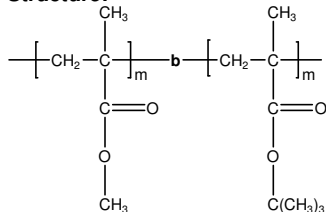


Sample Name: Poly(methyl methacrylate-b-t-butyl methacrylate)

Sample #: P8426-MMAAtBuMA

Structure:

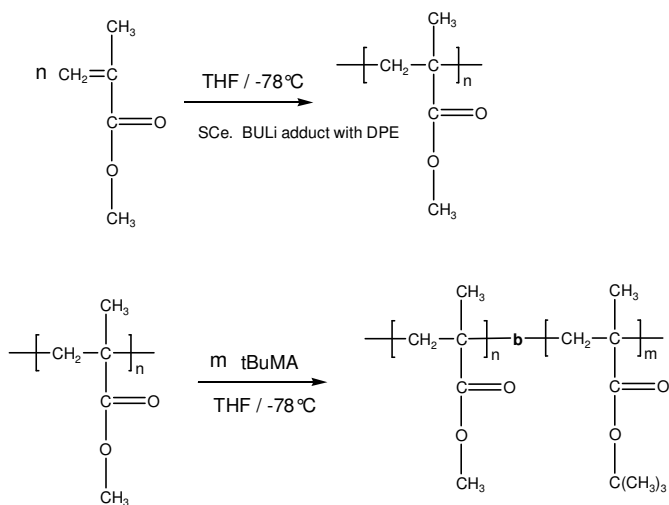


Composition:

Mn x 10 ³ PMMA-b-PtBuMA	PDI
39.0-b-14.0	1.12

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. The scheme of the reaction is illustrated below:



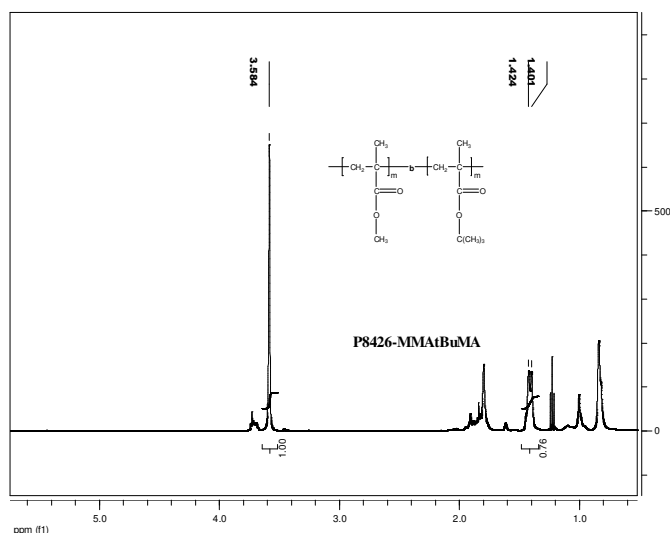
Characterization:

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:

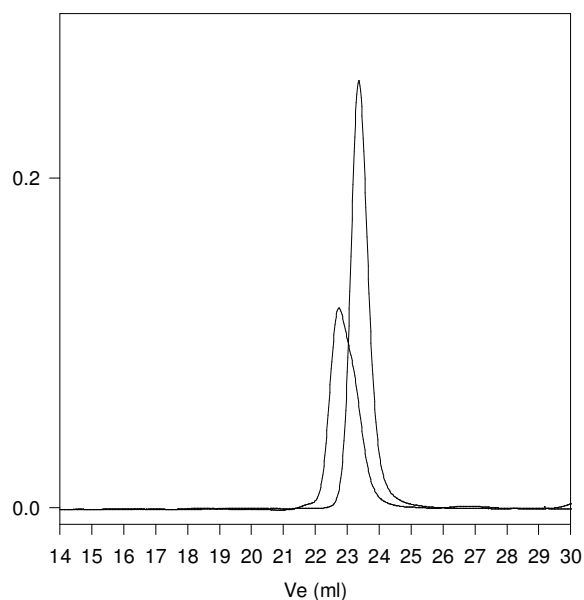
Poly(methyl methacrylate-b-t-butyl methacrylate) is soluble in THF, CHCl₃, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.

¹H-NMR Spectrum of the block copolymer:



SEC of the block copolymer:

P8426-MMAAtBuMA



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

— PMMA block = Mn: 39000 Mw:41000 PI=1.09

— PMAAtBuMA M_n:39000-b-14000 PI=1.12