Sample Name: **Oligomers of Poly(t-butyl acrylate)**

Sample #: **P9348E-tBuA**

Structure:
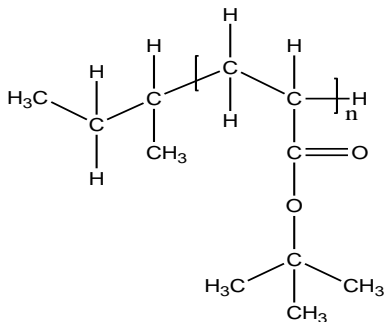
Composition:

Degree of Polymerization	PDI
Dp by HNMR: 5	1.10

Synthesis Procedure:

Poly(t-butyl acrylate) is obtained by living anionic polymerization of t-butyl acrylate.[1-4]

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.

Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T_g) of the sample has been considered.
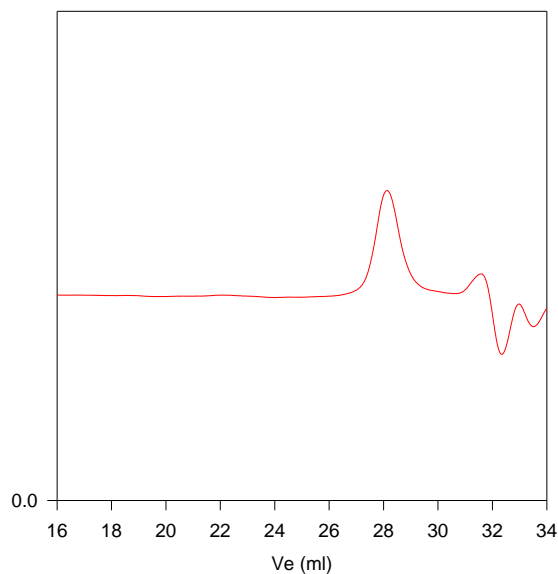
Solubility:

Poly(t-butyl acrylate) is soluble in THF, hexanes (low MW), toluene and $CHCl_3$. This polymer precipitates from ethanol and methanol containing 10-15% water.

H NMR of the Polymer

P9348E-tBuA(pentamer)
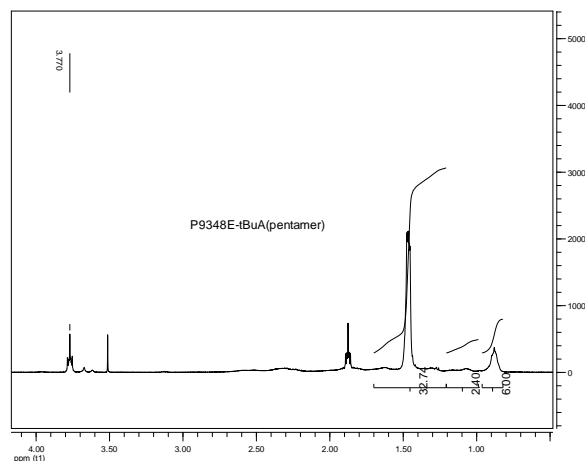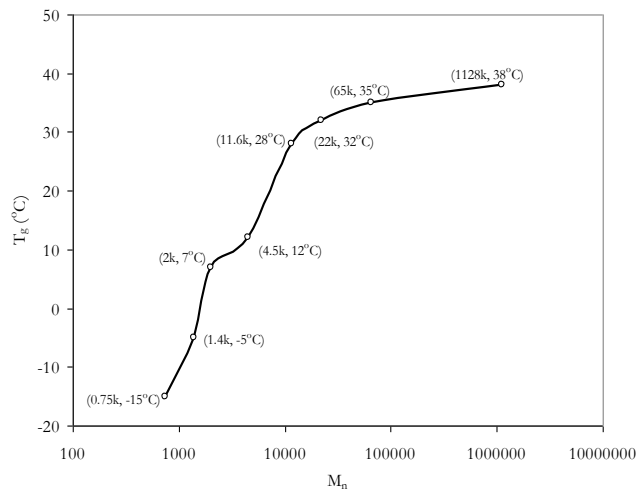
SEC of Sample:

P9348E-tBuA Oligomer

Ve (ml)

Size Exclusion Chromatography of Poly tert.Butyl acrylate

Dp of tBuA monomer is : 5   Mw/Mn 1.10

Tg of poly t-butyl acrylate as function of molecular weight

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*