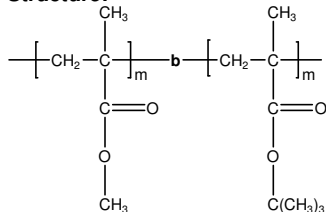


Sample Name: Poly(methyl methacrylate-b-t-butyl methacrylate)

Sample #: P333-MMA**t**BuMA

Structure:

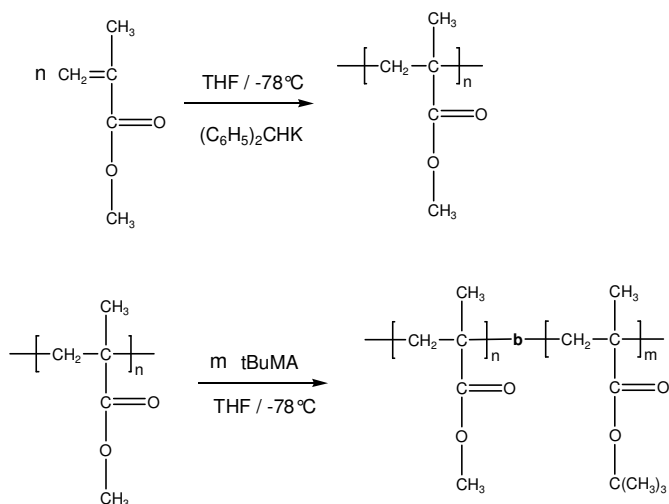


Composition:

Mn x 10 ³ PMMA-b-PtBuMA (k)	PDI
85.0-b-29.9	1.13

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. The scheme of the reaction is illustrated below:



Characterization:

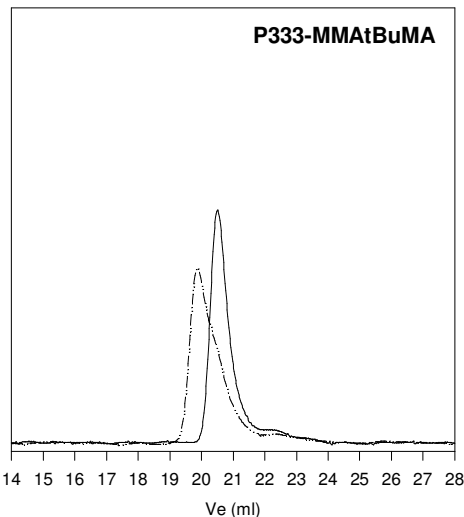
An aliquot of the anionic poly(methyl methacrylate) block was terminated before addition of t-butyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy 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.

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:



Size exclusion chromatography of poly(methyl methacrylate-b-tert.butylmethacrylate)

— PMMA: Mn: 85000 Mw:96100 PI=1.10
- - - PMMA-tBuMA M_n: 85000-b-29900 PI=1.13