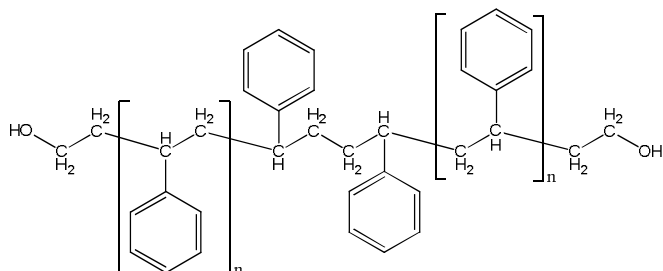


Sample Name:

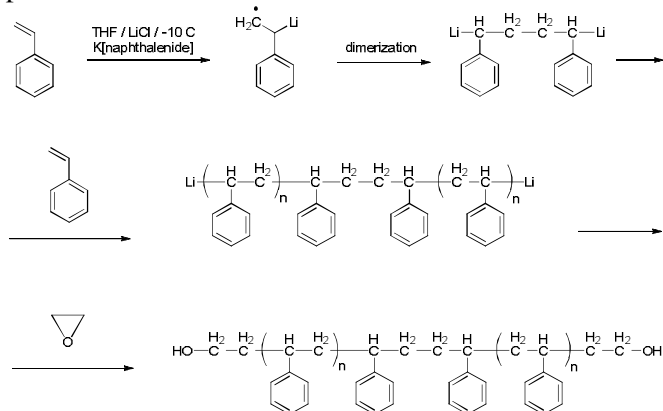
α,ω -Di(hydroxy)-terminated polystyrene,
(with styrene dimer group in the middle of polymer chain)

Sample # P4577-S2OH**Structure:****Composition:**

$M_n \times 10^3$ (g/mol)	M_w/M_n	Functionality
1.0	1.4	1.98

Synthesis procedure:

α,ω -Di(hydroxyl)-terminated polystyrene was prepared by living anionic polymerization of styrene using a bifunctional initiator in THF followed by termination with ethylene oxide. The scheme of reaction is presented below:

**Characterization:**

End-group functionality of the polymer was confirmed by $^1\text{H-NMR}$ spectroscopy.

The molecular weight and polydispersity index of the polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detectors.

Solubility:

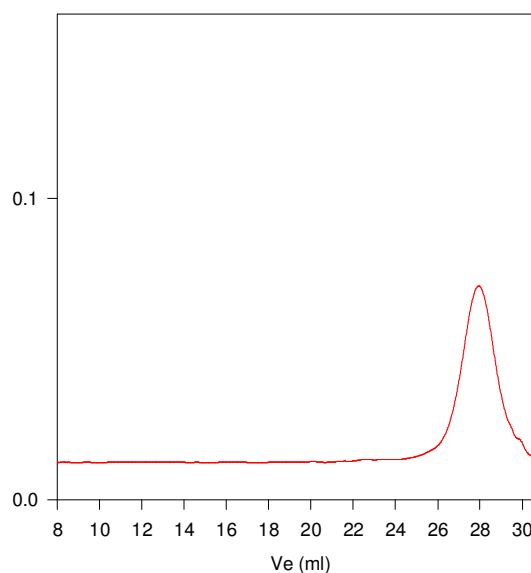
Polystyrene is soluble in toluene, THF, chloroform; and it precipitates from cold methanol, water.

Thermal analysis:

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.

SEC elugram of the polymer:

P4577-S2OH



Size exclusion chromatography of ω - α dihydroxy Terminated polystyrene:
 $M_n=1000$, $M_w=1400$ PI=1.4 functionality >1.98

DSC thermogram for the polymer: