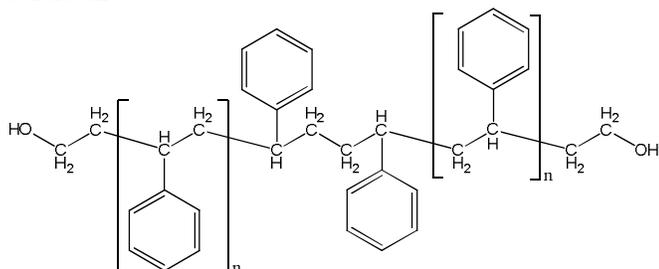


### Sample Name:

**$\alpha,\omega$ -Di(hydroxy)-terminated polystyrene,**  
(with styrene dimer group in the middle of polymer chain)

### Sample # P1087-S2OH

### Structure:

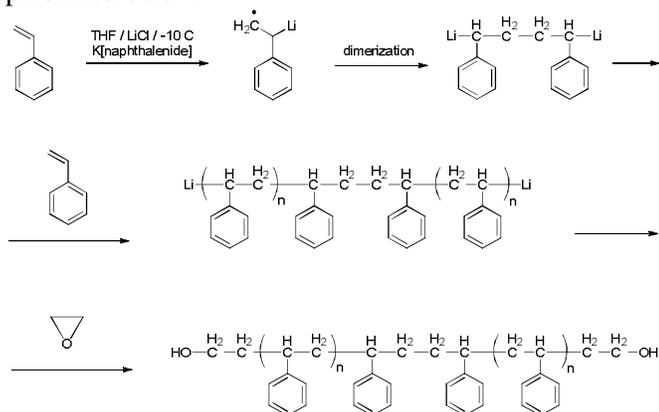


### Composition:

$M_n \times 10^3$ (g/mol)	$M_w/M_n$	Functionality
2.1	1.14	1.7

### 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:

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

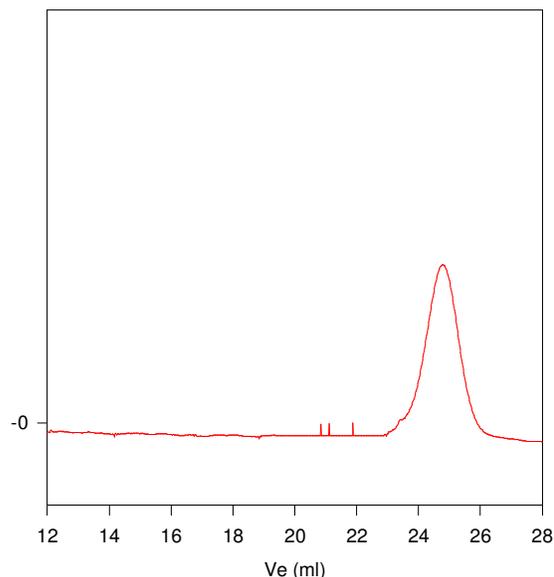
The molecular weight and polydispersity index of the polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detectors.

### Solubility:

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

### SEC elugram of the polymer:

#### P1087-S2OH



Size exclusion chromatography of  $\alpha$ - $\omega$  dihydroxy Terminated polystyrene:  
 $M_n=2100$ ,  $M_w=2400$ ,  $M_z=2700$ ,  $PI=1.14$ , functionality=1.7