

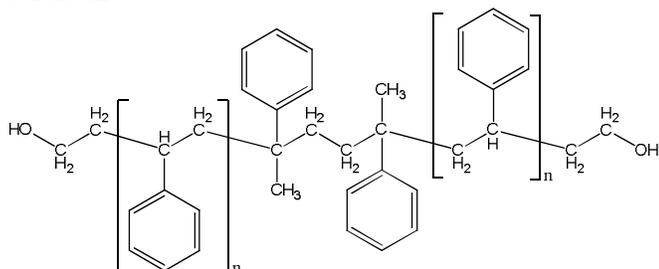
Sample Name:

α,ω -Di(hydroxy)-terminated polystyrene,

(with α -methyl styrene dimer group in the middle of polymer chain)

Sample # P1103-S2OH

Structure:

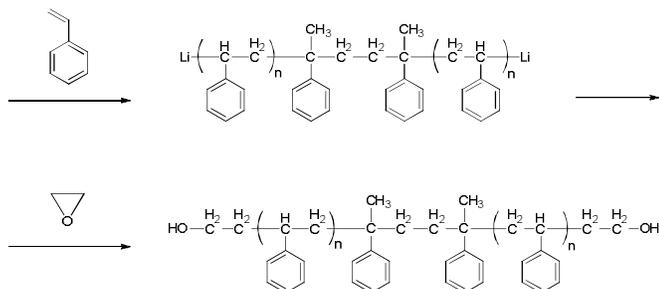
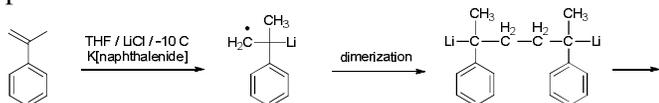


Composition:

$M_n \times 10^3$ (g/mol)	M_w/M_n
8.5	1.07
Glass transition temperature (T_g):	99 °C

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:

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.

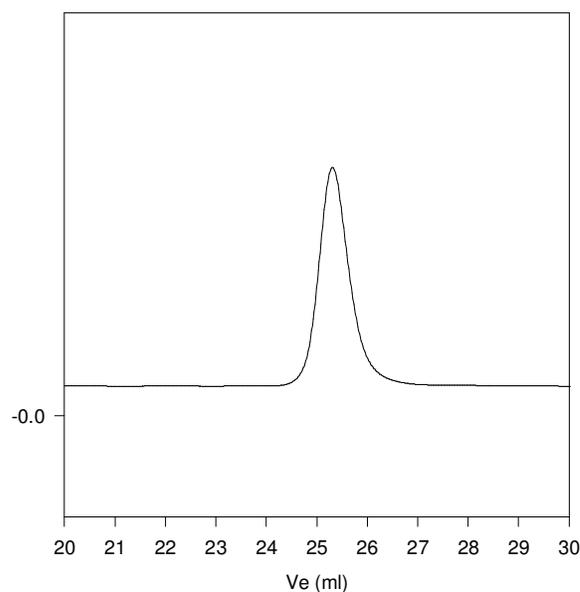
Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere. The glass transition temperature (T_g) of the polymer was measured at a scan rate of 10°C/min shortly after creating thermal history of the sample.

Solubility:

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

SEC elugram of the polymer:

P1103-S2OH



Size exclusion chromatography of α,ω -dihydroxy terminated polystyrene.

$M_n=8500$, $M_w=9000$, $PI=1.07$, functionality=1.90.

DSC thermogram of the polymer:

