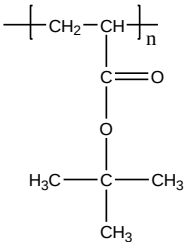
Sample Name: **Poly (t-butyl acrylate)**

Sample #: **P1597-tBuA**

Structure:



Composition:

Mn x 10^3	PDI
2.5	1.20

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.

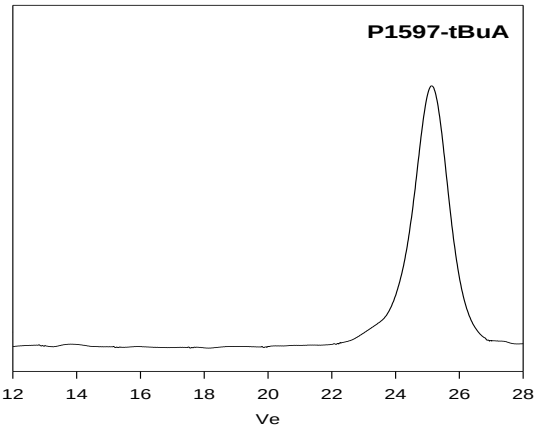
Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min.The inflection glass transition temperature (T_g) of the sample has been considered.

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.

T_g vs MW for selected poly t-butyl acrylate

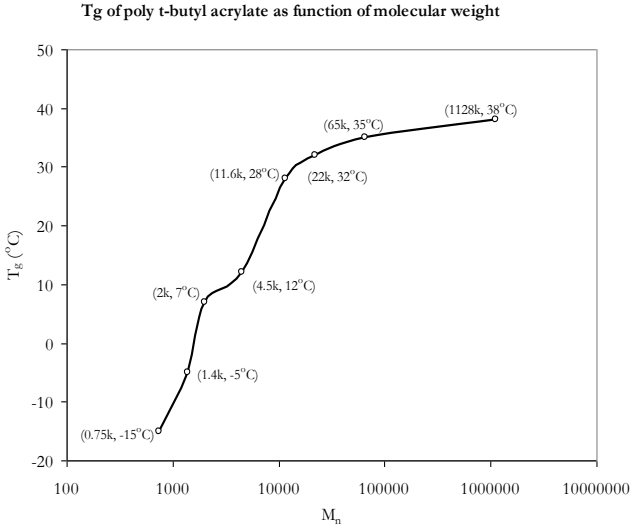
$M_n \times 10^3$	T_g (°C)	$M_n \times 10^3$	T_g (°C)
0.75	-15	11.6	28
1.4	-5	22	32
2	7	65	35
4.5	12	1128	38

SEC of Sample:



Size Exclusion Chromatography of Poly tert-butyl acrylate:

M_n=2500, M_w=3050, PI=1.20



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*