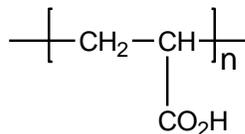


Sample Name: Poly(acrylic acid)

Sample #: P42718D-AA

Structure:



Composition:

| | |
|----------------------|------|
| Mn x 10 ³ | PDI |
| 12.0 | 1.06 |

Synthesis Procedure:

Poly(acrylic acid) is obtained by living anionic polymerization reaction.

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.

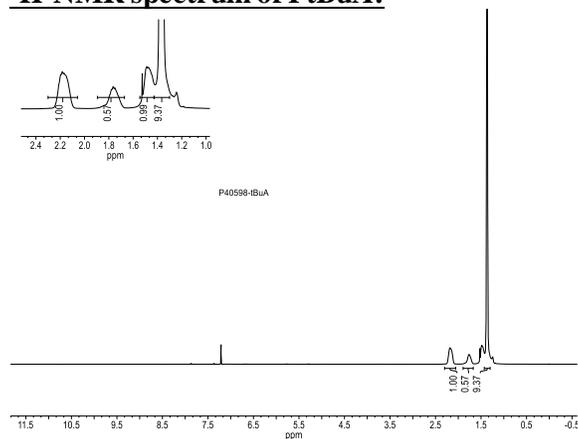
Hydrolysis:

The quantitative hydrolysis of the ester is confirmed by the disappearance of tert.butyl ester absorbance at around 1370cm⁻¹.

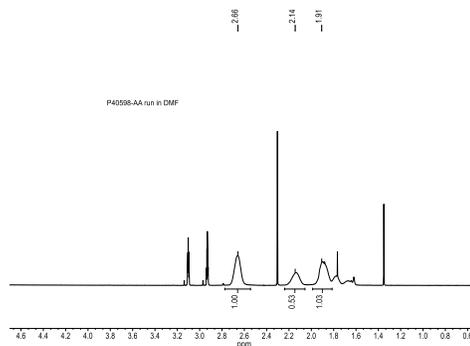
Solubility:

Poly(acrylic acid) is soluble in THF, water, methanol and ethanol. The polymer precipitates from ether, acetone and hexane.

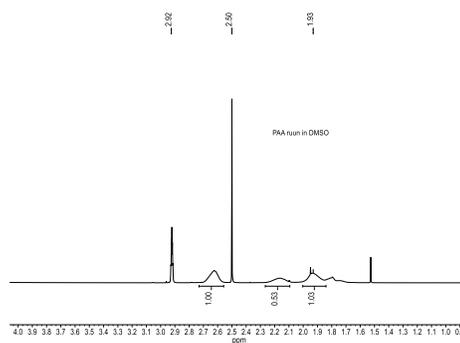
¹H-NMR spectrum of PtBuA:



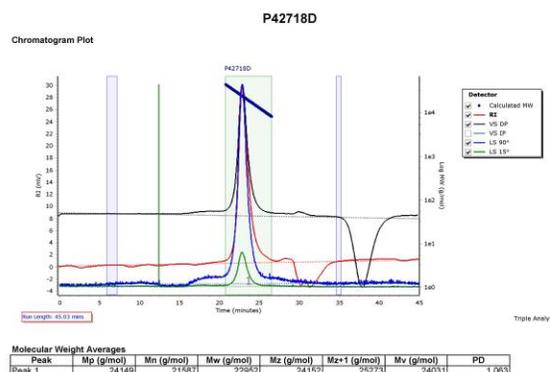
¹H-NMR spectrum of PAA in DMF:



¹H-NMR spectrum of Polymer in DMSO:



SEC elugram of Homopolymer tBuA:



FTIR Spectra of Poly(tert. butyl acrylate) and poly(acrylic acid):

