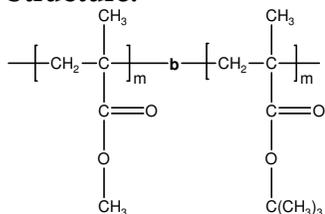


Sample Name: Poly(methyl methacrylate-*b*-*t*-butyl methacrylate)

Sample #: P8421-MMA*t*BuMA

Structure:



Composition:

Mn x 10 ³	PDI
PMMA- <i>b</i> -PtBuMA	
6.5- <i>b</i> -5.4	1.16
T _g for MMA block	100°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

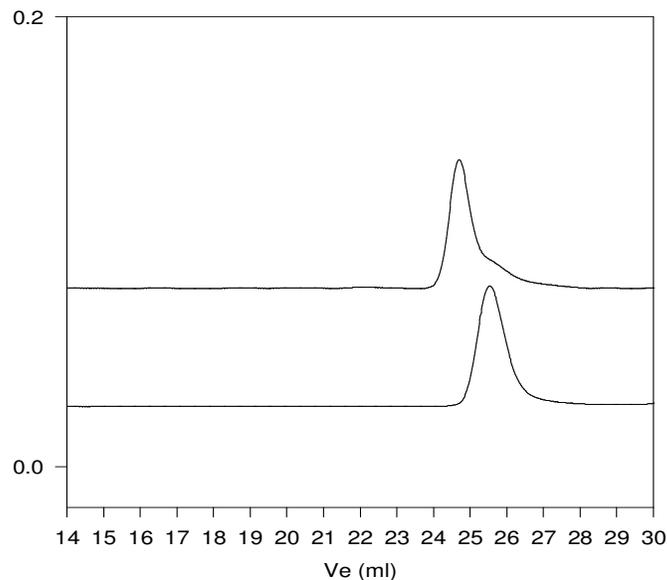
Thermal analysis of the sample was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T_g) has been considered.

Solubility:

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

SEC of the block copolymer:

P8421-MMA*t*BuMA



Size exclusion chromatography of poly(methacrylate-*b*-*t*-butyl methacrylate)

— PMMA block = Mn: 6500 Mw:7500 PI=1.15

— PMMA*t*BuMA M_n: 6500-*b*-5400 PI=1.16

DSC thermogram for MMA block:

