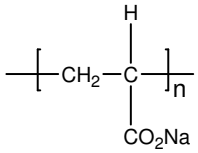
Sample Name:
Poly(acrylic acid) sodium salt (by RAFT process)

Sample #: **P6621B-ANa**

Structure:



Composition:

Mw x 10^3	PDI
269.0	1.2

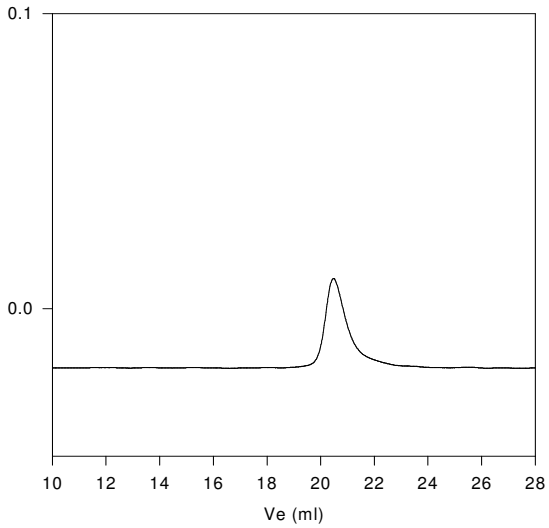
Synthesis Procedure:
Poly(acrylic acid) is synthesized by anionic process and then converted to its sodium salt.

Characterization:
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF.For the analysis purposes of its molecular weights poly acrylic acid was converted to its n-butyl ester and characterized in THF 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 dual detectors model 270 from Viscotek Co.

Solubility:
Poly(acrylic acid) sodium salt is soluble in water.

SEC elugram of the polymer:

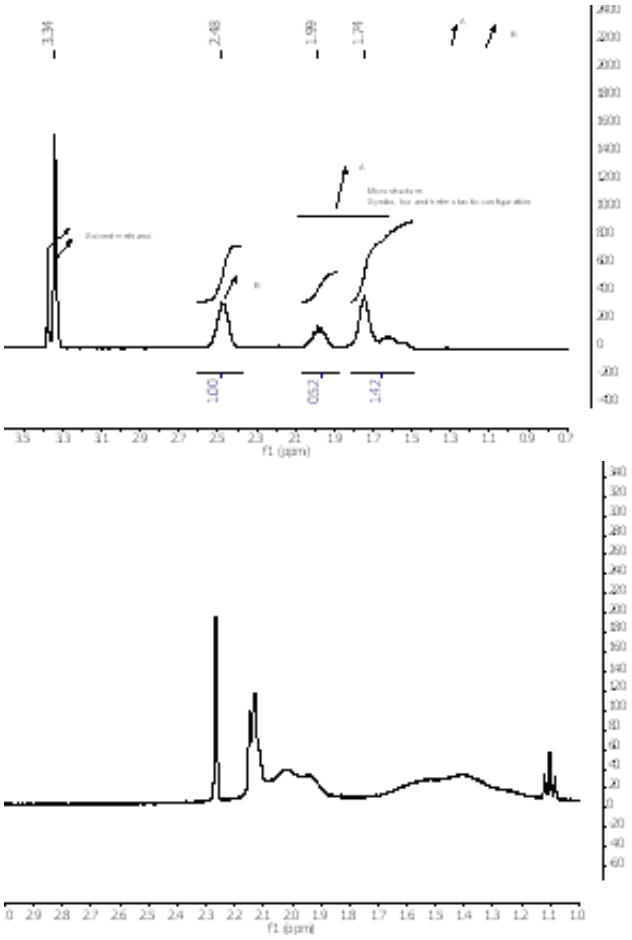
P6612-tBuA Precursor for P6612A-AA



Size exclusion chromatograph of Poly(tert-butyl acrylate):
M_n=360,000, M_w=432,000, PI=1.20
After Hydrolysis of tert.butyl ester:
PAA Mn 202,000 Mw/Mn `1.2

After Neutralization with NaOH; Mn 269,000 Mw/Mn 1.2

^{1}H NMR spectrum of the Poly acrylic acid run in CD3OD:



References:

1. Ph. Teyssie, Ph. Bayard, R. Jerome, **S. K. Varshney**, and J. S. Wang, *35th IUPAC International Union of Pure & Applied Chemistry International Symposium on Macromolecules" 1994, 67.*
2. R. Fayt, R. Forte, C. Jacobs, R. Jerome, T. Ouhadi, Ph. Teyssie and **S. K. Varshney,** *Macromolecules, 1987, 20, 1442-1444.*
3. Jerome, R. Forte, **S. K. Varshney**, R. Fayt, and Ph. Teyssie, "The Anionic Polymerization of Alkylacrylates:A Challenge" in the Recent Advances in Mechanistic and Synthetic Aspects of Polymerization: M. Fontanaille and A. Guyot Ed., NATO ASI Series *C 215,101 (1987), CA Vol. 108, 12, 094992.*
4. Ph. Teyssie, R. Fayt, C. Jacobs, R. Jerome, L. Leemans, and **S. K. Varshney** *Am. Chem. Soc.,Polym. Prepr. 1988, 28, 2, 52-53*