

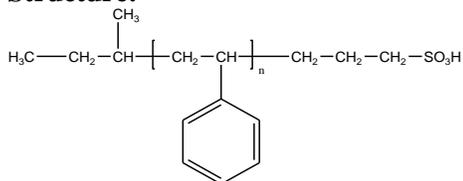
**Sample Name: Sulfonic Acid Terminated Polystyrene**

**SEC profile of the Sample:**

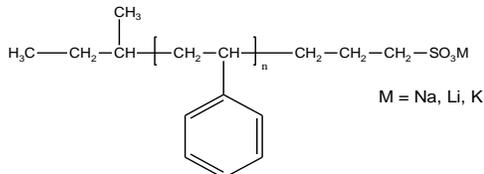
**Sample #: P2253-SSO3H**

P2253-SSO3H

**Structure:**

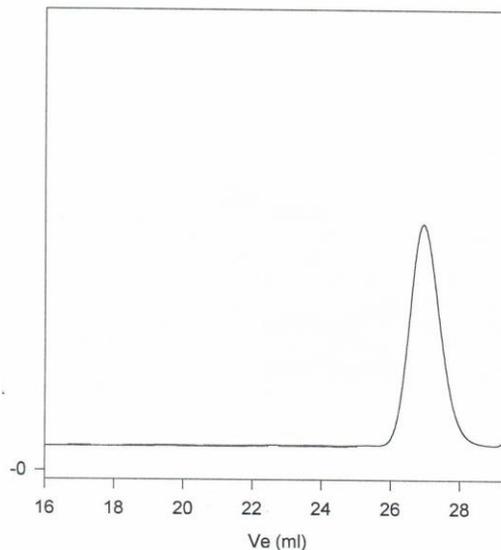


or



**Composition:**

|        |      |
|--------|------|
| Mn     | PDI  |
| 1040   | 1.11 |
| DP: 10 |      |



Size exclusion chromatograph of Poly styrene before termination with propansultone:  
Mn 1040(DP:10) Mw: 1200 PI: 1.11

**Synthesis Procedure:**

Sulfonic acid functionalized polystyrene was prepared by living anionic polymerization of styrene followed by termination with dried propansultone. Salts of this polymer were prepared by neutralization with the base solution.

**Characterization:**

The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. The molecular weights and the polydispersity index for the precursor (pick-out before propansultone addition) polymer were calculated. The functionality of polymer was verified by proton NMR for a low molecular weight and by acid base titration for high molecular weights polymer.

**Thermal analysis:**

Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T<sub>g</sub>) has been considered.

**Solubility:**

Polymer is soluble in DMF, THF, toluene and CHCl<sub>3</sub>. It precipitates from cold methanol, ethanol, water, and hexanes.