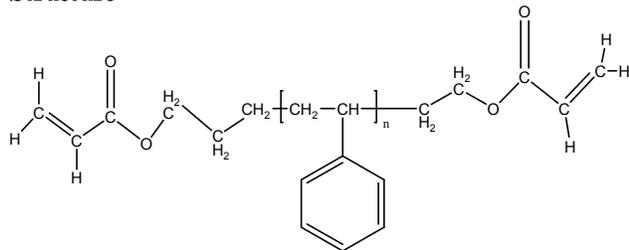


Sample Name:

α,ω -Diacrylate end Functionalized Polystyrene

Sample #: P18109A- S2acrylate

Structure:

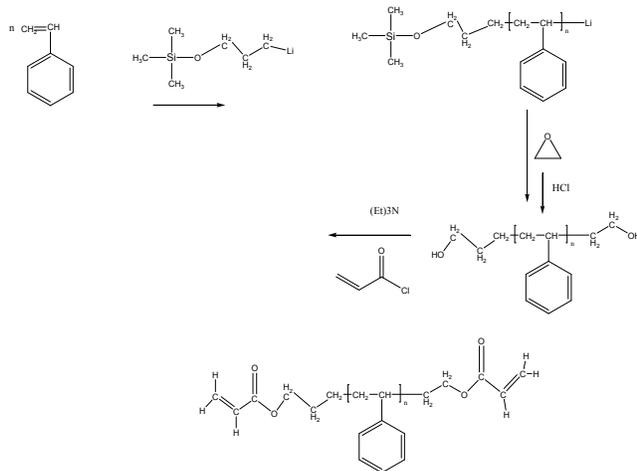


Composition:

| | |
|----------------------|------|
| Mw x 10 ³ | PDI |
| 506.0 | 1.18 |
| T _g (°C) | 102 |

Synthesis Procedure:

α,ω -Hydroxy Terminated Polystyrene was prepared by living anionic polymerization of styrene using hydroxy protected initiator followed by terminated with ethylene oxide. The OH end groups were then converted to acrylic end groups.



Characterization:

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

Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

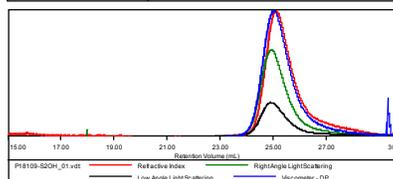
Solubility:

Polymer is soluble in toluene, THF, CHCl₃ and can be precipitated in water and, cold methanol.

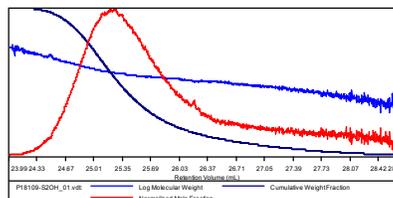
SEC for the functional polymer:

Sample ID: P18109-S2OH

| | |
|-----------------------|--------------------------|
| Concentration (mg/mL) | 0.9577 |
| Sample dn/dc (mL/g) | 0.1850 |
| Method File | PS80K-July-2013-0000.vcm |
| Column Set | 3x PL 1113-6300 |
| System | System 1 |



| Sample | Mn | Mw | Mp | Mw/Mn | IV |
|--------------------|---------|---------|---------|-------|--------|
| P18109-S2OH_01.vdt | 428,664 | 506,207 | 528,831 | 1.181 | 1.5281 |



1H NMR of the Polymer

