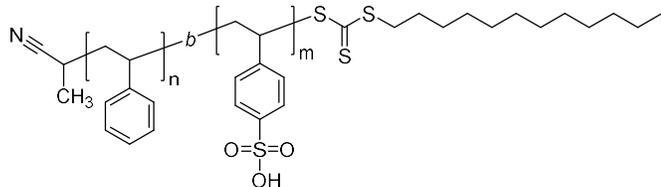


Sample Name: Poly(styrene)-b-poly (4-styrene sulfonic acid)

Sample #: P16425-S-SSO3H

Structure:

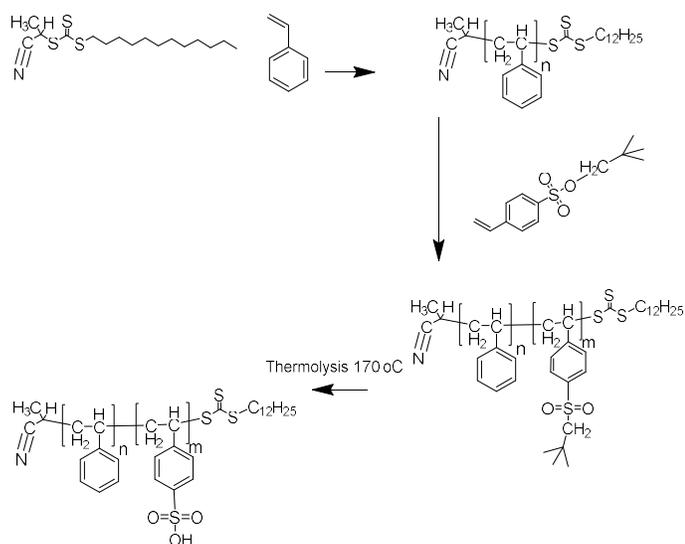


Composition:

Mn × 10 ³ PS-b-PSSO3H	PDI
9.5-b-8.0	1.28

Synthesis Procedure:

The polymer was synthesized by RAFT polymerization process as shown in the following reaction scheme:



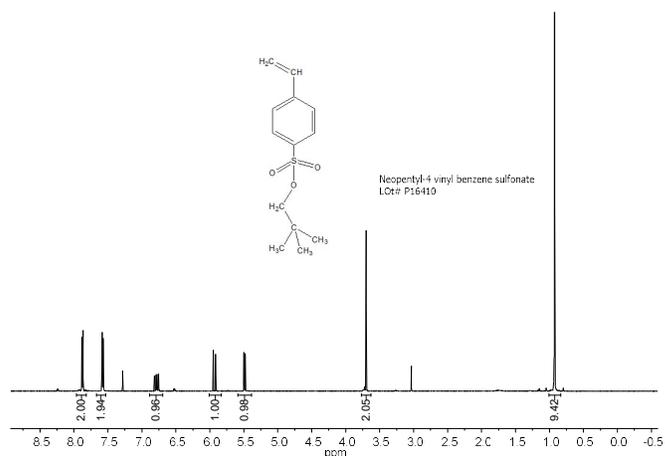
Characterization:

The molecular weight was calculated from ¹H NMR and polydispersity of product was characterized by size exclusion chromatography (SEC) The thermolysis of neopentyl group was monitored by ¹H NMR at around 0.92 ppm.

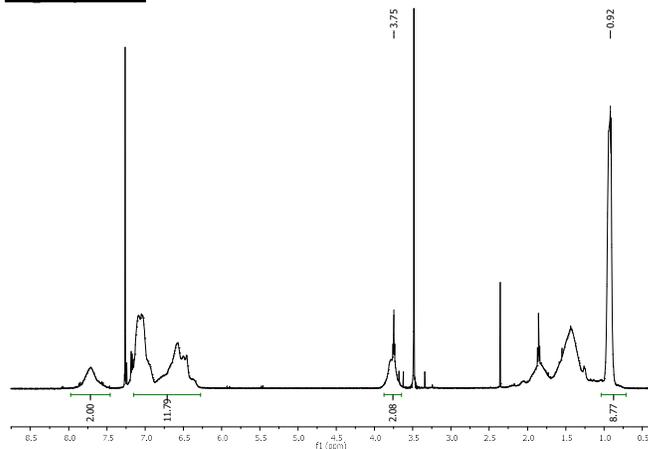
Solubility:

The polymer is soluble in DMSO and partially soluble in acetone, chloroform and THF depending on the sulfonation degree.

