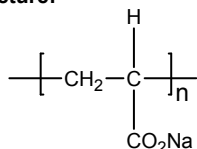


Sample Name:
Poly(acrylic acid) sodium salt (by RAFT process)
Sample #: **P14587-ANA**

Structure:



Composition:

Mn x 10 ³	PDI
170.00	1.17

Synthesis Procedure:

Poly(acrylic acid) is synthesized by RAFT process and then converted to its sodium salt.

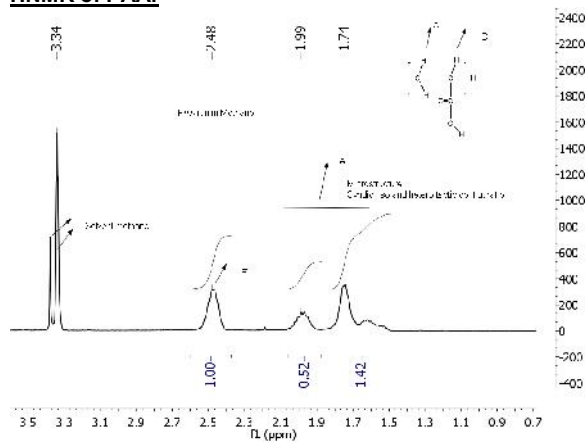
Characterization:

The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.

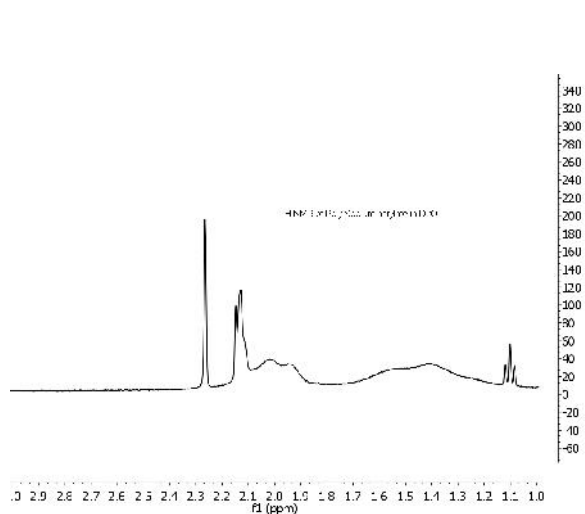
Solubility:

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

HNMR of PAA:



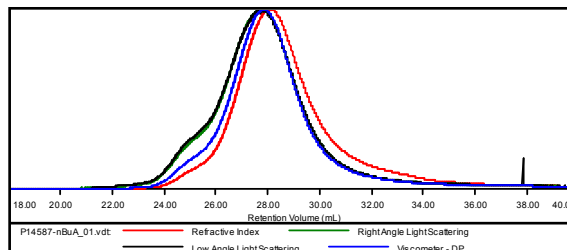
HNMR of PANa in D2O:



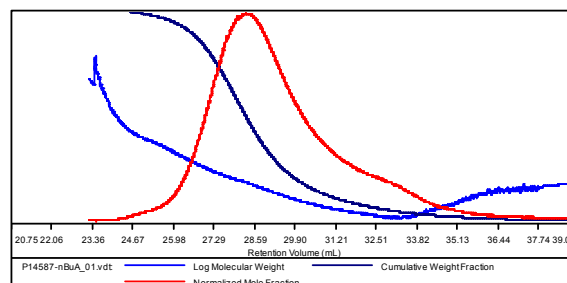
SEC of Homopolymer Precursor for the Sodium salt- the Poly n-Butyl acrylate after converting PAA to PnBuA for the determination of its molecular weight

Sample ID: P14587-nBuA

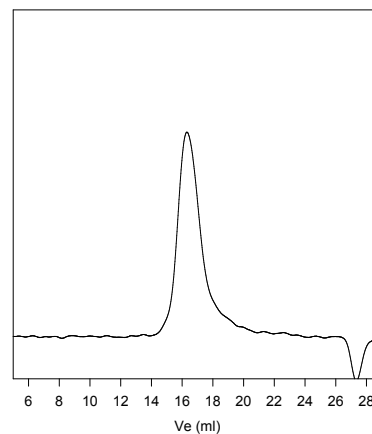
Concentration (mg/mL)	27.3508
Sample dn/dc (mL/g)	0.0640
Method File	PS80K-Apr-2013-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P14587-nBuA_01.vdt	222,202	261,649	252,605	1.178	1.3932



P14587-AA (SEC in water at 60 oC)



Size Exclusion Chromatography of the polymer:
PAA: Mn 125,000 Mw: 146,000 Mw/Mn 1.17

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. Fontanille 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