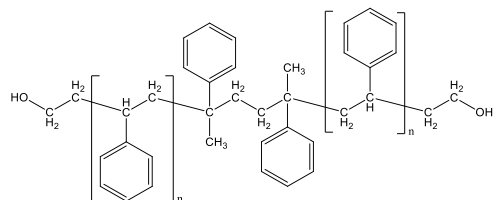


Sample Name:

**Poly(styrene),  $\alpha,\omega$ -bis(hydroxy)-terminated  
(with  $\alpha$ -methylstyrene dimer in center of polymer chain)**

Sample#: P43124E-S2OH

**Structure:**



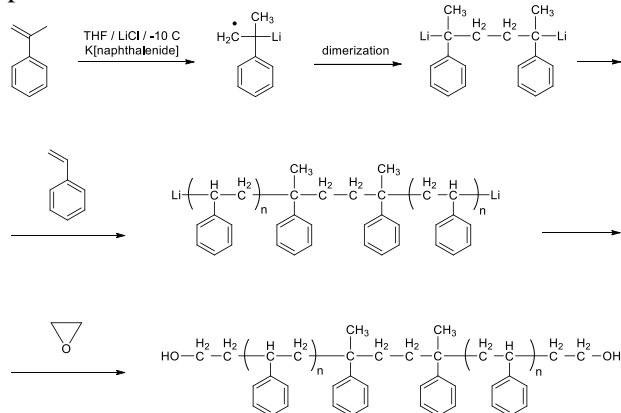
**Composition:**

$M_n \times 10^3$ (g/mol)	$M_w/M_n$
7.0	1.05

Glass transition temperature ( $T_g$ ): 97°C

**Synthesis procedure:**

$\alpha,\omega$ -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:



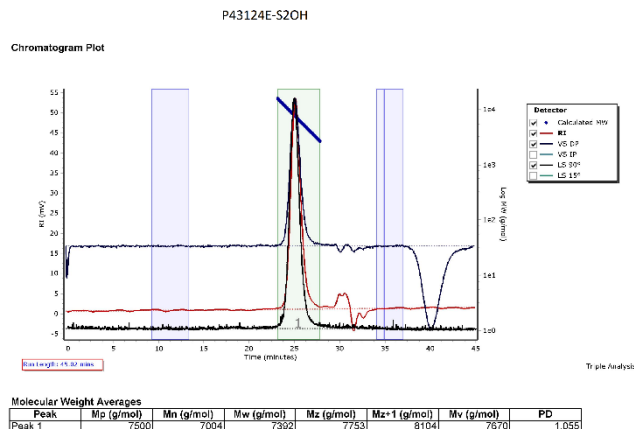
**Characterization:**

The molecular weight and polydispersity index of the polymer were determined by size exclusion chromatography (SEC) using triple detection method. Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter 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, and chloroform. It precipitates from cold methanol, and water.

**SEC elugram of the polymer:**



**DSC thermogram of the polymer:**