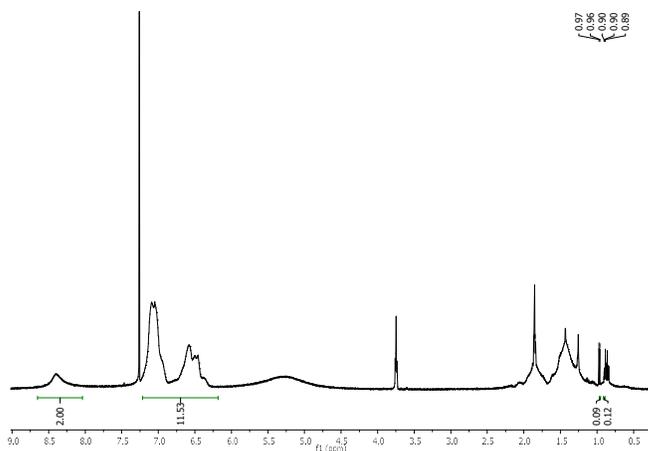
¹H NMR of neopentyl-4-styrene sulfonate (SSO3NP):



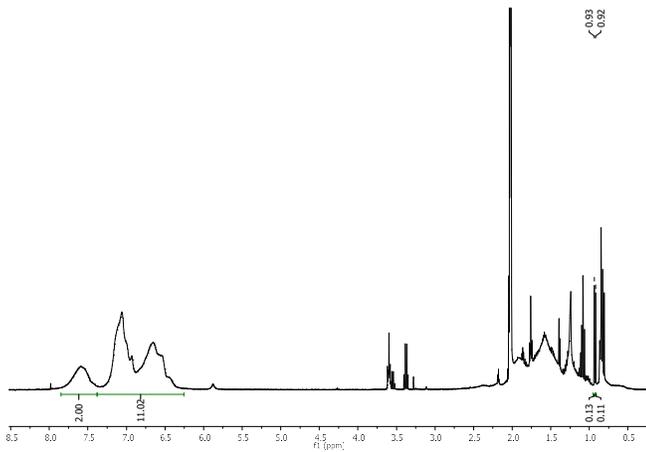
¹H NMR spectrum of the S-SSO3NP diblock copolymer:



¹H NMR spectrum of the S-SSO3H after thermolysis (in CDCl₃):



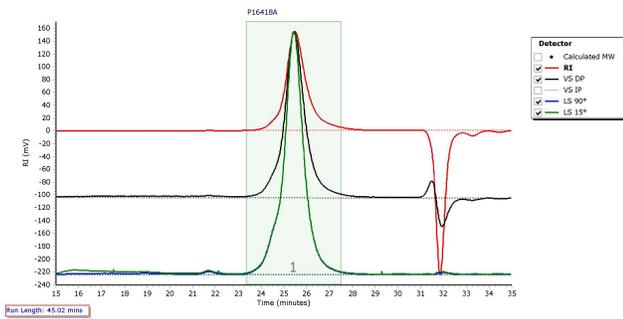
1H NMR spectrum of the S-SSO3H after thermolysis (in Acetone-d6):



SEC of first block Styrene-RAFT:

P16418A

Chromatogram Plot



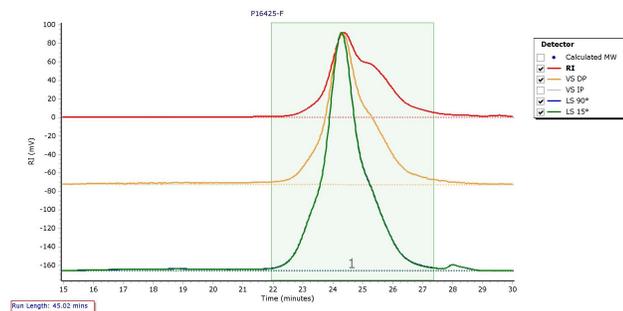
Molecular Weight Averages

Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	10575	9405	10423	11462	12634	11223	1.108

SEC of Styrene-b-SSO3NP diblock copolymer:

P16425-F

Chromatogram Plot



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	30526	20631	26499	32994	40590	31431	1.284

Molecular weight after thermolysis would be 9500-b-8000 (PS-b-PSSO3H)