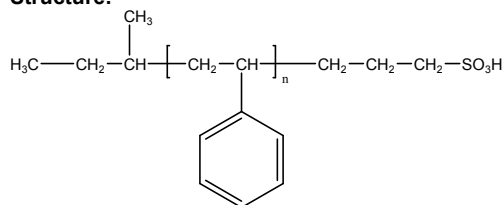


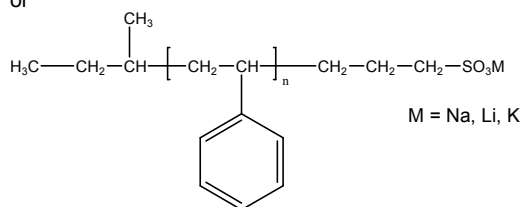
Sample Name:
Sulfonic Acid Terminated Polystyrene

Sample #: P4679-SSO3H

Structure:



or

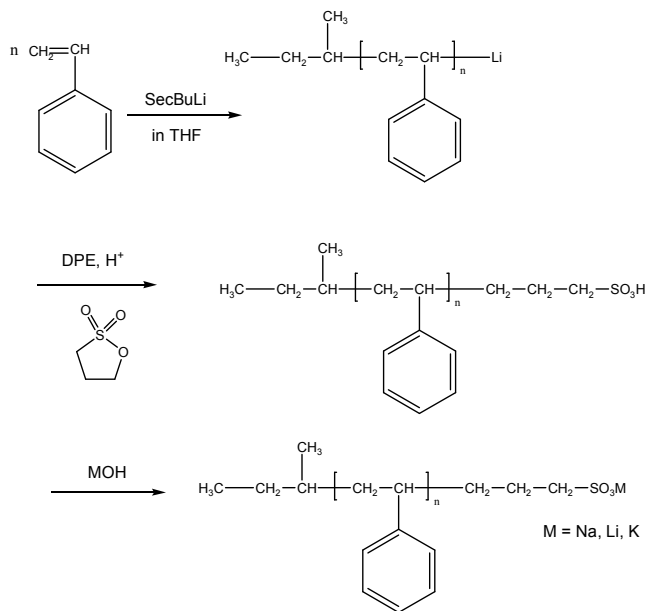


Composition:

Mn x 10 ³	PDI
4.0	1.10

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. The scheme of the reaction is illustrated below:



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. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.

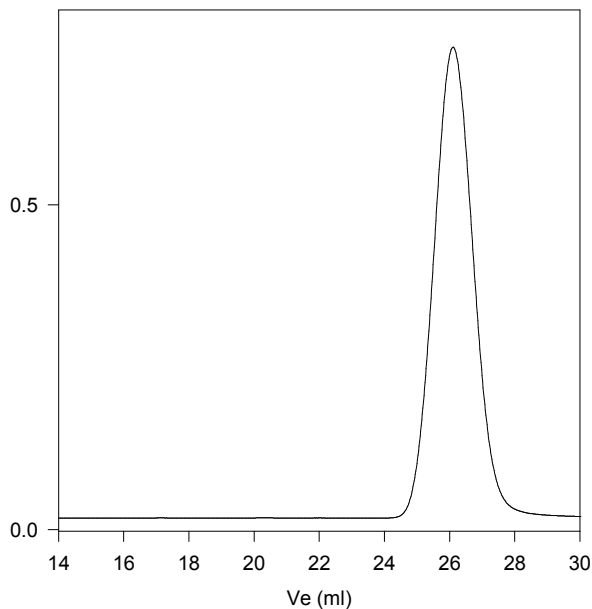
The molecular weights and the polydispersity index for the precursor (pick-out before propansultone addition) polymer were calculated. The functionality of polymer was verified by proton NMR for a low molecular weight and by acid base titration for high molecular weights polymer.

Solubility:

Polymer is soluble in DMF, THF, toluene and CHCl₃. It precipitates from cold methanol, ethanol, water and hexanes.

SEC of Sample:

P4679-SSO3H



Size exclusion chromatograph of polystyrene before terminating with propane sultone:

Mn: 4000 Mw: 4500 Mw/Mn = 1.10 Functionality >99%