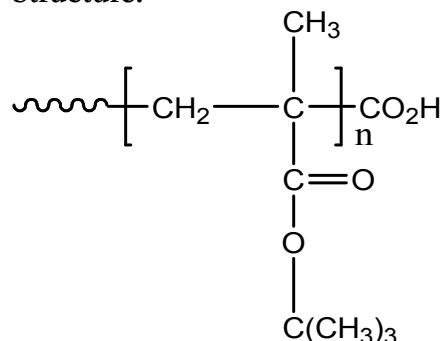


Carboxy Terminated Poly(t-butyl methacrylate)

Rich in isotactic microstructure

Sample #: P8891B-tBuMACOOH

Structure:



Composition:

Mn x 10 ³	PDI	COOH end group functionality	T _g (°C)
24.0	1.4	>90 %	49

Synthesis Procedure:

Carboxy Terminated Poly(*t*-butyl methacrylate) is synthesized by living anionic polymerization (in the presence of an additive) of *tert*.butyl methacrylate followed by termination with dry CO₂ followed by quenching in acidic methanol/water.

Characterization:

The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) before inclusion of the CO₂H function using a Varian liquid chromatograph equipped with a UV and refractive index detector. The functionality of polymer was determined by the titration with NaOH, using phenolphthalein as the indicator.

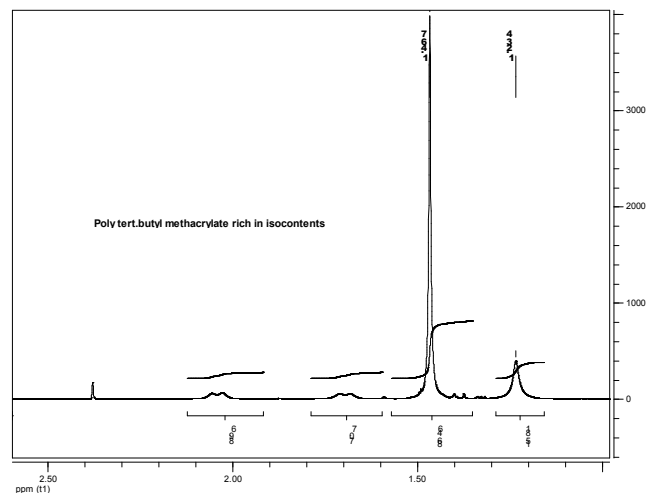
Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

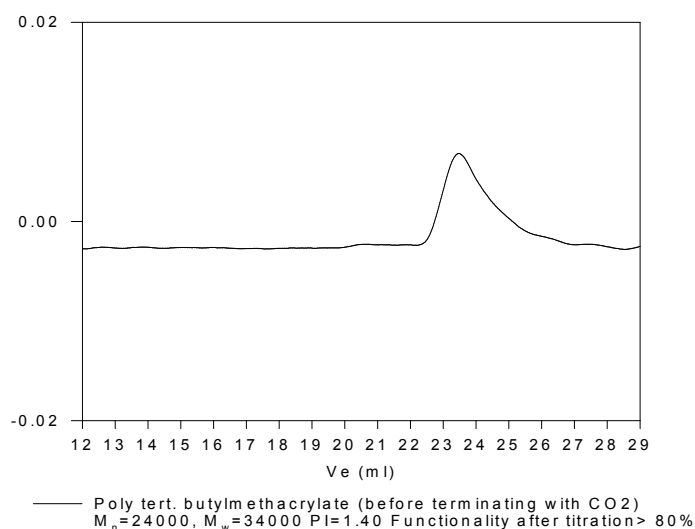
Polymer is soluble in THF, CHCl₃, Toluene, dioxin and precipitated out from methanol/water or in cold hexane.

HNMR of the polymer:

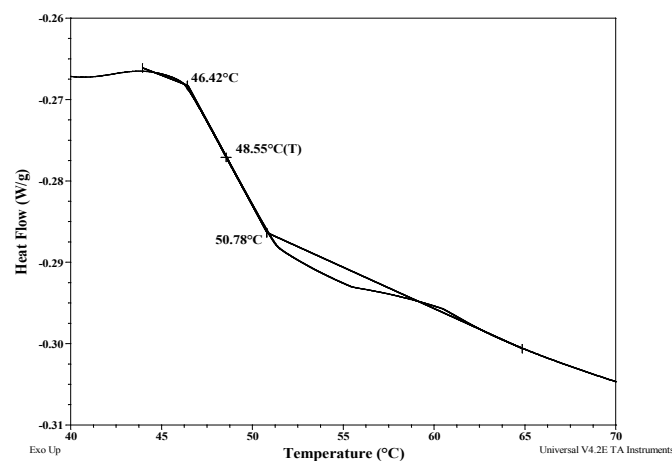


SEC of Sample:

P8891B-tBuMA COOH



DSC thermogram for the sample:



References for further information:

P. Rempp, Y. Gnanou, R. Fayt, C. Jacobs, Ph. Teyssie and **S. K. Varshney**
Eur. Pat. Appl. Mar. 27, 1991. *Eur. Pat. 419314 Patent assignees- Atochem S.A. France. CA Vol. 115, 06, 050585.*

Process for Preparing Functionalised (Meth)acrylic2. Macromonomers and Macromonomers so Prepared".

S. K. Varshney, Z. Gao, Xing Fu Zhong, A. Eisenberg "Effect of Lithium Chloride on the "Living" Polymerization of tert-Butylmethacrylate and Polymer Microstructure Using Monofunctional Initiators" *Macromolecules*, 1994, 27, 1076.