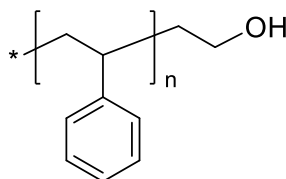


Sample name: ω -Hydroxy-terminated Polystyrene

Sample # P4465-SOH

Structure:

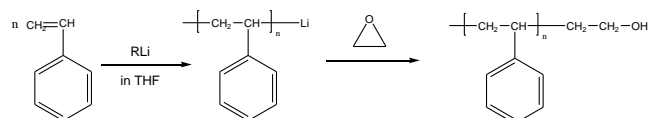


Composition and properties:

$M_n \times 10^3$ (g/mol)	0.9
M_w/M_n	1.13
Functionality:	>99%
Glass transition temperature:	$T_g = 37^\circ\text{C}$

Synthesis procedure:

Hydroxy-terminated polystyrene was prepared by anionic living polymerization of styrene in THF, followed by termination with ethylene oxide. The scheme of the reaction is presented below:



Characterization:

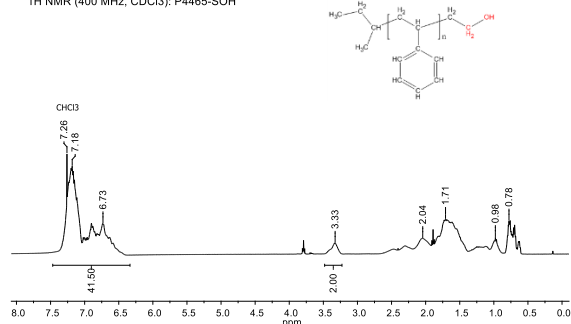
The molecular weight and polydispersity index of the polymer were determined by size exclusion chromatography (SEC) using THF as an eluent. Functionality was calculated from proton NMR spectroscopy data. Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere. The glass transition temperature (T_g) of the polymer was measured at a scan rate of $10^\circ\text{C}/\text{min}$ shortly after creating thermal history of the sample.

Solubility:

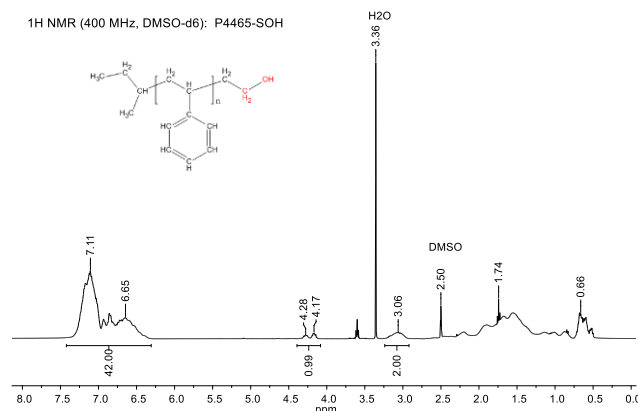
Polystyrene is soluble in chloroform, THF, DMF, and toluene. It precipitates from methanol, ethanol, water, and hexanes.

^1H NMR spectra in chloroform-d and DMSO-d₆:

^1H NMR (400 MHz, CDCl_3): P4465-SOH

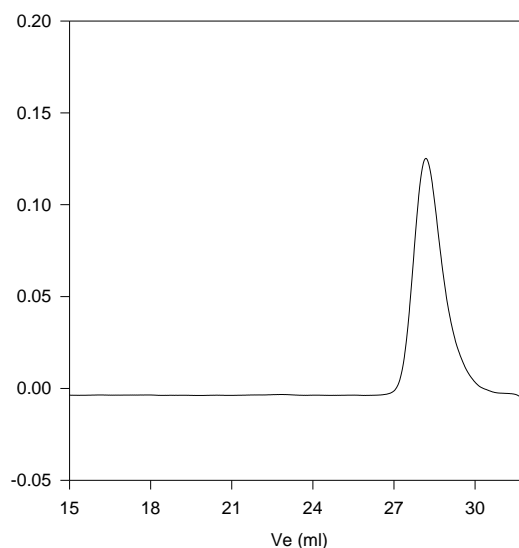


^1H NMR (400 MHz, DMSO-d_6): P4465-SOH



SEC chromatogram:

P4465-SOH



Size exclusion chromatography of ω hydroxy Terminated polystyrene:
 $M_n=900$, $M_w=1000$, $PI=1.13$, functionality>99%

DSC thermogram:

