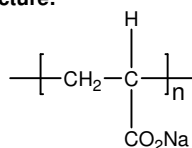


Sample Name:  
**Poly(acrylic acid) sodium salt (by anionic process)**  
 Sample #: **P18423-ANa**

Structure:



Composition:

Mn x 10 <sup>3</sup>	PDI
60.0	1.09

#### Synthesis Procedure:

Poly(acrylic acid) is synthesized from the Acid Hydrolysis of Poly tert-butylacrylate) in Dioxane Poly acrylic acid neutralized with NaOH.

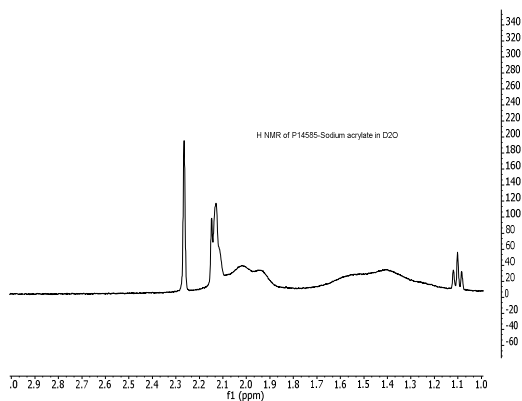
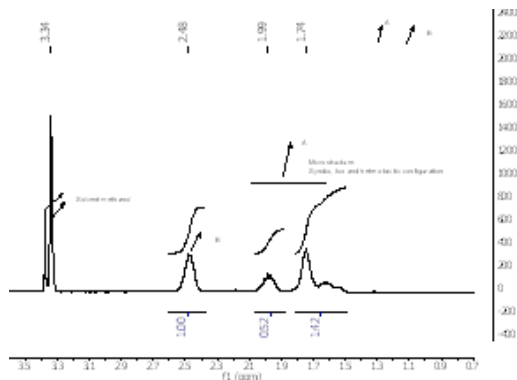
#### Characterization:

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.

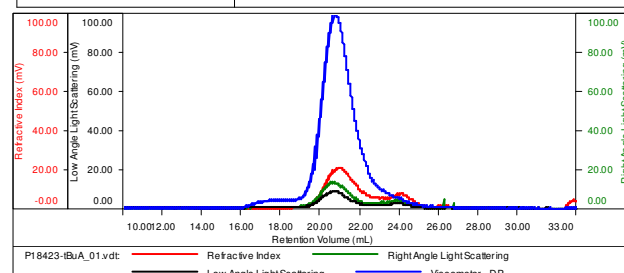
#### HNMR of the Poly acrylic acid run in CD3OD:



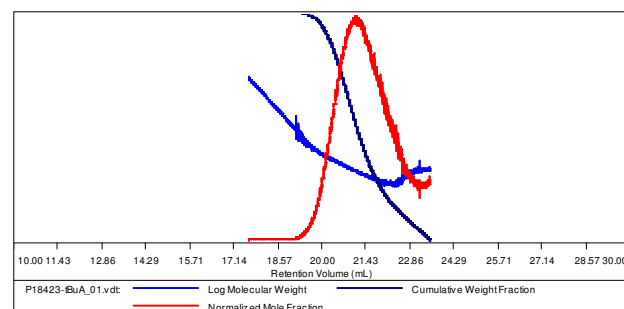
#### SEC of Homopolymer Precursor for the Poly tert Butyl acrylate .

Sample ID: P18423-tBuA

Concentration (mg/mL)	2.9206
Sample dn/dc (mL/g)	0.0840
Method File	PS80K-Jan05-2014-0001.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18423-tBuA_01.vdt	83,160	91,201	90,619	1.097	0.7521



**Poly acrylic acid Mn on the basis of above characterization:**  
**Mn 46,500 Mw: 51,000 Mw/Mn 1.09**

**its sodium salt form: Mn: 60.000 Mw/Mn =1.09**

#### 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