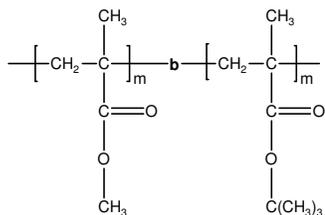


Sample Name: Poly(methyl methacrylate-*b*-*t*-butyl methacrylate)

Sample #: P8425-MMA*t*BuMA

Structure:



Composition:

Mn x 10 ³	PDI
PMMA- <i>b</i> -PtBuMA	1.12
20.0- <i>b</i> -11.0	1.12
T _g for MMA block	117°C
T _g for tBuMA block	Not distinct

Synthesis Procedure:

Poly(methyl methacrylate -*b*- *t*-butyl methacrylate) is prepared by living anionic polymerization by sequence addition of methyl methacrylate followed by addition of *t*-butyl methacrylate or vice versa. **In this case MMA was added first than tBuMA monomer.**

Characterization:

An aliquot of the anionic poly(methyl methacrylate) block was terminated before addition of *t*-butyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the *t*-butyl methacrylate protons at about 1.43 ppm with the peak area of the methyl methacrylate protons at about 3.6 ppm. Copolymer PDI is determined by SEC.

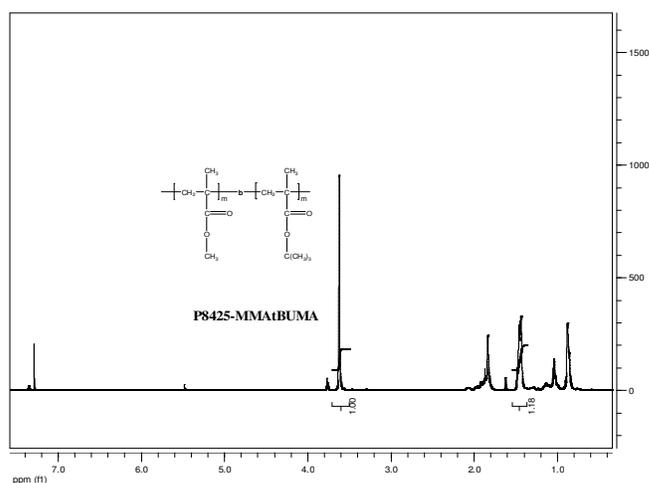
Thermal Analysis

Thermal analysis of the sample 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) has been considered.

Solubility:

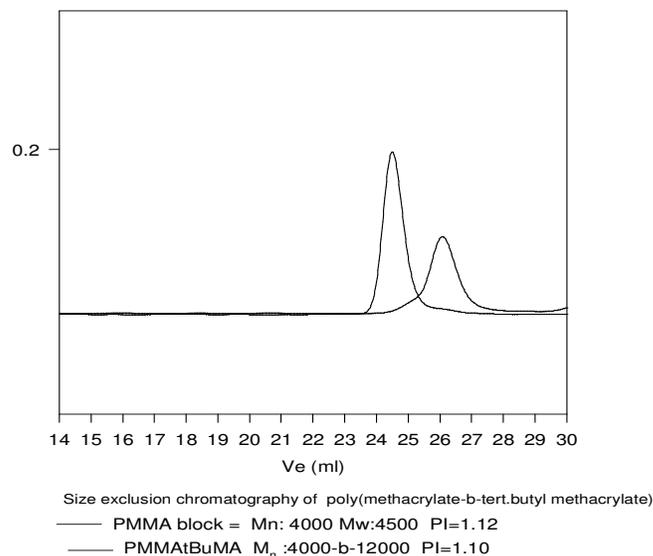
Poly(methyl methacrylate-*b*-*t*-butyl methacrylate) is soluble in THF, CHCl₃, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.

¹H-NMR Spectrum of the block copolymer:



SEC of the block copolymer:

P8424-MMA*t*BuMA



DSC thermogram for the sample

