

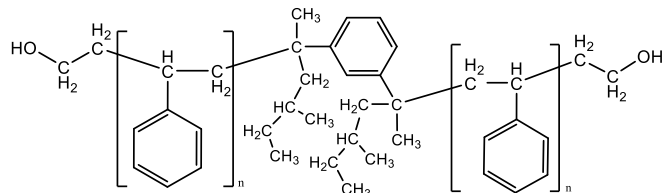
Sample Name:

**Poly(styrene),  $\alpha,\omega$ -bis(hydroxy)-terminated**

(with *p*-[bis-Sec.-butyl ethyl]benzene group in the middle of polymer chain)

Sample #: P43735A-S2OH

**Structure:**

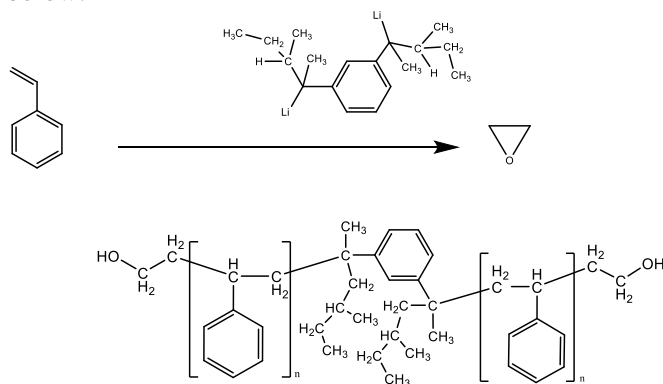


**Composition:**

$M_n \times 10^3$ (g/mol)	$M_w/M_n$
3.3	1.21

**Synthesis procedure:**

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



**Characterization:**

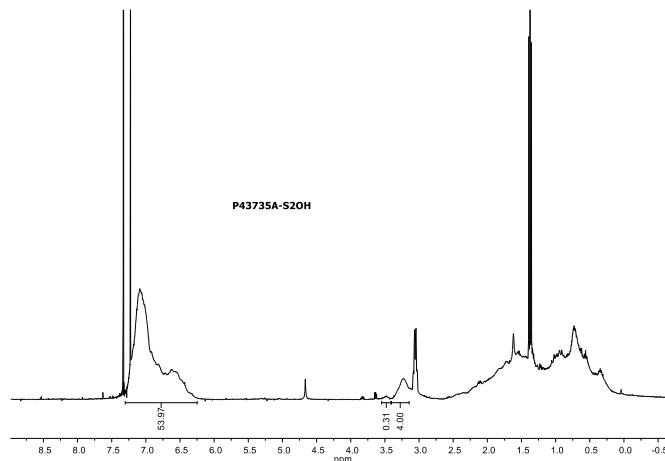
End-group functionality of the polymer was confirmed by  $^1\text{H-NMR}$  spectroscopy.

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.

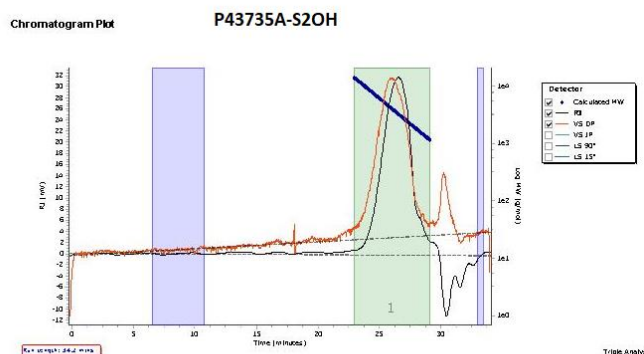
**Solubility:**

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

**$^1\text{H-NMR}$  of the polymer run in  $\text{CdCl}_3$ :**



**SEC elugram of the polymer:**



Molecular Weight Averages							
Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	3281	3209	3898	4773	5844	4499	1.215