78 oC and termination by purified ethylene sulfide or propylene sulfide.

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, $CHCl_3$ and toluene.

SEC of Sample:



Thiol terminated Polystyrene, M_n=25,000, M_w=26,800 PI=1.07
After ozxidation with iodine indicating the disulfide formation:
SH functionality over 90%

DSC thermogram for the polymer: