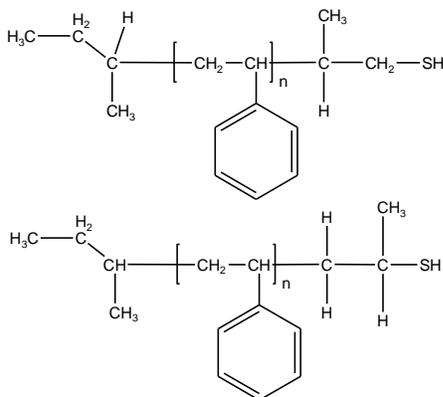


**Sample Name: Thiol Terminated Polystyrene**

**Sample # P18808-SSH**

**Structure: (2 possible architectures)**



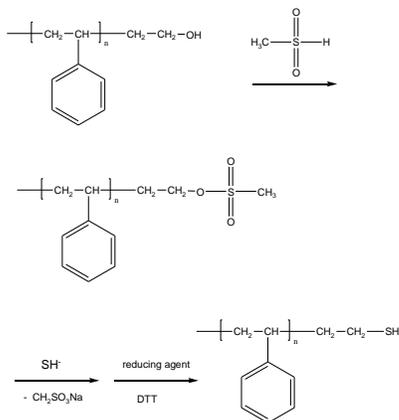
**Composition:**

Mn x 10 <sup>3</sup> (g/mol)	Mw/Mn	-SH functionality
0.8	1.10	>95%

**Synthesis:**

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

1. From hydroxy terminated polymer as illustrated below:

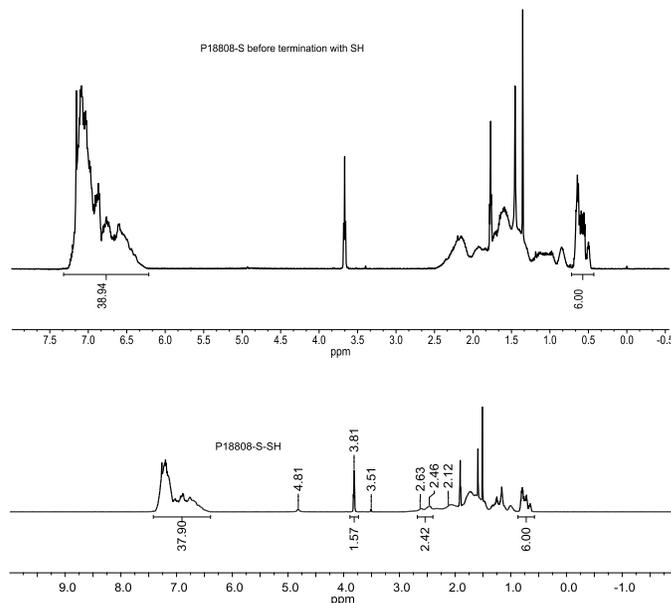


2. From direct termination of anionic living polymerization of styrene by ethylene sulfide or propylene sulfide. Polymerization of styrene by sec-BuLi in THF at -78°C and termination by purified ethylene sulfide or propylene sulfide.

**Characterization:**

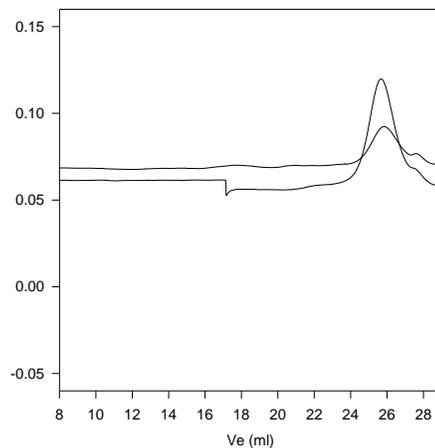
The molecular weight and polydispersity index of the hydroxyl terminated polymer were determined before functionalization with thiol by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with UV-vis and refractive index detectors. Polymer functionality was verified by oxidation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

**<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>):**



**SEC:**

**P18808-SSH**



Size exclusion chromatograph of thiol terminated polystyrene:

— M<sub>n</sub>=800 M<sub>w</sub>=900 PI=1.10

Before and after termination with Propylene sulfide Showing no disulfide formation

**DSC: (2<sup>nd</sup> heating run, 20°C/min)**

Sample: P18808-SSH Size: 9.9000 mg File: P18808-SSH.001

